



**ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY HISTOLOGY & EMBRYOLOGY SYLLABUS (5 Credits)
ANPH501(Term-1)
FALL 2020**

I. Course Faculty and Staff Information

Dr. Sunil K Gupta, Professor & Course Director

E-mail: sgupta@sgu.edu

Phone: 1-473-2315180

Mobile / WhatsApp: 1-473-4589371

Dr. Rhea St. louis, Instructor

E-mail: rstloui2@sgu.edu

II. Course location

Online location—Sakai resources being used (i.e. Panopto, Lessons, Assignments, etc.) and any other.

III. Prerequisite and/or co-requisite courses DVM term 1 courses

IV. Required resources Course notes and power points on Sakai resources, laptop specs like functional microphone, camera, etc.)

VI. Recommended Resource

Textbook of Veterinary Histology. Dellmann, H.D. and Eurell, J.

Textbook of Veterinary Anatomy. 3rd Edition, Dyce, Sack and Wensing

Langman's Medical Embryology by T. W. Sadler

Color Atlas of Veterinary Histology. Bacha, W.J. and Bacha, L.M.

VII. Special accommodation

a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

b. Information can be found at mycampus.sgu.edu/group/saas

VIII. Course rationale

The course begins with the study of cell structure and progresses through the basic tissues to the study of the organ systems. The histology not only provides the microscopic study of the minute details of the body but also the correlation between structure and function. Knowledge of the normal structure is necessary to understand the study of abnormal (pathology), which deals with the alteration in the structure and function of the body tissues/organs caused by the disease process. Course also includes the sequence of normal development from gametogenesis and fertilization to the establishment of body form and the development of the fetal membranes, placentas and various organ systems. Important developmental anomalies occurring in the domestic species, and their various mechanisms leading to these, will be discussed.

IX. Course goals

The histology provides the microscopic details of the structure of the body and its correlation with function as well as their alteration in the process of development of disease. Embryology correlates between normal development and developmental anomalies.

X. Course-level objectives (CLO)

Students should be able to:

1. Understand the microscopic structure of various cells, tissues and organs of the body.
2. Understand the correlation between structure and function
3. Identify various cells, tissues and organ of the body
4. To be able to understand the general and systemic development.
5. To be able to understand the developmental anomalies.

XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies

Program learning outcome (PLO):

A. Core medical knowledge

PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.

PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.

XII. Grading and assessment policy, and grading rubrics

First Quiz (Lecture. no. 1 – 16) 14 th Sept.2020	20 points
Midterm Examination (Lecture. no. 1 - 26) 5 th October 2020	60 points
Second Quiz (Lecture. no. 27 – 36) 2 nd November	20 points
Third Quiz (Lecture. no. 37 - 47) 16 th November	25 points
Final Examination (Lecture. no. 1 - 60) 30 th November	75 points
Lab Assignment	25 points
Total	225 point

Grades:

A	89.5-100%
B+	84.5-89.49%
B	79.5-84.49%
C+	74.5-79.49%
C	69.5-74.49%
D+	64.5-69.49%
D	59.5-64.49%
F	0-59.49%

XIII. Recommended study strategies

Students are strongly recommended to study on daily basis. Be very specific to all the structure, their location / functions.

XIV. Instructor's expectations of the student

The student is expected to read the required material before zoom session.

XV. Professional Statement

Students are expected to conduct themselves with integrity, dignity, and courtesy as defined in the Code of Conduct of the University.

XVI. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVIII. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.

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4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
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 - b. The examsoft student perspective video 30mins
 - c. The Examsoft/Exam ID FAQ
 - d. Examsoft information page
 - e. The general Reminders/Guidelines

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendix:

- 1. Lecture & Lab schedule (Detailed course contents with lecture notes)**
- 2. Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies**

Table 1: Lecture & Lab schedule (Detailed course contents with lecture notes)

Week / dates	Topic and material covered	Scheduled activity
1. Aug.17-21	Lecture 1-4 Sakai - Panopto Introduction of the course and course syllabus, Cytology: Cell membrane and nucleus Cell organelles & Inclusions Intercellular junctions & specialization of cell surfaces Lab.1 Study of microscope, staining and artifacts	Zoom on Wednesday at 12.30 pm
2. Aug.24-28	Lecture 5-8 Sakai - Panopto Epithelium: classification Gland: classification Connective tissues cells, fibers, ground substance Various types of Connective tissue Lab.2&3 Epithelium, glands and Connective tissue	Zoom on Wednesday at 12.30 pm
3. Aug.31- Sept.4	Lecture 9-12 Sakai - Panopto Cartilage and bone Muscular tissue Nervous tissue: neuron and classification Neuroglia & Peripheral nerve Lab.4 Cartilage, bone and muscles	Zoom on Wednesday at 12.30 pm
4. Sept.7-11	Lecture 13-16 Sakai - Panopto Ganglia, Nerve endings & CNS Cardiovascular system: heart Cardiovascular system: blood vessels Blood and bone marrow Lab.5-6 Nervous system, blood vessels and blood	Zoom on Wednesday at 12.30 pm
5. Sept.14-18	Lecture 17-20 Sakai - Panopto Immune system: cells and organs, Lymph node Thymus, spleen and Hemal node Respiratory system Avian respiratory system Lab.7 Lymphatic and Respiratory system	Quiz-1 on Monday 14th September Zoom on Wednesday at 12.30 pm
6. Sept.21-25	Lecture 21-23 Sakai - Panopto Digestive system: Oral cavity and tongue Teeth, salivary gland and esophagus Ruminant and glandular stomach Lab.8 Digestive system I	Zoom on Wednesday at 12.30 pm

7. Sept.28-Oct.2	Lecture 24-26 Sakai - Panopto Small and large intestine, Anal canal and anal sacs Liver and pancreas Avian digestive system Lab 9 & 10 Digestive system II	Zoom on Wednesday at 12.30 pm
8. Oct.4-8	MID TERM EXAMINATION	Monday 5th October 2020
9 Oct.11-15	Lecture 27-30 Sakai - Panopto Urinary system: kidney Ureter, urinary bladder and testis (partly) Testis, ductus deferens, accessory sex glands and urethra Female reproductive: ovary and uterine tube Lab.10 Urinary and Male genital system	Zoom on Wednesday at 12.30 pm
10. Oct.18-22	Lecture 31-33 Sakai - Panopto Uterus, vagina and avian urogenital system Endocrine: Hypophysis and Pineal gland Thyroid, parathyroid, adrenal, pancreas and skin (partly) Lab. 11-12 Male and female genital system,	Zoom on Wednesday at 12.30 pm
11. Oct.25-29	Lecture 34-36 Sakai - Panopto Integument: skin and hair Glands: mammary and others gland and hoof Sense organ: Eye and ear Lab 13-14 Endocrine, Integument, Mammary gland and sense organ	Zoom on Wednesday at 12.30 pm
12. Nov.1-5	Lecture 37-41 Sakai - Panopto Introduction of embryology and gametogenesis Ovulation, and Fertilization and cleavage Cleavage and Formation of germ layers Body folding, fetal membranes and Implantation Comparative placentation & Teratology	Quiz-2 Monday 2nd November Zoom on Wednesday at 12.30 pm
13. Nov.8-12	Lecture 42-47 Sakai - Panopto Development of blood vessels, blood and heart Cardiac abnormalities, embryonic circulations, aortic arches Development of veins, fetal circulation and abnormalities Development of Musculoskeletal and abnormalities Development of digestive tube Development of liver, pancreas and abnormalities	Zoom on Wednesday at 12.30 pm

14. Nov.15-19	Lecture 48-52 Sakai - Panopto Development of respiratory system and abnormalities Development of Urinary system and abnormalities Development of Genital system and abnormalities Development of Neural tube and spinal cords Development of brain, endocrine and abnormalities	Quiz-3 Monday 16th November Zoom on Wednesday at 12.30 pm
15 Nov.22-26	Lecture 53-56 Sakai - Panopto Development of eye and pharynx Development of pharynx, tongue and teeth Development of Ear & face, teratology	Zoom on Wednesday at 12.30 pm
16. Nov.29-Dec.3	FINAL EXAMINATION	Monday 30th November 2020

Table 2: Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies

	Course learning outcomes	Program learning outcomes
1	Understand the microscopic structure of various cells, tissues and organs of the body.	PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2	Understand the correlation between structure and function	PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
3	Identify various cells, tissues and organ of the body	PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
4	To be able to understand the general and systemic development.	PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
5	To be able to understand the developmental anomalies.	PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

COMPARATIVE VETERINARY ANATOMY (5 credits)

ANPH 503; TERM 2

FALL TERM, 2020

I. Course Faculty and Staff Information

- a. Course Director: **Tom A. Aire, DVM, PhD, FCVSN, FAS Professor.**

Tel: 444 - 4175 Ext. 3327

E-mail: taire@sgu.edu

- b. Office Location: Marion Hall, Lower True Blue [Veterinary Office Building (SGU campus map: # 47)]
- c. Office Hours: by **email**
- d. Other faculty members: Dr. E. Rennie, DVM, MSc., Associate Professor, erennie@sgu.edu, [Ext. 3329]; Dr. Crissy-Ann Harrylal, BSc, DVM, Instructor, CHarryl1@sgu.edu [Ext. -----]
- e. Staff member names, credentials, title, email address is applicable
- i. Mr. Matthew Charles, Senior Technician; Ext. 3469; mcharle6@sgu.edu
- ii. Mr. Curtis Hopkins, Technician; Ext. 3469; CHopkin2@sgu.edu

II. Course location

Online location – both lecture and laboratory segments of the course employ SAKAI Resources --- Panopto, Lessons, Assignments, Announcements, etc.

III. Prerequisite and/or co-requisite courses

The offering of this course is predicated upon successful completion of the Veterinary Anatomy I (ANPH506) course, and SAMS ---- which lay the foundation for the basic structure and radiographical features of the mammalian body, with particular reference to the type animals, canine and feline species.

IV. Required resources (texts, journal articles, course notes, laptop specs like functional microphone, camera, etc.)

a. Required Textbooks and course handouts:

‘Textbook of Veterinary Anatomy’, by Dyce, KM, Sack, WO and Wensing, CJG.
W. B. Saunders’

b. Required Laboratory Guides:

Ruminants: ‘Guide to Ruminant Anatomy on the Dissection of the goat’, by P. D. Garret. Iowa University Press; **videos of prosections**

Swine: Laboratory handout notes and dissection slides.

Equine: “Horse Dissection Guide by M. S. A. Kumar [on SAKAI]; **slides of equine dissection** ----- on SAKAI

Avian: Laboratory handout notes and **video on a prosected specimen.**

V. Recommended resources (texts, journal articles, course notes, laptop specs like functional microphone, camera, etc.)

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Laptops are as specified in the Students’ Handbook and the Examinations Services

VIII. Course rationale (catalogue course description)

ANPH 503 is based on regional anatomy, and emphasizes unique *structural* features, with particular reference to important applied, regional, anatomy of the horse, ruminants (including the bovine, ovine and caprine species), pig, as well as avian and piscean (fish) species.

Much of detailed basic anatomy (considered to be covered in Veterinary Anatomy I) will be omitted while areas of clinical importance are accorded due emphasis. References to clinical cases will be made, where appropriate, to underscore the importance of a thorough knowledge of the areas under study. Both the lecture and laboratory components of this course constitute the material from which examination questions shall be drawn.

IX. Course-level outcomes

a. This course consolidates and complements the functional anatomy of the animal body as related to veterinary medicine, and ensures that the student is able to recognize structural and unique differences between species of animals of veterinary importance. Students are exposed to regional anatomical areas, and are aware of the particular relevance and importance of appropriate areas, organs and structures to applied/clinical veterinary activities (such as diagnostic imaging, general diagnosis requiring conformational and topographical evaluation, surgery, etc.), thus preparing them for the third and other years of the DVM degree program. Students shall, also, be able to relate the nervous system of the animals to neurological deficits, generally. This course also exposes students to collegial and mutually beneficial group activities, especially during dissection and palpation sessions.

b. The ANPH 503 course is subsequent to the ANPH 506 (canine and feline anatomy) course, and is responsible for the basic and comparative anatomy of ungulates (equine, ruminant, porcine), avian and piscine species, as well as relevant and appropriate clinical/applied anatomical features. At the end of the course students shall be able to,

1. describe and identify the main morphological features of all body regions of the ungulates (equine, ruminant, porcine), avian and piscine species,
2. apply the acquired anatomy knowledge in evaluating normal structure and form of the ungulate, avian and piscine species,
3. describe and identify congenital deformities/abnormalities and underdevelopment and their effect on form and function,
4. relate acquired structural changes and deficits to anatomical conformation and function,
5. emphasize those areas and structures which are of practical/clinical importance, i.p. where applied to the fields of radiology, surgery, neurology, and internal medicine,
6. demonstrate the manual skills necessary to incise the skin and open hollow organs, remove connective tissue, identify various types of tissues; manipulate one segment of the body relative to another, e.g. limb segments at joints, and to delineate on the surface of the animal various relative positions of organs and structures in topographic anatomy,
7. function constructively in a team and demonstrate responsibility for the teams' performance,
8. demonstrate professional behavior in relation to their peers, staff members and faculty.

X. Lesson-level outcomes

This section should list the lecture titles and lesson learning outcomes (LLOs) for each lecture. (Again: the student learning outcomes will have to be measurable. For more information please see statement above regarding course outcomes).

This section may be appended as a table at the end of the syllabus. If the course director chooses to append at the end of the syllabus, this may be noted on this section. [SEE ATTACHMENT 2]

XI. Alignment of Course Learning Outcomes (CLO) with Program Learning Outcomes (PLO)

Program Competencies	Course Learning Objective #
A. Core Medical Knowledge	I = introduce R = reinforce
1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.	1, R
2. Analyze homeostasis and disturbances thereof.	R
4. Explain the relationship between disease processes and clinical signs.	I
6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.	I, R
7. Evaluate and analyze normal versus abnormal animal behavior.	I, R
10. Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.	I
11. Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.	I, R
B. Core Professional Attributes	
1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	I
2. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.	I
3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	I
4. Model lifelong continuing education and professional development.	I
5. Demonstrate and model adaptability and resilience.	I

6. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.	I
C. Core Clinical Competencies (Skills)	
1. Execute a comprehensive patient diagnostic plan and demonstrate problem-solving skills to arrive at a diagnosis.	I
3. Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.	I
4. Analyze, design and execute appropriate plans for basic surgery and surgical case management.	I
9. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.	I

XII. Course Schedule

The course schedule should be made as a weekly schedule, broken down into lessons, assignments, and assessments per week. This will allow students to have a plan to follow but make allowances for internet connectivity issues.

By week: list lecture/lab/topic titles, name of lecturer/instructor, and associated assignments/assessments due that week.

Credit hours and lecture hour equivalents: Please ensure that your lecture/lab/assignment/assessment schedule adheres to the credit hours designated for your course, and to provide students with adequate time for self-guided learning (see Panopto Best Practices Document for more info):

- 1 credit hour = 15 lecture equivalents.
- 1 lecture hour = 2 lab hours = 2 self-study or assignment hours.
- **Note: assignments are optional, but if included, factor in to credit hours as below.**

[SEE Attachment 1](#)

XIII. Grading and assessment policy, and grading rubrics (must comply with SGU and SVM assessment guidelines)

Grading scale

Assessment:

Assessments shall be by quizzes, for both the “Lecture” and “Laboratory” segments of the course. Multiple choice questions shall be employed, mainly, in both cases, even when diagrams/pictures are used. Each quiz shall contribute a maximum of 10 points to the final mark/grade for the course. There shall be one “Lecture” quiz before the Mid-Term examination, and one before the Final examination. There shall be two “Laboratory” quizzes before the Mid-Term examination and two before the Final examination. The “Laboratory” component of the quizzes and examinations will involve the identification of tagged/pinned materials, as well as relevant questions pertaining thereto, where necessary. The illustrations used in the “Laboratory” quiz/examination shall be the same, or as close as possible to those, provided in the learning slides and videos.

The quizzes shall be based on the SAKAI “Tests/quizzes” system, shall last for 20 minutes each, and shall be open for one week, due to time zone differences. [The Midterm and Final course examinations shall be based on the ExamSoft system of assessment.](#) As usual, the Special Accommodation students shall be given the appropriate extra time allocated.

Ruminant/Pig

Laboratory Quiz 1 (Open August 28, 2020) --- 10 points (Lab. Nos. 1- 4)
Lecture Quiz 1 (Open September 11, 2020) --- 10 points (Lect. Nos. 1-10)
Laboratory Quiz 2 (Open September 18, 2020) --- 10 points (Lab. Nos. 5 -10)
Midterm Examination [Lecture] (Oct. 8, 2020) ----- 60 points (Lect. Nos. 1-21)
Midterm Examination [laboratory] (Oct. 8, 2020) --- 40 points

Total = 130 points

Equine Anatomy, Avian and Fish Anatomy

Laboratory Quiz 3 (Open October 30, 2020) ---- 10 points (Lab. Nos. 15-20)
Lecture Quiz 2 (Open November 6, 2020) ---- 10 points (Lect. Nos. 22-32)
Laboratory Quiz 4 (Open November 20, 2020) ---- 10 points (Lab. Nos. 21-26)
Midterm Examination [Lecture] (Dec. 2, 2020) ----- 60 points (Lect. Nos. 22-37)
Midterm Examination [Laboratory] (Dec. 2, 2020) -- 40 points

Total = 130 points

XI. **Grading policy:**

<u>Grade</u>	<u>Percentage score</u>	<u>Grade Point</u>
A	89.5-100	4
B+	84.5-89.49	3.5
B	79.5-84.49	3
C+	74.5-79.49	2.5
<u>C</u>	<u>69.5-74.49</u>	<u>2</u>
D+	64.5-69.49	1.5
<u>D</u>	<u>59.5-64.49</u>	<u>1</u>
<u>F</u>	<u><59.49</u>	<u>0</u>

XIV. **Recommended study strategies**

Anatomy is best learned by having relevant specimens or using good quality and accurate diagrams, pictures, or drawings, at hand. Attendance and hands-on activities at dissection sessions are invaluable. For virtual learning, there are several, good videos online which students can access and use reasonably without breaching copyright issues. Prior reading of lecture and laboratory material is highly recommended and profitable. Small group (three, but not more than five persons) study sessions are very helpful and beneficial, where possible.

XV. **Instructor's expectations of the student**

Example: The student is expected to read the required material before class, etc
I expect students to read through the dissection guides (available on SAKAI) before study of the laboratory slides and videos. This is extremely helpful, not only in orientation but also in recognition of structures and understanding of

topography. In dissection slides, it is important that you try to recognize structures in diagrams, drawings and photographs. You are encouraged to practice making sketches of organs and structures, as you read along. Remember, do not read anatomy as you would a novel. Anatomy is one; there is no division between knowledge obtained during the laboratory segment and that obtained from the lecture or panopto recording.

XVI. Professionalism statement

Course director's expectations regarding professionalism

The SGU's Student Policies, Procedures and Non-Academic Standards are detailed in the SGU Student Manual, 2016/2017.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Please be specific about your attendance, engagement and participation expectations here.

A particular course may define additional policies regarding specific attendance or participation (i.e. Forums participation grading, etc.).

If the attendance policy differs from the above, delineate details here.

Lecture or Zoom session attendance policy: the Zoom sessions, except the first one during the first week of the term, are not mandatory, but desirable.

Laboratory session attendance policy: it is expected that every student will comply very strictly with the instructions on the laboratory component of this course. This prepares students for necropsy and surgery courses, as well as

physical diagnosis. In the virtual learning system, all recommended prosection slides and videos should be studied very carefully, with the previously obtained canine and feline anatomy knowledge providing essential guide and basis for appreciation of regional, systemic, and organ structure.

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Appendices (if applicable):

Course Schedule

CLOs

LLOs

PLO to CLO mapping

Rubrics

Wk	Lect No.	<u>ANPH 503 – 5cr.</u> Lecture [Panopto] topic and Quiz <i>* <u>Each lecture is for 50min.</u></i> <i>* <u>Quiz lasts for 20min.</u></i>	Date	Time	Instruct.	Lab. No. and Quiz	Laboratory topic and Guide pages <i>* <u>Each Lab. Period is 2hr. [1.30-3.30pm]</u></i> <i>* <u>Each Lab. quiz lasts for 20 min.</u></i>
1	1 2 3	<u>RUMINANT</u> : Neck and thorax Abdomen Abdomen ZOOM – 12.30 -1.30 pm; Thursday, Aug. 20	<u>Aug</u> (17 th - 21 st)	<u>1 hour</u> “ “	Aire Aire Aire	<u>2 h. periods</u> 1 “ 2 “ [TA/ER/CH]	<u>RUMINANT</u> : Neck and Thorax “ “ [Goat Diss. <u>SLIDES – 1 to 14</u>, and <u>Goat Video on neck/thorax</u>]
2	4 5 6	Abdomen Pelvis and Male Reprod. organs “ “ “ “ “ (contd.) ZOOM – 12.30 -1.30 pm; Thursday, Aug 27	Aug (24 th - 28 th)	“ “ “	Aire Aire Aire	3 “ 4 “ <u>Lab Quiz 1 (10 points) [Labs 1-4]</u> <u>(Open Aug 28 – Sept 4)</u>	Abdomen (pp. 18-33) Abdomen (cont.) [Goat Diss., Slides = <u>15 to 30</u>, and <u>Goat Video on the abdomen</u>]
3	7 8 9	Pelvis and Female Reprod. organs Mamma Mamma (contd.) ZOOM – 12.30 -1.30 pm; Thursday, Sept 3	Aug/Sept (31 st - 4 th)	“ “ “	Aire Aire Aire	5 “ 6 “	Pelvis (pp.33 - 46) Male and Female reprod. organs and tract (pp. 47 – 54) [Goat Diss., Slides – <u>31 to 40</u>, and <u>Goat Video on the pelvis</u>]

Attachment 1

4	10 11 12	Limbs Head: general structure <u>Quiz 1 [Lects. 1 to 10] (10 points)</u> <u>(Open Sept 11 - 18)</u>	Sept (7 th - 11 th)	“ “ “	Harrylal Rennie	7 “ 8 “	Thoracic limb (55 – 66) “ “ (contd.) <u>[Goat Diss., Slides – 41 to 46, and Goat Video on the forelimb]</u>
5	13 14 15	Head (contd.) – general structure Head (contd.) - neuroanatomy Head: neuroanatomy ZOOM – 12.30 -1.30 pm; Thursday, Sept 17	Sept (14 th - 18 th)	“ “ “	Rennie Rennie Rennie	9 “ 10 <u>Lab Quiz 2 (10 points)</u> <u>[Labs. 5-10]</u> <u>(Open Sept 18 – 25)</u>	Pelvic limb (pp. 67 - 77) Pelvic limb (contd.) <u>[Goat Diss., Slides – 47 to 55, and Goat Video on the hindlimb]</u>
6	16 17 18	<u>EQUINE: Neck</u> Thorax Abdomen ZOOM – 12.30-1.30 pm; Thursday, Sept 24	Sept (21 st - 25 th)	“ “ “	Aire Aire Aire	11 “ 12 “	Rum. head (pp. 78 – 87) Rum. Neuroanat. <u>[Goat Diss. Slides – 56 to 68, and Goat Video on the abdomen]</u>
7	19 20 21	Abdomen (contd.) Abdomen (contd.) Pelvis and male reprod. organs <u>ZOOM —</u> <u>Thursday, Oct 1: 12.30 -1.30 pm</u>	<u>Sept/Oct</u> (28 th Sept- 2 nd Oct)	“ “ “	Aire Aire Aire	13 “ 14 “	<u>EQUINE</u> Neck (3-16) Neck and Thorax (pp. 17 – 31) <u>[EQ. Cornell Slides: neck/thorax]</u>
8		MID-TERM EXAMINATIONS	<u>Oct 8</u>	10.00 am	TA/ER/CH	1.30pm	
9	22 23 24	Pelvis and female reprod. organs Forelimb- arthrology Forelimb – arthrology/myology ZOOM – 12.30-1.30 pm;	Oct (12 th - 16 th)	“ “ “	Aire Harrylal Harrylal	15 “ 16 “	Abdomen (pp. 37 -50) Abdomen (contd.) <u>[EQ. Cornell Slides: abdomen]</u>

		Thursday, Oct 15					
10	25 26 27	Forelimb –myology/neurol Forelimb – neurol/angiology Hindlimb- arthrology/myology ZOOM – 12.30-1.30 pm; Thursday, Oct 22	Oct (19 th - 23 rd)	“ “ “	Harrylal Harrylal Harrylal	17 “ 18 “	Pelvis (pp. 51 – 79) Pelvis + forelimb [EQ. Cornell Slides: pelvis and forelimb]
11	28 29 30	Hindlimb - myology/neurol Equine foot Equine foot (contd.) ZOOM – 12.30-1.30 pm; Thursday, Oct 29	Oct (26 th - 30 th)	“ “ “	Harrylal Harrylal Rennie	19 “ 20 “ Lab. <u>Quiz 3</u> (10 points) <u>[Labs 15 - 20]</u> <u>(Open Oct 30 – Nov 6)</u>	Forelimb (pp. 112-152) Forelimb (pp. 112-152) [EQ. Cornell Slides: forelimb]
12	31 32 33	HEAD – general structure of, HEAD – specific structures of, <u>Quiz 2 [Lects. 22 to 32] (10 points)</u> (Open Nov 6 - 13) ZOOM – 12.30-1.30 pm; Thursday, Nov 5	Nov (2 nd - 6 th)	“ “ “	Rennie Rennie	21 “ 22 “	Hindlimb (pp. 80-111) Hindlimb (80-111 contd.) [EQ. Cornell Slides: Hindlimb]
13	34 35 36	HEAD - neuroanatomy AVIAN: skeleton, muscles, pharynx “ gastroint. tract + resp. system ZOOM – 12.30-1.30 pm; Thursday, Nov 12	Nov (9 th - 13 th)	“ “ “	Aire Aire Aire	23 “ 24 “	Head Head [EQ. Cornell Slides: Head]
14	37 38	“ respiratory system (contd.) + reprod. “ reprod. system, lymphatic and nervous systems <u>ZOOM – general</u> <u>[Thursday, Nov 19: 12.30-1.30 pm]</u>	Nov (16 th - 20 th)	“ “	Aire	25 “ 26 “ Lab. <u>QUIZ 4</u> (10 points) <u>[Labs 21 - 26]</u>	Fish dissection video Avian dissection video

						<u>(Open Nov. 20-27)</u>	
15		Revision: Email and Forum sessions	Nov. (23 rd - 27 th)				
16		FINAL EXAMINATIONS	<u>Dec. 2</u>	<u>8.30am</u>	TA/RE/CH	<u>1.30pm</u>	

Attachment 2

Course Name: **Veterinary Anatomy II (ANPH 503)** Taught by: **T. A. Aire, E. Rennie, C. Harrvial**

List lecture and Labs Learning Outcomes

Map onto **Course Learning Outcomes:**

1. Cutaneous appendages of, and vertebral column and its attachments in, ungulates: identify tissue layers of the skin, its appendages, cutaneous muscles; identify regions of the vertebral column and their peculiarities in various species
2. Fascia and cutaneous muscles: identify, describe, distinguish, explain structure and function of cutaneous muscles
3. The thorax: identify species variability of structure and function, and organ disposition
4. The thoracic limb: identify, explain, compare and distinguish important morphological features
5. The abdomen and mamma: identify, explain, and compare structure and function between species
6. The pelvis and hind-limb: identify, explain, compare and distinguish structure and function between species
7. The head: identify and explain the main and clinically relevant morphological and functional differences between species
8. Avian anatomy: identify and explain main adaptational, morphological, functional and clinically relevant features in birds
9. Piscean anatomy: identify and explain main adaptational, morphological, functional and clinically relevant features in fishes.

Note: each lecture/lab learning outcome may relate to several Course Learning Outcomes.

<p><u>Lecture /lab name and number</u></p> <p>(remember that if about the same topic, a group of lectures may be one unit)</p> <p><u>[COVID-19, FALL TERM ONLY]</u></p>	<p>Your <u>Lecture/Lab Learning Outcomes:</u></p> <p>(Add or delete LLOs according to your needs)</p>	<p><u>Course Learning Outcome Nos.</u></p> <p>(Link it to your CLOs provided in the document we used in the workshop).</p>
<p>1. The Skin and vertebral column of ungulates (e.g. bovine, ovine, caprine, porcine and equine species), skin derivatives; the neck: main features of the neck segment of the vertebral column</p>	<ol style="list-style-type: none"> 1. identify various cutaneous appendages 2. identify foot pads in animals 3. explain function of footpads, hooves, 4. identify main muscles of the neck 5. identify the borders of the jugular furrow, its content and relationship 6. explain the visceral space of the neck, its boundaries, and content 7. identify and explain muscles innervated by the accessory nerve 	<p>1, 2</p>
<p>2 and 3. <u>Ruminant and pig</u> thorax</p>	<ol style="list-style-type: none"> 1. identify and explain the functions of the major muscles attaching at or to the thorax 2. explain the innervation of the main muscles 3. identify the parts of the serous membrane of the thorax, and their disposition 4. identify all viscera of the thorax, and their spatial relationships 5. identify the tracheal bronchus, and explain its significance 6. identify and explain the salient features of the nerves and blood vessels and lymph drainage of the thorax <p><u>Applied anatomy:</u></p> <ol style="list-style-type: none"> 7. explain the relationship between, and implication of, the deep fascia of the neck, endothoracic fascia and fascia transversalis 	<p>1, 2, 3</p>

	<p>(transverse fascia)</p> <p>8. explain the purposes and sites of thoracocentesis, pericardiocentesis, intracardiac injections</p> <p>9. explain positions and sites of auscultation of heart valves</p> <p>10. identify and explain the usual sites of esophageal obstruction in the bovine animal</p> <p>11. explain the potential consequences of the enlargement of the tracheobronchial and caudal mediastinal lymph nodes.</p>	
4, 5, 6. Ruminant and pig abdomen	<p>1. identify, and explain the function of various parts of the cutaneous muscle of the abdomen</p> <p>2. identify, know the attachments, functions, and innervation of the abdominal muscles</p> <p>3. identify parts of the digestive tract, and explain their differences between the dog, ruminants and pig (e.g. the rumen, the spiral colon, the omenta).</p> <p>3. recognize and identify all other viscera, their species peculiarities (e.g. the liver, kidney), relationships with other viscera (e.g. between the liver and the rumen), their functions, blood and nerve supplies</p> <p>4. identify the main lymph nodes of the abdomen.</p> <p style="text-align: center;"><u>Applied anatomy:</u></p> <p>5. explain sites where incisions can be made into the abdominal cavity of ruminants</p> <p>6. explain local nerve blocks and sites, and nerves involved in paralumbar fossa incisions;</p> <p>7. explain autonomic innervation of the stomach of the ruminant;</p> <p>8. explain the noteworthy features of the blood supply to the viscera, e.g. of the small intestine</p>	1, 2, 5
7, 8, 9. Ruminant and pig pelvimetry, pelvic walls, and perineum	<p>1. explain methods of pelvimetry</p> <p>2. identify and explain major positive and negative structural features of the birth canal in</p>	6

	<p>the female mammal</p> <p>3. explain the concept and significance of the perineum, its major segments, and the components of each segment</p> <p>4. explain the innervation of the perineum.</p>	
(contd.) Ruminant and pig reproductive organs	<p>1. locate and recognize the genital folds – male and female</p> <p>2. locate, recognize and identify the reproductive organs and parts thereof</p> <p>3. identify and know variations in the gonads and tubular genitalia of female animals</p> <p>4. identify and explain the blood supply and drainage of the organs</p> <p>5. locate, recognize and identify parts of the testis and epididymis, ductus deferens and its course,</p> <p>6. locate and identify the accessory sex glands and their components</p> <p>7. identify the various parts of the penis, scrotum, prepuce (including the significance of the preputial diverticulum in the boar), and their blood supply</p> <p>8. explain the nerve supply to 7, above, and where local nerve blocks can be conducted.</p>	6
10, 11. Ruminant and pig mammae	<p>1. locate and identify gross features of the mamma in various species</p> <p>2. explain the suspensory apparatus of the udder of the cow, and effect of rupture of any component</p> <p>3. explain and identify parts of the mammary glands and their duct systems</p> <p>4. explain the blood supply of the mamma, and understand the main features of the venous drainage and lymphatic system of the udder</p>	5
12. Ruminant and pig limbs – main features	<p>1. identify the bones and their major features in both the thoracic and hind-limbs</p> <p>2. explain the comparative myology of each</p>	1, 4, 6

	<p>limb especially in equine and bovine species</p> <p>3. explain the comparative arthrology of both limbs</p> <p>4. explain the main components of the nerves of both limbs, and their use in diagnoses</p> <p>5. understand and explain the main vascular system of both limbs</p> <p>6. understand and identify the components and function of the ungulate hoof</p> <p>7. identify the main nerves, and know the sites of nerve blockage.</p>	
<p>13-15. Ruminant and pig head, essential neuroanatomy</p>	<p>1. identify the main bones and salient comparative features of the ungulate skull</p> <p>2. identify and explain the various compartments of the head (nasal, oral, pharyngeal, laryngeal, paranasal cavities)</p> <p>3. identify the various viscera and the topographical relationships of the main structures of the head in a dissected specimen</p> <p>4. identify and recognize the main paranasal sinuses, and their applied significance</p> <p>5. identify the muscles of mastication and their comparative myology</p> <p>6. identify and explain the main joints and their ligaments in the head</p> <p>7. identify the main features of the larynx and eye, and their extrinsic and intrinsic muscles, as well as their innervation</p> <p>8. identify the main arteries and veins (superficial and deep) of the head</p> <p>9. identify the main superficial branches of the cranial nerves V, VII, caudal auricular, recurrent laryngeal and cranial laryngeal nerves</p> <p>10. be able to plot the courses of the buccal and cornual nerves on the skull</p> <p style="text-align: center;"><u>Applied anatomy</u></p>	<p>1, 2, 7</p>

	<p>11. identify main features of the skull and hyoid apparatus (zygomatic arch, external occipital protuberance, angle of the mandible, chin, temporal fossa, infraorbital foramen, mental foramen)</p> <p>12. identify clinical borders for trephine of the paranasal sinuses in the bovine</p> <p>13. explain the anatomical factors influencing dosing of oral fluids in ungulates</p> <p>14. explain dehorning and its purpose, and nerve blocks involved in ruminants</p> <p>15. explain intravenous injection, using the lateral auricular vein in the pig</p>	
<p>16. EQUINE vertebral column, ligamentum nuchae, unique muscles; visceral space of neck</p>	<p>1. explain the rigidity of the thoracolumbar segment of the vertebral column, and relate it to casting of the horse</p> <p>2. identify and know the comparative features of the cutaneous muscles</p> <p>4. explain function of the hooves,</p> <p>5. identify main muscles of the neck, including extrinsic muscles of the forelimb</p> <p>6. identify the borders of the jugular furrow, its content and relationship</p> <p>7. explain the visceral space of the neck, its boundaries, and content, and the relationship between the external jugular vein and the carotid sheath</p> <p>8. identify and explain muscles innervated by the accessory nerve and its divisions</p>	<p>1, 2</p>
<p>17. Equine thorax – walls, viscera, angiology, neurology of the equine species</p>	<p>1. identify and know the attachments of muscles of the thorax, and their innervation, blood supply and functions, including intercostal muscles</p> <p>2. identify the various parts of the serous membrane of the thorax, and their disposition and variability</p> <p>3. identify the parts of the mesothelium (parietal, visceral, mediastinal pleura) and viscera of the thorax – their disposition and</p>	<p>1, 2, 3</p>

	<p>topography, and variability between species, especially the weak mediastinal pleura in equine species</p> <p>4. identify the salient features of the nerves (spinal, autonomic) and blood supply to the thoracic wall and viscera</p> <p>5. identify and locate the main veins (including the cranial and caudal vena cava, phrenic) and lymphatics draining the walls and viscera</p> <p>6. explain the positions and sites of heart valve auscultation</p> <p>7. explain the relationship between the deep fascia of the neck and the endothoracic fascia and fascia transversalis</p> <p>8. explain the purpose of, and sites for, thoracocentesis, pericardiocentesis, intracardiac injections.</p> <p>9. explain the potential consequences of enlargement of tracheobronchial lymph nodes.</p>	
<p>18-20. Equine abdomen – walls, viscera, angiology, neurology</p>	<p>1. identify, and explain the function of various parts of the cutaneous muscle of the abdomen</p> <p>2. identify, know the attachments, functions, and innervation of the abdominal muscles; know what the ‘heave line’ represents</p> <p>3. explain the “rectus sheath” and its importance in the horse</p> <p>4. identify parts of the digestive tract, and explain their differences between the dog, ruminants and pig (e.g. the stomach, the cecum, large colon and sites of possible impaction of ingesta).</p> <p>5. recognize and identify all other viscera, their species peculiarities (e.g. the liver, kidney, pancreas), relationships with other viscera, their functions, blood and nerve supplies.</p> <p>6. explain the term “verminous arteritis”, and identify the main blood vessels involved</p> <p>7. identify the main lymph nodes of the abdomen.</p>	<p>1, 2, 5</p>

<p>21-22. Equine pelvis and pelvimetry</p>	<ol style="list-style-type: none"> 1. explain methods of pelvimetry 2. identify and explain major positive and negative structural features of the birth canal in the mare 3. explain the concept and significance of the perineum, its major segments, and the components of each segment 4. explain the innervation of the perineum. 	<p>1, 6</p>
<p>21-22 (contd.) . Equine male reproductive organs – structure, angiology and neurology, etc.</p>	<ol style="list-style-type: none"> 1. locate, recognize and identify the scrotum, parts of the testis and epididymis, ductus deferens and its course, 2. locate and identify the accessory sex glands and their components 3. classify and explain the structure of the penis of the stallion, and 4. identify the various parts of the penis and the complex prepuce (including the internal lamina, the structurally glans penis, the urethral sinus and its significance in the stallion), and their complex blood supply 	<p>5</p>
<p>21-22 (contd.). Equine female reproductive organs and mamma</p>	<ol style="list-style-type: none"> 1. locate and recognize the broad ligament of the mare 2. locate, recognize and identify the reproductive organs and parts thereof 3. identify and know variations in the structure of the gonads and tubular genitalia between the mare and other ungulates and the dog, regarding the ovary, uterine tubes, uterine horns and body, the cervix, vagina and the vulva 4..identify and explain the blood supply and drainage of the organs, and compare with the dog and ruminants 	<p>5</p>
<p>23-30. Equine limbs --- fore-and hind-limb; arthrology; essential myology; angiology, neurology; foot</p>	<p><u>Forelimb</u></p> <ol style="list-style-type: none"> 1. identify the main conformational and gross features of the bones of the <u>forelimb</u>, e.g. acromion process of the scapula, greater and lesser tubercles of the humerus, the radius and ulna, the carpal and metacarpal bones, etc. 	<p>4, 6</p>

	<p>2. locate and identify the functional groups of muscles of the forelimb</p> <p>3. identify the nerve and blood supply to the muscles, and consequences of nerve deficits to any of the main muscles in the functional groups</p> <p>4. locate and identify the lymph nodes and their drainage areas</p> <p>5. identify and explain synovial sheaths and identify the tendons that have them</p> <p>6. identify and understand the structural features of the various joints</p> <p>7. define the term ‘stay apparatus’, and identify bones, muscles and ligaments or tendons involved in the functioning of this system.</p> <p style="text-align: center;"><u>Applied anatomy of the forelimb</u></p> <p>8. explain radial and median/ulnar nerve paralysis</p> <p>9. identify nerves and sites where diagnostic nerve blocks are performed, e.g. medial/lateral palmar and medial/lateral digital nerve blocks</p> <p><u>Hindlimb</u></p> <p>10. explain the concept ‘pelvis’, and identify and describe the pelvic bones, including their major structural features, including sacroiliac and broad sacrotuberal ligaments, the accessory ligament of the femur</p> <p>11. identify the main conformational and gross features of the bones of the <u>hindlimb</u>, e.g. the femur, tibio-fibular segment, and tarsal and metatarsal segments, and digits</p> <p>12. identify the hip and gluteal regions, and the main muscles in these areas, including the extrinsic muscles of the hindlimb</p> <p>13. identify and explain main structural features of the joints/arthrology of the hindlimb – the hip, stifle, tarsal, fetlock, and</p>	
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	<p>interphalangeal joints.</p> <p>14. Explain the main structural features and functioning of the joints, e.g. patellar lock mechanism,</p> <p>15. explain and describe the concept of ‘stay apparatus’ of the hindlimb,</p> <p>16. give an account of the components, basic function, as well as deficits, of the stay apparatus and reciprocal apparatus of the hindlimb</p> <p>17. identify the main blood vessels supplying the hindlimb, their metatarsal and digital extensions and areas of supply</p> <p>18. identify and explain the innervation of the functional muscle groups that activate these joints</p> <p>19. explain the origins and courses of the nerves of the hindlimb, with particular emphasis on the digits</p> <p style="text-align: center;"><u>Applied anatomy of the hindlimb</u></p> <p>20. explain the consequences (muscle paralysis, limb posture) of paralysis of the obturator, femoral, and ischiadic nerves</p> <p>21. explain diagnostic nerve blocks, and indicate the sites of the local blocks of the superficial and deep peroneal, and medial and lateral plantar nerve blocks.</p>	
<p>31, 32, 34. <u>Equine head</u> – all aspects</p>	<p>1. identify the main bones and salient comparative features of the ungulate skull, and of the equine species, in particular.</p> <p>2. identify and explain the various compartments of the head (nasal, oral, pharyngeal, laryngeal, paranasal cavities)</p> <p>3. identify the various viscera and the topographical relationships of the main structures of the head in a dissected specimen</p> <p>4. identify and recognize the main paranasal sinuses, and their applied significance</p> <p>5. explain what the guttural pouch is, its</p>	<p>7</p>

	<p>location, and relationships</p> <p>5. identify the muscles of mastication and their comparative myology</p> <p>6. identify and explain the main joints and their ligaments in the head</p> <p>7. identify the main features of the larynx and eye, and their extrinsic and intrinsic muscles, as well as their innervation</p> <p>8. identify the main arteries and veins (superficial and deep) of the head</p> <p>9. identify the main superficial branches of the cranial nerves V, VII, caudal auricular, recurrent laryngeal and cranial laryngeal nerves</p> <p>10. be able to plot the courses of the buccal and cornual nerves on the skull</p> <p style="text-align: center;"><u>Applied anatomy of the head</u></p> <p>1. identify main features of the skull and hyoid apparatus (the facial crest, zygomatic arch, external occipital protuberance, angle of the mandible, chin, temporal fossa, infraorbital foramen, mental foramen, nasoincisive notch</p> <p>2. identify clinical borders for trephine of the main paranasal sinuses in equine species</p> <p>3. age live horses, using dentition</p> <p>4 determine the borders of the Viborg' triangle</p> <p>5. delineate the surgical borders of the frontal and maxillary sinuses in the horse</p> <p>6. determine the positions of the mandibular, supraorbital, infraorbital, and mental foramina in the live horse</p>	
<p>35-38. Avian anatomy --- essential anatomy</p>	<p>1. understand the general adaptive features of avian morphology and function</p> <p>2. identify main features of the bones of the skull of the bird, e.g. pneumatization of bones</p> <p>3. describe and explain the ability of birds to perch and sleep</p>	<p>8</p>

	<p>4. describe, explain, and identify main comparative and adaptive features of the structures forming the digestive system</p> <p>5. describe, explain, and identify the main comparative and adaptive features of the structures forming the respiratory system</p> <p>6. describe, explain, and identify explain main comparative and adaptive features of the structures forming the reproductive system</p> <p>7. describe, explain, and identify main comparative and adaptive features of the structures forming the urinary system</p> <p>8. identify the heart and its structure, the common carotid, vertebral, internal carotid, subclavian, external iliac, ischiadic, arteries and the cranial vena cava, external jugular and brachial veins</p> <p>9. locate and identify the thymus gland, spleen, and bursa of Fabricius (cloacal bursa)</p> <p>10. give an overview of the nervous system – special features such as the basal ganglia, large orbit, trigeminal nerve, etc.</p> <p>11. the nerves used for diagnostic purposes, e.g. the brachial plexus, the sciatic nerve</p> <p>12. describe the anatomy of the eye</p> <p>13. identify, locate, and explain the function of, the uropygial gland</p> <p>14. describe the structure of the egg.</p>	
<u>LABORATORY</u>	<u>LABORATORY</u>	<u>LABORATORY</u>
<p>1, 2, 3. Ruminant neck and thorax</p>	<p>1. recognize and identify organs and their parts, blood vessels, and nerves of the neck</p> <p>2. explain the jugular groove and its significance, and relationship with the carotid sheath in ruminants</p> <p>3. recognize the components of the thoracic wall and their topography, e.g. the intercostal blood vessels and nerve</p> <p>4. identify all organs in the thorax and their</p>	<p>1, 3</p>

	<p>spatial relationships</p> <p>5. explain the concept of pleura, its various dispositions and variations within the thorax, and any clinical implications based on species differences</p> <p>6. identify the major blood vessels and nerves as well as their significance</p>	
4, 5. Ruminant abdomen	<p>1. identify the cutaneous muscles and disposition</p> <p>2. identify all muscles of the abdominal wall, and their peculiarities</p> <p>3. identify the branches of the lumbar nerves and areas of innervation, and where they can be blocked/anesthetized locally</p> <p>4. understand the topography of the abdomen, on both sides</p> <p>5. recognize organs and identify their relevant parts, and explain species differences and significance, where they exist</p> <p>6. identify organs and structures that can be palpated per rectum, based on topography and/or structural feel</p> <p>7. identify the major blood vessels, appropriate lymph nodes, and parts of the autonomic nervous system supplying abdominal organs and structures</p>	1, 5
6. Ruminant pelvis – all features; reproductive organs	<p>1. recognize pelvic bones and organization of the pelvis</p> <p>2. demonstrate and/or explain the ‘diameters’ in pelvimetry, and how they are used in gynecology</p> <p>3. identify structures of the pelvic walls, e.g. sacrotuberal ligament, pelvic and urogenital diaphragms,</p> <p>3. identify the various peritoneal pouches, and explain their significance</p> <p>4. recognize the female and male reproductive organs, and their parts as well as species differences and peculiarities, e.g. disposition of</p>	5, 6

	<p>the cervical mucosa, and implication on catheterization/cannulation</p> <p>5. explain the blood and nerve supplies to the reproductive organs and their functional peculiarities</p> <p>6. identify all parts of the mamma, and explain/recognize species differences</p>	
<p>7, 8, 9, 10. Ruminant thoracic and hind limbs ---all aspects</p>	<p>1. identify the bones and their major features in both the thoracic and hind-limbs</p> <p>2. identify main muscles and understand the concept of functional groups of muscles and their innervation, including nerve deficits</p> <p>3. identify structures in the joints, and explain the comparative veterinary arthrology of both limbs</p> <p>4. identify and explain the main components of the nerves of both limbs, and their use in diagnoses</p> <p>5. understand, identify and explain the main vascular system of both limbs</p> <p>6. understand and identify the components and function of the ungulate hoof.</p>	<p>1, 4, 6</p>
<p>11, 12. Ruminant head and neuroanatomy</p>	<p>1. identify relevant bones and foramina of the skull</p> <p>2. identify main muscles, e.g. those of mastication, and explain their functions</p> <p>3. identify structures in the oral cavity, and explain observed differences in oral mucosa of the species</p> <p>4. identify relevant parts of the various organs of the head, e.g. the eyes, ear, larynx, pharynx, hyoid apparatus, dentition, tongue, salivary glands,</p> <p>5. identify the main blood vessels, e.g., facial (transverse facial in the small ruminants), linguofacial, maxillary, internal carotid, etc., and their main areas of supply and drainage</p> <p>6. identify and describe drainage of the main</p>	<p>7</p>

	<p>lymph nodes of the head</p> <p>7. identify parts of the brain, including some tracts and nuclei in a dissected specimen</p> <p>8. identify the cranial nerves</p> <p>9. identify and explain the use of certain nerves, such as the cornual nerve, in dehorning of ruminants</p>	
13, 14, 15. EQUINE neck and thorax	<p>1. identify main muscles of the neck, including extrinsic muscles of the forelimb</p> <p>2. identify the Viborg's triangle, its boundaries, and its topography</p> <p>3. identify the great auricular nerve, and its significance</p> <p>4. identify the borders of the jugular furrow, its content and relationships, and explain the use of this vein in venous injections and blood collection in the horse</p> <p>5. explain the visceral space of the neck, its boundaries, and content, and the relationship between the external jugular vein and the carotid sheath</p> <p>6. identify and explain muscles innervated by the accessory nerve and its divisions, and why this nerve may be vulnerable during intramuscular injection in the neck</p> <p>7. identify the location of the caudal deep cervical lymph node and the covering cutaneus colli m.</p>	1, 3
16, 17, 18. Equine abdomen --- all aspects	<p>1. identify the cutaneous muscles and disposition</p> <p>2. identify all muscles as well as the yellow abdominal tunic of the abdominal wall, and their peculiarities</p> <p>3. understand the topography of the abdomen, on both sides</p> <p>5. identify all the viscera,</p> <p>6. identify all parts of the digestive system, and understand the differences between the horse</p>	1, 5

	<p>and other species</p> <p>7. identify organs and structures that can be palpated per rectum, based on topography and/or structural feel</p> <p>8. identify the major blood vessels, appropriate lymph nodes, and parts of the autonomic nervous system supplying abdominal organs and structures.</p>	
19, 20. Equine pelvis ---all aspects	<p><u>Male</u></p> <p>1. locate, recognize and identify the scrotum, parts of the testis and epididymis, ductus deferens and its course,</p> <p>2. locate and identify the accessory sex glands and their components</p> <p>3. classify and explain the structure of the penis of the stallion, and</p> <p>4. identify the various parts of the penis and the complex prepuce (including the internal lamina, the structurally glans penis, the urethral sinus and its significance in the stallion), and their complex blood supply</p> <p><u>Female</u></p> <p>5. locate and recognize the broad ligament of the mare</p> <p>6. locate, recognize and identify the reproductive organs and parts thereof</p> <p>7. identify and know variations in the structure of the gonads and tubular genitalia between the mare and other ungulates and the dog, regarding the ovary, uterine tubes, uterine horns and body, the cervix, vagina and the vulva</p> <p>8. identify and explain the blood supply and drainage of the organs, and compare with the dog and ruminants.</p>	5, 6
21, 22, 23, 24, 25. Equine limbs – all aspects	<p><u>Forelimb</u></p> <p>1. identify the main bones and their specific features in the <u>forelimb</u>, e.g. acromion process of the scapula, greater and lesser tubercles of</p>	1, 4, 6

	<p>the humerus, the radius and ulna, the carpal and metacarpal bones, etc.</p> <p>2. locate and identify the functional groups of muscles of the forelimb, and muscle peculiarity in the horse</p> <p>3. identify the nerve and blood supply to the muscles,</p> <p>4. locate and identify the lymph nodes and their drainage areas</p> <p>5. identify and explain synovial sheaths and identify the tendons that have them</p> <p>6. identify and understand the structural features of the various joints</p> <p>7. identify structures of, and relate structure to function in, the foot</p> <p>8. define the term ‘stay apparatus’, and identify bones, muscles and ligaments or tendons involved in the functioning of this system.</p> <p><u>Hindlimb</u></p> <p>9. identify and describe the pelvic bones, including their major structural features, including sacroiliac and broad sacrotuberal ligaments, the accessory ligament of the femur</p> <p>10. identify the main conformational and gross features of the bones of the <u>hindlimb</u>, e.g. the femur, tibio-fibular segment, and tarsal and metatarsal segments, and digits</p> <p>11. identify the hip and gluteal regions, and the main muscles in these areas, including the extrinsic muscles of the hindlimb</p> <p>12. identify and explain main structural features of the joints/arthrology of the hindlimb – the hip, stifle, tarsal, fetlock, and interphalangeal joints.</p> <p>13. Explain the main structural features and functioning of the joints, e.g. patellar lock mechanism,</p>	
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	<p>14. identify the components of the ‘stay apparatus’ of the hindlimb,</p> <p>15. identify the components of the ‘reciprocal apparatus’</p> <p>16. identify the tendon sheaths of the hindlimb</p> <p>17. identify the main blood vessels supplying the hindlimb, their metatarsal and digital extensions and areas of supply</p> <p>18. identify the main nerves of the hindlimb, and the muscles innervated</p> <p>19. identify the main veins and lymph nodes of the hindlimb</p>	
<p>26. Equine head --- essential aspects</p>	<p>1. identify the main bones and foramina of the skull</p> <p>2. identify the various compartments of the head (nasal, oral, pharyngeal, laryngeal, paranasal cavities)</p> <p>3. identify the various viscera of the head</p> <p>4. identify and recognize the main paranasal sinuses,</p> <p>5. identify the guttural pouch, its parts, and the borders of the Viborg’ triangle</p> <p>6. identify the muscles of mastication</p> <p>7. identify the main joints and their ligaments in the head</p> <p>8. identify the main features of the larynx and eye, and their extrinsic and intrinsic muscles,</p> <p>9. identify the main arteries and veins (superficial and deep) of the head</p> <p>10. identify the main superficial branches of the cranial nerves V, VII, caudal auricular, recurrent laryngeal and cranial laryngeal nerves</p> <p>11. identify the teeth, and use them to age horses</p> <p>12. identify parts of the brain and spinal cord, including some tracts and nuclei, in dissected</p>	<p>1, 7</p>

	specimens 13. identify the cranial nerves	
27. Fish anatomy – essential anatomy	<ol style="list-style-type: none"> 1. identify the various fins of the fish 2. identify the urogenital pore 3. identify the lateral line, and scales 4. locate the eye and operculum, and identify their parts 5. locate the mouth and its components 6. identify the heart and its parts 7. identify parts of the digestive system 8. identify parts of the reproductive and urogenital systems 9. identify the swim bladder 	9
28. Avian dissection --- essential aspects	<ol style="list-style-type: none"> 1. identify the main bones of the bird, e.g. domestic fowl 2. identify various types of feathers 3. identify the trachea, syrinx, lungs, and air sacs 4. identify the heart and its structure, the common carotid, vertebral, internal carotid, subclavian, external iliac, ischiadic, arteries and the cranial vena cava, external jugular and brachial veins 5. identify the thymus gland, spleen, and bursa of Fabricius (cloacal bursa), if still present, as well as the thyroid and adrenal glands 6. identify parts of the digestive system --- beak, oropharynx, esophagus, stomach, intestines 7. identify the male and female reproductive organs, and their parts 8. identify parts of an egg 9. identify the brachial plexus and ischiadic nerve 	8

	10. identify parts of the brain 11. describe the anatomy of the eye 12. locate and identify the uropygial gland	



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY PHARMACOLOGY I SYLLABUS (3 Credits)
ANPH 504 (Term 2)
Fall 2020

I. Course Faculty and Staff Information

Course Director:

Dr. Kamashi Kumar, BVSc & AH, MVSc, PhD,
Associate Professor
E mail ID.: kakumar@sgu.edu
Tel. No. 1 473 444 4175 Ext. 3448
Office location: Veterinary Office building
Office hours: Zoom session (every Thursday 11.00 a.m. to 12.00 p.m.)

Faculty of Pharmacology:

Dr. Arno H Werners, DVM, M.Ed, PhD, DECVPT
Professor, Pharmacology
E mail ID.: awerners@sgu.edu

Dr. Kamashi Kumar, BVSc & AH, MVSc, PhD,
Associate Professor, Pharmacology

Staff:

Mrs. Cherry-Ann Lumpriss,
Executive Secretary,
Email ID.: clumpriss@sgu.edu

II. Course location

Course is delivered online. SAKAI site tools such as resources, panopto, lessons, quiz and forum will be used for course work.

III. Prerequisite and/or co-requisite courses

Students need to be enrolled in term 2, DVM and must have completed ANPH 512 (Vet. Physiology I). During the term, students can incorporate the knowledge acquired from Physiology II course for understanding the concepts of Pharmacology.

IV. Required resources

Lecture notes and power points will be posted under resources of SAKAI site of the course. Further related research articles and reference scientific information will be added for certain lecture topics.

All recorded lectures will be available via Panopto link in the SAKAI course site.

Academic activities for the respective week will be listed under weekly checklist tool of SAKAI. For online session, laptop with functional microphone and camera are required.

V. Recommended resources

1. Veterinary Pharmacology and Therapeutics (10th Edition, 2017), by Jim E. Riviere and Mark G. Papich (Editor), Publisher: Iowa State University Press, Ames, Iowa. ISBN: 0-8138-2061-8.
2. Rang and Dale's Pharmacology, (8th edition. 2016), by H. P. Rang, M. M. Dale, J. M. Ritter, R. J. Flower, G. Henderson (Editor), Publisher: Elsevier, Churchill Livingstone.
3. Lumb & Jones Veterinary Anesthesia, (5th Edition, 2015) by William J. Tranquilli, John C. Thurman & G. Kurt A. Grimm (Editors), Wiley, ISBN: 0-7817-54712.
4. Small Animal Clinical Pharmacology, (2nd edition, 2008), by Jill E. Maddison, Stephen Page & David Church (Editors), Saunders Ltd., ISBN: 978-0-7020-2858-8.
5. Handbook of Veterinary Pharmacology, 2008, by Walter Hsu (Editor), Wiley-Blackwell, ISBN: 978-0-8138-2837-4.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Computer system with internet facility is required for online course work.

VIII. Course rationale

Pharmacology is a science of study of drugs in biological system. This course describes the basic principles of pharmacology and the importance of pharmacokinetic and pharmacodynamic features of drugs and lays the foundation for the clinical application of veterinary medicinal products. The significance of correlating pharmacology with physiology provides a firm understanding of the subject concepts. This course aims to develop student's knowledge about the rational use of therapeutic drugs considering species variations and the drug's pharmacokinetic and pharmacodynamic features. Special emphasis will be given to the clinical use of drugs in various species of animals, analyzing species specific sensitivities and adverse/side-effects. This course will be a foundation for further application into anaesthesiology, clinical medicine and surgical medicine of large and small animals.

XI. Course goals

In this course, students will be exposed to the basic principles of pharmacokinetics and pharmacodynamics that underpin drug use. Classes of drugs covered include autonomic drugs, anesthetic agents, analgesic drugs, anticonvulsant drugs and anti-inflammatory drugs. Further, the therapeutic significance of hemostatic/anticoagulant drugs, anabolic steroids and the important segments of a prescription are detailed. With the clinical use of these drugs in mind, their characteristics and prophylactic/therapeutic efficacy are explained, emphasizing the importance of ensuring the food safety and environmental bio-security.

X. Course-level outcomes

Upon successful completion of this course, the student will be able to...

1. Analyze and explain in a general sense how and where drugs work (pharmacodynamics).
2. Articulate and apply knowledge of pharmacokinetics and judge how altered physiologic and pathologic state affects drug concentrations within the body.
3. Design the most appropriate pharmacological protocol (therapies) for common and important diseases, including preventative measures and anesthesia.
4. Outline the desired response to pharmacological therapies and reflect on methods to monitor for undesired pharmacological responses (including lack of efficacy).
5. Predict and recognize major drug-drug interactions and compare common/predictable or catastrophic species-specific adverse drug reactions.
6. Obtain, maintain inventory, prescribe, administer, and dispose veterinary medicinal products based on sound regulatory and ethical guidelines.
7. Integrate all principles of evidence-based medicine to informed decision making and self-improvement in all aspects of veterinary pharmacology (principles of Good Veterinary Practice).

Detailed course content

Topics that will be covered in basic pharmacology include the nature and classification of drugs, pharmacodynamic terms, dosage forms and routes of administration, the fate of drugs in the body, and pharmacokinetic concepts.

In autonomic and CNS pharmacology, the mechanisms of action of various classes of drugs and the pharmacological effects produced on different systems of the body will be presented with reference to the clinical indications for their use in domestic animal species. Special attention will be given to unusual sensitivity of particular animal species to the effects produced by certain drugs and to species variations in pharmacokinetic behavior that contribute to requisite differences in dosage regimens. Clinically important interactions between concomitantly used drugs will be described in the context of the circumstances in which they may occur.

Autacoid pharmacology deals about antihistaminergic drugs and clinically significant serotonin agonists and antagonists. Non-steroidal anti-inflammatory drugs and corticosteroid section covers in detail about the mechanism of action, classification of drugs, clinical use, side-effects and contraindications. Drugs acting on blood include hemostatic drugs, anticoagulants, fibrinolytic and anti-platelet drugs. Prescription writing and regulations associated with the ordering, storage and dispensing of drugs for use in animals will be discussed.

XI. Lesson Level Outcomes

Detailed information of the lecture topics and Student Learning Outcomes are enclosed as a table at the end of the syllabus.

XII. Alignment of Course Level Outcomes with Program Level Outcomes

- The information is enclosed as a table at the end of the syllabus.

XIII. Course Schedule

The lecture schedule is presented as a table at the end of the syllabus.

XIV. Grading and assessment policy, and grading rubrics

Assessment method:

Assessments covering the respective lecture topics would be given at scheduled times. The assessment will be posted under SAKAI Tests and Quizzes section. The details were as follows:

Assessment no.	Scheduled week	Lecture topics	Weightage (%)
1	3	Pharmacokinetics - lectures 1-6	10
2	5	Pharmacodynamics – lectures 7-10	8
3	7	ANS lectures 11- 18	13
4	9	covers lectures 19, 20, 21, 22	8
5	11	covers lectures 23, 24, 25, 26, 27	9
6	12	covers lectures 28, 29, 30, 31, 32	8
7	14	covers lectures 33, 34, 35, 36, 37	9
FINAL	16 (Nov. 30)	Covers lectures 38-43 (10%) + cumulative 20%	30
		Total	95%

Forum participation – 5 % (students were graded based on the participation in answering the forum questions.

Total – Assessments (95%) + forum participation role (5%) – 100%.

SAKAI online quiz details would be posted for each exam. The exam should be submitted by the given deadline; otherwise it would be counted as zero. The exam material will cover the information from lectures and class discussions. The total points scored will be cumulative and a single letter grade will be awarded for the course. **If any discussion/ clarification are required for the completed assessment, it should be done within the first seven (7) days after completion of the examination.**

Grading scale:

Grades	Scores
A	> 89.5
B+	84.5 - 89.49
B	79.5 - 84.49
C+	74.5 – 79.49
C	69.5 – 74.49
D+	64.5 – 69.49
D	59.5 – 64.49
F	Below 59.49%

XV. Recommended study strategies

- It is highly recommended to study the lecture material on daily basis and clearly understand the concepts of subject.
- If you need any academic assistance, you can approach the teaching faculties. Additional Zoom office hours can be fixed by appointment through Email.

XVI. Instructor's expectations of the student

Students are expected to read through the specific lecture topic regularly and required to actively participate in SAKAI forum discussions and zoom sessions.

XVII. Professionalism statement

Students of St. George's University are expected to maintain the University Code of Conduct.

- Students are expected to exhibit professional behavior in class.
- It is mandated that all students abide by the terms of the University Code of Conduct.

XVIII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XIX. Policy regarding missing examinations and/or failure of submission of assignments

- Students who fail to appear for an examination without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.
- Students who have technical issues during the examination MUST inform the Course Director (kakumar@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.
- Scheduling of examinations (regular, re-sit, completion) is at the discretion of the School.

XX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:

2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examssoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examssoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XXI. Copyright policy

"The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited."

Pharmacology I lecture schedule - Fall 2020

Week	Lecture topic	Lecturer	Assessment
1 (Aug. 17- 21)	1. Introduction to Pharmacology	Dr. Werners	
	2. Pharmacokinetics - Routes of administration	Dr. Werners	
	3. Pharmacokinetics - Absorption	Dr. Werners	
2 (Aug. 24 – 28)	4. Pharmacokinetics – Distribution	Dr. Werners	
	5. Pharmacokinetics – Metabolism	Dr. Werners	
	6. Pharmacokinetics - Excretion/elimination	Dr. Werners	
3 (Aug. 31- Sep. 4)	7. Quantitative kinetics	Dr. Werners	Assessment 1 (10 %) – Pharmacokinetics – lectures 1-6
	8. Pharmacodynamics	Dr. Werners	
	9. Pharmacodynamics	Dr. Werners	
	10. Pharmacodynamics	Dr. Werners	
4 (Sep. 7- 11)	11. Autonomic nervous system	Dr. Kumar	
	12. Adrenergic nervous system	Dr. Kumar	
	13. Adrenergic nervous system	Dr. Kumar	
5 (Sep. 14 – 18)	14. Adrenergic nervous system	Dr. Kumar	Assessment 2 (8%) - - Pharmacodynamics – lectures 7-10
	15. Adrenergic nervous system	Dr. Kumar	
	16. Cholinergic nervous system	Dr. Kumar	

6 (Sep. 21- 25)	17. Cholinergic nervous system 18. Cholinergic nervous system 19. Pharmacophysiology of CNS - intro anaesthesia and analgesia	Dr. Kumar Dr. Kumar Dr. Kumar	
7 (Sep. 28 – Oct. 2)	20. Muscle relaxants 21. Sedatives and tranquilizers 22. Sedatives and tranquillizers	Dr. Kumar Dr. Kumar Dr. Kumar	Assessment 3 (13%) – ANS lectures 11- 18
8 (Oct. 5 – 9)	Mid-term week		
9 (Oct. 12- 16)	23. Control of pain 24. Control of pain 25. Injectable anaesthetics	Dr. Kumar Dr. Kumar Dr. Kumar	Assessment 4 (8%) covers lectures 19, 20, 21, 22
10 (Oct. 19 – 23)	26. Injectable anaesthetics 27. Inhalant anaesthetics 28. Local anaesthetics 29. Local anaesthetics	Dr. Kumar Dr. Kumar Dr. Kumar Dr. Kumar	
11 (Oct. 26 – 30)	30. Anaesthetics Overview 31. Anticonvulsants 32. Anticonvulsants	Dr. Kumar Dr. Kumar Dr. Kumar	Assessment 5 (9%) - covers lectures 23, 24, 25, 26, 27

12 (Nov. 2 – 6)	33. Histamine & serotonin antagonists 34. Histamine & serotonin antagonists 35. Hemostatics & anticoagulants	Dr. Kumar Dr. Kumar Dr. Kumar	Assessment 6 (8%) covers lectures 28, 29, 30, 31, 32
13 (Nov. 9 -13)	36. Hemostatics & anticoagulants 37. Anabolic steroids 38. NSAIDs	Dr. Kumar Dr. Kumar Dr. Kumar	
14 (Nov. 16 – 20)	39. NSAIDs 40. Corticosteroids 41. Corticosteroids	Dr. Kumar Dr. Kumar Dr. Kumar	Assessment 7 (9%) covers lectures 33, 34, 35, 36, 37
15 (Nov. 23 – 27)	42. Drugs modifying animal behaviour 43. Prescription writing 44. Review	Dr. Kumar Dr. Kumar Dr. Kumar	
16 (Nov. 30- Dec. 4)	FINAL EXAM (Nov. 30 from 11.00 a.m. to 12.30 p.m.)		Covers lectures 38-43 (10%) + cumulative 20% Total – 30%

Student Learning Outcomes:

Lecture topic	Lecture Level Outcomes (Student Learning Outcomes)	Course Level Outcomes	Program level outcomes
Introduction to Pharmacology	<ol style="list-style-type: none"> 1. Define Pharmacology and its associated disciplines 2. Correlate the significance of pharmacology to the Veterinary medicine 3. Compare and contrast pharmacology and toxicology 4. Explain the main goals of pharmacotherapy 5. Compare and contrast the different therapy forms 	1, 2	A1, A5
Pharmacokinetics - Routes of administration	<ol style="list-style-type: none"> 1. Compare and contrast the pros and cons of different routes of administration 2. Compare and contrast local and systemic routes of administration 3. Compare the different routes of drug administration to the clinical significance. 4. Associate the patient and drug factors to the bioavailability of drugs. 5. Design dosing regimens and clarify the relevance of allometric scaling 	2, 5	A1, A5, C9
Pharmacokinetics - Absorption	<ol style="list-style-type: none"> 1. Explain active and passive transport processes across membranes 2. Integrate the pathophysiological factors role in modulating drug absorption 3. Compare and contrast absolute and relative bioavailability 4. Determine the clinical relevance of absorption 	2, 5	A1, A5, C9
Pharmacokinetics - Distribution	<ol style="list-style-type: none"> 1. Explain the importance of plasma protein binding for the distribution of drugs 2. Describe distribution and re-distribution of drugs 3. Integrate the role of pathophysiological changes over the distribution of drugs 	2, 5	A1, A5, C9

Pharmacokinetics - Metabolism	<ol style="list-style-type: none"> 1. Explain the various processes of drug biotransformation 2. Compare and contrast the first-pass effect and enterohepatic circulation and reflect on their clinical relevance 3. Compute the effects of disease on the metabolism of drugs 4. Associate the clinical significance of metabolism including the effects of genetic polymorphisms 	2, 5	A1, A5, C9
Pharmacokinetics - Excretion	<ol style="list-style-type: none"> 1. Classify the different routes of elimination of drugs 2. Integrate the role of transporters on the elimination of drugs 3. Determine the clinical relevance of elimination (species differences and genetic polymorphisms) 4. Correlate the pathophysiological factors and disease condition to the elimination of drugs. 	2, 5	A1, A5, C9
Quantitative pharmacokinetics	<ol style="list-style-type: none"> 1. Explain the different components of the plasma- concentration-time curve 2. Compare and contrast the different pharmacokinetic models and their clinical relevance 3. Interpret the significance of the different pharmacokinetic models. 4. Analyze the importance of therapeutic index of drug 	1, 2, 5	A1, A5, C2, C9

Pharmacodynamics	<ol style="list-style-type: none"> 1. Explain the concepts of pharmacodynamics associated with various drugs. 2. Compare and contrast different types of drug receptors to their significance. 3. Associate the role of secondary messengers to the cellular effect. 4. Determine the efficacy and potency of drugs in relation to therapeutic index of drugs. 5. Differentiate the concepts of selectivity and specificity 6. Integrate drug-target interactions and their clinical significance (agonist, competitive and non-competitive antagonist, inverse agonist) 7. Interpret changes in receptor populations (receptor down-regulation) 	1, 2, 4, 5	A1, A5, C2, C9
Introduction to Autonomic nervous system	<ol style="list-style-type: none"> 1. Explain the physiological roles of the sympathetic and parasympathetic nervous system 2. Correlate the physiology of ANS to the pharmacological intervention. 	1, 2	A1, A2, A4, A5, A6, C2, C5, C9
Adrenergic drugs	<ol style="list-style-type: none"> 1. Differentiate and explain the pharmacological features of adrenergic drugs. 2. Associate the pharmacokinetic and pharmacodynamic features of adrenergic drugs to the appropriate selection of drugs for therapeutic concern. 3. Explain the side-effects and contraindications of the adrenergic drugs. 4. Compute the adrenergic drug interactions applicable for a clinical condition. 5. Determine the suitable drug for treating a clinical disease in various species. 	1,2, 3, 4, 5, 6, 7	A1, A2, A4, A5, A6, C2, C5, C9

Cholinergic drugs	<ol style="list-style-type: none"> 1. Differentiate and explain the pharmacological features of cholinergic drugs. 2. Associate the pharmacokinetic and pharmacodynamic features of cholinergic drugs to the appropriate selection of drugs for therapeutic concern. 3. Explain the side-effects and contraindications of the cholinergic drugs. 4. Compute the cholinergic drug interactions applicable for a clinical condition. 5. Determine the suitable drug for treating a clinical disease in different species. 	1, 2, 3, 4, 5, 6, 7	A1, A2, A4, A5, A6, C2, C5, C9
Pharmacophysiology of CNS	<ol style="list-style-type: none"> 1. Explain the physiological role of the central nervous system and correlate to the pharmacological intervention. 2. Illustrate the importance of CNS neurotransmitters to regulate the bodily function 3. Define the therapeutic goals for anaesthesia and analgesia 4. Categorize the different targets for anaesthetic drugs 5. Design appropriate treatment protocols for anaesthesia 	1, 2, 3	A5, A6, A11, C2, C3, C4, C6
Sedatives and tranquilizers	<ol style="list-style-type: none"> 1. Compare the pharmacokinetics and pharmacodynamics of various sedatives and tranquilizer drugs 2. Determine the appropriate sedative/tranquiller drug for treating the clinical condition in various species. 3. Explain the side-effects and contraindications of sedatives and tranquilizers. 4. Design protocols for the sedation of animals taking drug-drug interactions and adverse effects into account 5. Calculate protocol modification based on drug characteristics and the patient's pathophysiology 	1, 2, 3, 4, 5, 6, 7	A5, A6, C2, C3, C4, C5, C6
Muscle Relaxants	<ol style="list-style-type: none"> 1. Explain the importance of muscle relaxants use in Veterinary medicine. 2. Compare the pharmacokinetics and pharmacodynamics of various muscle relaxants (centrally acting, depolarizing and non-depolarizing muscle relaxants) 3. Determine the appropriate muscle relaxant 	1, 2, 3, 4, 5, 6, 7	A5, A6, C2, C3, C4, C5, C6

	<p>drug suitable for the various species.</p> <ol style="list-style-type: none"> 4. Explain the side-effects and contraindications of muscle relaxant drugs. 5. Discuss the drug-drug interactions with muscle relaxants 		
Control of pain	<ol style="list-style-type: none"> 1. Discuss about the physiology of pain induction 2. Explain the significance of analgesic drugs in Veterinary medicine. 3. Compare the pharmacokinetics and pharmacodynamics of various analgesic drugs. 4. Determine the analgesic drug in relation to species and the respective clinical condition. 5. Explain the side-effects and contraindications of various analgesic drugs 6. Design pain medication protocol 	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, C1, C2, C3, C4, C5, C6
Injectable anaesthetics	<ol style="list-style-type: none"> 1. Discuss the basic principles of general anaesthesia 2. Integrate the pharmacokinetic prerequisites for induction of general anaesthesia 3. Explain the significance of various classes of injectable anaesthetics. 4. Compare the pharmacokinetics and pharmacodynamics of various injectable anaesthetic drugs. 5. Explain the side-effects and species differences of various injectable anaesthetic drugs 6. Design anaesthetic protocols considering drug interactions and species sensitivity 	1,2,3,4,5,6,7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6

Inhalant anaesthetics	<ol style="list-style-type: none"> 1. Discuss the basic principles of general anaesthesia 2. Integrate the pharmacokinetic features of inhalation anaesthetic drugs for induction of general anaesthesia 3. Tabulate the effects of inhalation anaesthetic drugs on CNS and various visceral organs. 4. Categorize various drugs of inhalant anaesthetics and associate their pharmacological features to clinical significance. 5. Explain the side-effects associated with various inhalant anaesthetic drugs. 6. Design anaesthetic protocol considering drug interactions and species sensitivity. 	1,2,3,4,5,6,7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6
Local anaesthetics	<ol style="list-style-type: none"> 1. Explain the basic principles and importance of local anaesthesia 2. Categorize various drugs of local anaesthetics used in veterinary animals. 3. Integrate the pharmacological features of local anaesthetic drugs to the clinical significance. 4. Explain the side-effects associated with various local anaesthetic drugs. 5. Design anaesthetic protocols considering species sensitivity and clinical condition. 	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6
Anticonvulsants	<ol style="list-style-type: none"> 1. Explain the pathophysiology of seizures and apply this knowledge to determine therapeutic targets 2. Identify compounds that can be used to treat seizures and/or epilepsy 3. Integrate pharmacokinetic characteristics of drug categories and individual drugs to the efficacy of treatment 4. Create treatment plans for animals with seizures or epilepsy 5. Identify the most common adverse effects associated with the use of anti-seizure drugs 	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, C1, C2, C5, C6

Histamine, serotonin and their antagonists	<ol style="list-style-type: none"> 1. Discuss the significance of autacoids in physiology 2. Compare the pharmacological features of first and second generation antihistaminergic drugs 3. Tabulate the clinical indications of antihistaminergic drugs. 4. Integrate the significance of serotonergic agonist and antagonistic drugs in specific clinical indications. 5. Explain the side-effects and contraindications of antihistaminergic drugs and serotonergic drugs in various species 	1, 2, 3, 4, 5, 6, 7	A3, A4, A5, A6, A7, C1, C2, C4, C5, C6
Hemostatic agents and anticoagulants	<ol style="list-style-type: none"> 1. Explain the physiology of blood coagulation and fibrinolysis 2. Compare and contrast the pharmacological features and clinical use of hemostatic drugs, anticoagulants, fibrinolytic and antiplatelet drugs in various animals 	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7
Anabolic steroids	<ol style="list-style-type: none"> 1. Discuss the role of anabolic steroids in animal's physiology 2. Explain various anabolic steroids for veterinary animal clinical use and their significance. 	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7
NSAIDs & Corticosteroids	<ol style="list-style-type: none"> 1. Integrate the physiology of prostaglandins and corticosteroids to explain the significance of NSAIDs and corticosteroids in animal species. 2. Compare the pharmacokinetics and pharmacodynamics of different categories of NSAIDs and corticosteroids. 3. Determine the clinical indications of NSAIDs and corticosteroids. 4. Assess the importance of the side-effects and contraindications of NSAIDs and corticosteroids. 	1, 2, 3, 4, 5, 6, 7	A3, A4, A5, A6, C1, C2, C4, C5, C6
Drugs modifying animal behaviour	<ol style="list-style-type: none"> 1. Understand the mechanism of action of drugs used to modify animal behavior. 2. Define the adverse effects and drug-drug interactions that occur in the treatment of behavioural problems. 3. Design treatment protocols for animals with different behavioural problems. 	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7

Prescription writing	<ol style="list-style-type: none"> 1. Distinguish the different components of a prescription. 2. Create a prescription based on the details provided. 	1, 2, 3, 4, 5, 6, 7	A5, C2
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Program Level Outcomes:

A. Core Medical Knowledge

- A1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
- A2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
- A3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.
- A4 Explain the relationship between disease processes and clinical signs.
- A5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.
- A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.
- A7 Evaluate and analyze normal versus abnormal animal behavior.
- A11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.

B. Core Professional Attributes

- B3 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.
- B7 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.

C. Core Clinical Competencies (Skills)

- C1 Execute a comprehensive patient diagnostic plan (differential diagnosis list) and demonstrate problem solving skills to arrive at a diagnosis.
- C2 Create comprehensive treatment plans including prognosis.
- C3 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.
- C4 Analyze, design and execute appropriate plans for basic surgery and surgical case management.
- C5 Analyze, design and execute appropriate plans for medical case management.
- C6 Analyze, design and execute appropriate plans for emergency and critical care case management.
- C7 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.
- C9 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY
CLINICAL PHARMACOLOGY AND THERAPEUTICS SYLLABUS (3 credits)
ANPH505 TERM 3
FALL 2020

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I. Course Faculty and Staff Information

Course Director for the course is Professor Arno Werners (awerners@sgu.edu). Lecturers in the course are Professor Dr. Kamashi Kumar BVSc & AH, MVSc, PhD (kamashikumar@sgu.edu) and Professor Dr. Arno Werners DVM, M.Ed, PhD, DECVPT.

II. Course location

All lectures will be delivered/offered virtually. We will use the “Weekly Course Plan” tab on Sakai to make sure that you keep up with the course material. Links will be available on this page to the learning materials for that week and these include Panopto recordings, lecture slides, short video’s of more complicated aspects of clinical pharmacology and therapeutics, assignments, formative assessment and additional reading

III. Prerequisite and/or co-requisite courses

To be able to successfully participate in and complete this course, a good understanding of chemistry, as well as physiology and pathophysiology of diseases is required. Students therefor will have to have successfully completed the following courses: Pharmacology 1, Physiology 1 and Physiology 2 and Bacteriology/ Mycology. During the term students will learn to incorporate knowledge obtained in virology, parasitology, and pathology and should therefor keep up to date with the information provided in those courses.

IV. Required resources

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only and will not be available as a print-out. The slides will be accessible for digital note taking. For certain subjects lecturers may decide to include scientific articles or chapters from reference books in the study material. These will also be made available electronically on Sakai. All lectures will be available via Panopto: the link is published on the Sakai site and on the “Weekly Course Plan” tab on Sakai. There are no other required resources for this course, however, a variety of textbooks on (clinical) pharmacology, especially those that are in your field of interest (textbooks on clinical pharmacology; see below) and the “Antimicrobial therapy in Veterinary Medicine, 4th edition; Giguere, Prescott, Baggot, Walker and Dowling editors; Blackwell Publishing” can be very helpful when preparing for the course and in general practice.

V. Recommended resources

The following resources can be helpful when studying the course material.

- Pharmacology, 7th edition; Rang, Dale and Ritter editors; Churchill Livingstone
- Antimicrobial therapy in Veterinary Medicine, 4th edition; Giguere, Prescott, Baggot, Walker and Dowling editors; Blackwell Publishing
- Veterinary Pharmacology and Therapeutics, 9th edition; Riviere and Papich editors; Wiley-Blackwell
- Handbook of Veterinary Pharmacology, 1st edition; W.S. Hsu, Wiley-Blackwell
- Equine Clinical Pharmacology; J.J. Bertone and L.J.I. Horspool, Saunders
- Small Animal Clinical Pharmacology, 2nd edition; J.E. Maddison, S.W. Page and D.B. Church, Saunders
- Small Animal Clinical Pharmacology and Therapeutics, 2nd edition; D.M. Boothe, Elsevier

VI. Special accommodation

1. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
2. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

One of the main tasks of the veterinarian in every day practice is the application of veterinary medicinal products. To be able to responsibly administer drugs to animals, one needs thorough knowledge of the administration and mode of action of drugs. Furthermore, the risks associated with drug administration, both for the animal (adverse effects; toxicology) and for the environment (this includes the owner and the environment; environmental toxicity – “one-health” concept) needs to be carefully evaluated. Essential in the choices made by veterinarians in everyday practice is up-to-date knowledge of pharmacological concepts (including species differences), animal physiology, biochemistry and pathophysiology of diseases.

IX. Course learning outcomes

In this course, students will develop a proficient working knowledge of anti-infective drugs and drugs acting on organ systems. The principals of drug therapy and the factors that influence the use of each medication in different species will be discussed. There is special attention for the clinical importance of drugs, their pharmacokinetics, pharmacodynamics and adverse effects, as well as for therapeutic decision making.

Upon successful completion of this course, the student will be able to:

1. Analyse and explain in a general sense how and where drugs work at the molecular/cellular/physiologic level including concepts such as receptors, agonists, partial agonists and antagonists and non-receptor mediated drug actions.
2. Articulate and apply knowledge of drug absorption, bioavailability, distribution, metabolism and excretion, and judge how altered physiologic and pathologic states would be expected to affect drug concentrations within the body.
3. Design the most appropriate pharmacological protocol (therapies) for common and important diseases using knowledge of species, breed, age, sex, disease states, genetics and other factors, and integrate pharmacological therapy in a multimodal treatment plan (i.e., surgery, nutrition, management, etc).
4. Outline the desired response to pharmacological therapies as well as reflect on the most appropriate methods to monitor for undesired pharmacological responses (including lack of efficacy). In the event of undesired pharmacological responses, determine the most appropriate interventions.
5. Compare and contrast common/predictable or catastrophic species-specific adverse drug reactions and new clinical signs of an existing disease and medication errors.
6. Predict and recognise major drug-drug interactions.
7. Obtain, maintain inventory, prescribe, administer, and dispose veterinary medicinal products based on sound regulatory and ethical guidelines.
8. Integrate all principles of evidence-based medicine to informed decision making and self-improvement in all aspects of veterinary pharmacology (principles of Good Veterinary Practice).
9. Effectively communicate information about drugs and therapeutic plans to clients (translate information to lay person, educate stakeholders) , techni-

cal staff, and colleagues and ensure consistency with and cognisance of demographical, socio-economical and cultural considerations.

X. Lesson learning outcomes

Please refer to [table 1](#) in the appendix for the lesson learning outcomes.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies

Please refer to [table 2](#) in the appendix for the alignment of course learning outcomes with program learning outcomes.

XII. Course Schedule

Please refer to [table 3](#) in the appendix for the course schedule. A detailed outline of the course can also be found on the Clinical Pharmacology and Therapeutics page of Sakai.

XIII. Grading and assessment policy, and grading rubrics

Grading scale

PERCENTAGE SCORE	LETTER GRADE
> 89.5%	A
84.5 - 89.5	B+
79.5 - 84.4	B
74.5 - 79.4	C+
69.5 - 74.4	C
64.5 - 69.4	D+
59.5 - 64.4	D
< 59.4	F

Assessment policy

Knowledge of the subject will be tested formatively throughout the term and summatively in a midterm and final examination. All the material presented (notes, articles, book chapters, lecture slides, Panopto recordings and short videos) is subject in all assessments, unless the lecturer specifically indicates differently. Throughout the term students will have to answer Short Answer Questions (SAQs) on specific topics (see course schedule). An [assignment](#) on treatment of bacterial diseases in different animal species is due towards the end of the term (see course schedule; rubric can be found [here](#)) and students are required to

complete a [peer evaluation document](#) with their group (5%). The [midterm examination](#) will cover all material presented in the first half of the term. The [final exam](#) (60 questions) will cover all material presented during the term. The final grade will consist off the mark for the SAQs, the mark for the midterm examination (25%), the antimicrobial therapy assignment (10%), the peer evaluation (5%) and the mark for the final examination (40%). **Anything that falls under the learning outcomes can be part of the examinations.**

Three (3) points per assignment will be taken from the total for the assignment and the peer assessment when they are not submitted on time.

The format of the questions on the quizzes and examination will be Multiple Choice Questions (MCQs) and Short Answer Questions (SAQs).

Assessment	% of total grade	Total # of points	Subjects
SAQs	20%	42	See detailed course schedule (appendix table 3)
Midterm examination	25%	30	2 questions per lecture hour for all the material scheduled before the midterm examination. See detailed schedule in appendix table 4
Antimicrobial therapy assignment	10%	27	See group assignments (appendix table 5) Rubric in appendix table 6
Peer evaluation	5%		1 evaluation per group (appendix 7)
Final examination	40%	60	1 question per lecture hour for the material presented before the midterm examination and 3 questions per lecture hour for the material presented after the midterm examination. See detailed schedule in appendix table 4

The lecturers will very carefully design the quizzes and exams. The most current SGU examination policy is adhered to and is leading in all issues that might arise. Students are required to follow the instructions of the course director and the proctors in all matters. **Discussions and reviews of/on quizzes, exams and quiz and examination material can only take place within the first seven (7) days after completion of the quiz or examination. Comments and challenges should be communicated through the designated SGA student representative within 24 hours. No extra credits or assignments will be given.**

XIV. Recommended study strategies

This course will be assessed in a midterm and final examination, SAQs and an assignment. It is therefore essential to stay on top of the study material throughout the course. To be able to do so, it is advised to follow the following steps:

Start with studying the characteristics of groups of drugs rather than the characteristics of individual drugs. Once you understand and have familiarised yourself with this information and are able to appreciate the clinical importance of this information, study the different drugs in this group. What you will realise is that most drugs in each group have very similar characteristics; only clinically relevant exceptions of the group characteristics should be memorised for individual drugs. You do need to remember which drugs belong to which groups.

The clinical application of drugs is important, as well as relevant mechanisms of action, pharmacokinetics, adverse effects and drug-drug interactions.

XV. Instructor's expectations of the student

Students are expected to familiarise themselves with the materials before coming to class and actively participate in the discussions in class and on the Sakai forum.

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behaviour. The Code of Conduct includes student comportment and the honour code, as well as those actions that warrant disciplinary action. The University reserves the right to take

any action that it sees fit to protect the rights of the student body, as well as the reputation of the University. Abuses of this Code, outlined in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (awerners@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honour Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarise themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarise themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XXI. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXII. Appendices

Table 1: Lesson learning outcomes

Topic	Lesson learning outcomes	Course learning outcomes
Antimicrobial drugs	<p>AMB 1. Identify the drug targets and mechanisms of action of the different groups of antimicrobial drugs</p> <p>AMB 2. Compare and contrast time dependent and concentration dependent killing of bacteria and what this means for therapeutic decisions</p> <p>AMB 3. Clarify the importance of bactericidal versus bacteriostatic in therapeutic decision making (severity of disease)</p> <p>AMB 4. Compare and contrast the different pharmacodynamic and PK/PD parameters essential in treatment choices (MIC, MPC, MPW, MBC etc)</p> <p>AMB 5. Clarify different mechanisms of resistance against antimicrobial drugs</p> <p>AMB 6. Evaluate the adverse effects and contraindications of antimicrobial drugs</p> <p>AMB 7. Create treatment protocols for different bacterial diseases</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Cardiovascular pharmacology	<p>Drugs with an effect on the heart</p> <p>CV 1. Identify the drug targets and mechanisms of action of drugs with an effect on the heart</p> <p>CV 2. Compare and contrast clinical effects of drugs with an effect the heart</p> <p>CV 3. Evaluate the adverse effects and contraindications of drugs with effects on the heart</p> <p>CV 4. Create a treatment protocol for diseases of the heart</p> <p>Drugs with an effect on the vasculature</p> <p>CV 5. Identify the drug targets and mechanisms of action of drugs that effect the vasculature</p> <p>CV 6. Compare and contrast the effects (including adverse effects) of drugs with an effect on the vasculature</p> <p>CV 7. Evaluate the adverse effects and contraindications with an effect on the vasculature</p> <p>CV 8. Create a treatment protocol for diseases of the vasculature</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Ophthalmic pharmacology	<p>OPTH 1. Clarify the pharmacokinetic characteristics required for treatment of ocular diseases</p> <p>OPTH 2. Identify the drug targets and mechanisms of action of drugs that are used to treat common ocular diseases</p> <p>OPTH 3. Evaluate the adverse effects and contraindications of drugs used to treat common ocular diseases</p> <p>OPTH 4. Create treatment protocols for common diseases in and around the eye</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Urogenital pharmacology	<p>Diuretics</p> <p>UG 1. Identify the drug targets and mechanisms of action</p> <p>UG 2. Compare and contrast the clinical effects of diuretics</p> <p>UG 3. Evaluate the adverse effects and contraindications</p> <p>UG 4. Create a treatment protocol for diseases requiring the use of diuretics</p> <p>Drugs treating diseases of the kidney</p> <p>UG 5. Identify the drug targets and mechanisms of action of drugs used in acute and chronic kidney disease</p> <p>UG 6. Compare and contrast the effects of different drugs used in acute and chronic kidney disease</p> <p>UG 7. Evaluate the adverse effects and contraindications of drugs used in acute and chronic kidney disease</p> <p>UG 8. Create a treatment protocol for acute and chronic kidney disease</p> <p>Drugs used to treat diseases of urether, urinary bladder and urethra</p> <p>UG 9. Identify the drug targets and mechanisms of action for drugs with an effect on the lower urinary tract</p> <p>UG 10. Compare and contrast the different effects of drugs with an effect on the lower urinary tract</p> <p>UG 11. Evaluate the adverse effects and contraindications of drugs with an effect on the lower urinary tract</p> <p>UG 12. Create a treatment protocol for diseases of the lower urinary tract</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Gastro-intestinal pharmacology	<p>Drugs with an effect on the stomach</p> <p>GI 1. Identify the drug targets and mechanisms of action for drugs with an effect on the stomach</p> <p>GI 2. Compare and contrast the effects of drugs with an effect on the stomach</p> <p>GI 3. Evaluate the adverse effects and contraindications of drugs with an effect on the stomach</p> <p>GI 4. Create a treatment protocol for common diseases of the stomach</p> <p>Drugs with an effect on the intestines</p> <p>GI 5. Identify the drug targets and mechanisms of action of drugs with an effect on the intestines</p> <p>GI 6. Compare and contrast the effects of drugs with an effect on the intestines</p> <p>GI 7. Evaluate the adverse effects and contraindications of drugs with an effect on the intestines</p> <p>GI 8. Create a treatment protocol for common diseases of the intestines</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Chemotherapy/cancer medication	<p>CT 1. Identify the drug targets and mechanisms of action of different anticancer drugs</p> <p>CT 2. Compare and contrast the effects different groups of anticancer drugs</p> <p>CT 3. Clarify different mechanisms of resistance against drugs used to treat cancer</p> <p>CT 4. Evaluate the adverse effects and contraindications of anticancer drugs</p> <p>CT 5. Create a treatment protocol for different types of cancer</p>	1, 2, 3, 4, 5
Food safety	<p>FS 1. Clarify the importance of avoiding residues in edible tissues</p> <p>FS 2. Identify rules and regulations regarding food safety in different countries</p> <p>FS 3. Clarify which parameters are used to minimise the risk of residues in food</p> <p>FS 4. Identify withdrawal times and explain the influence dose and pharmacokinetic parameters have on the withdrawal time</p> <p>FS 5. Clarify the rules and regulations regarding extra label use of drugs in different countries</p>	6, 7, 8

Topic	Lesson learning outcomes	Course learning outcomes
Antiviral drugs	<p>AV 1. Identify the drug targets and mechanisms of action of different antiviral drugs</p> <p>AV 2. Compare and contrast the effects of different groups of antiviral drugs</p> <p>AV 3. Clarify different mechanisms of resistance against drugs used to treat viral infections</p> <p>AV 4. Evaluate the adverse effects and contraindications of antiviral drugs</p> <p>AV 5. Create a treatment protocol for different viral infections</p>	1, 2, 3, 4, 5
Antiprotozoal drugs	<p>AP 1. Identify the drug targets and mechanisms of action of antiprotozoal drugs</p> <p>AP 2. Compare and contrast the effects of different groups of antiprotozoal drugs</p> <p>AP 3. Clarify different mechanisms of resistance against drugs used to treat protozoal infections</p> <p>AP 4. Evaluate the adverse effects and contraindications of antiprotozoal drugs</p> <p>AP 5. Create a treatment protocol for different protozoal infections</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Ectoparasitocides	ECT 1. Identify the drug targets and mechanisms of action of ectoparasitic drugs ECT 2. Compare and contrast the effects of different groups of ectoparasitic drugs ECT 3. Clarify different mechanisms of resistance against ectoparasitic drugs ECT 4. Evaluate the adverse effects and contraindications of ectoparasitic drugs ECT 5. Create a treatment protocol for different ectoparasitic infestations	1, 2, 3, 4, 5
Antifungal drugs	AF 1. Identify the drug targets and mechanisms of action of antifungal drugs AF 2. Compare and contrast the effects of antifungal drugs AF 3. Clarify different mechanisms of resistance against antifungal drug AF 4. Evaluate the adverse effects and contraindications of antifungal drugs AF 5. Create a treatment protocol for fungal infections	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Anthelmintic drugs	<p>ANTH 1. Identify the drug targets and mechanisms of action of anthelmintic drugs</p> <p>ANTH 2. Compare and contrast the effects of anthelmintic drugs</p> <p>ANTH 3. Clarify different mechanisms of resistance against anthelmintic drugs</p> <p>ANTH 4. Evaluate the adverse effects and contraindications of anthelminthic drugs</p> <p>ANTH 5. Create a treatment protocol for different helminth infections/infestations</p>	1, 2, 3, 4, 5
Respiratory pharmacology	<p>RESP 1. Identify drug targets and mechanisms of action of drugs used to treat common respiratory diseases</p> <p>RESP 2. Compare and contrast the effects and adverse effects of drugs used to treat common respiratory diseases</p> <p>RESP 3. Evaluate the contraindications and adverse effects of drugs used to treat common respiratory diseases</p> <p>RESP 4. Create treatment protocols for common respiratory diseases in animals</p>	1, 2, 3, 4, 5

Topic	Lesson learning outcomes	Course learning outcomes
Therapeutic decision making	<p>TDM 1. Create treatment plans for common disorders in a variety of relevant veterinary species</p> <p>TDM 2. Evaluate treatment plans based on the therapeutic concept including Good Veterinary Practice and Antimicrobial Stewardship</p> <p>TDM 3. Compare and contrast advantages and disadvantages of different treatment modalities</p>	6, 7, 8

Table 2: Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies

	Course learning outcomes	Program learning outcomes
1	Analyse and explain in a general sense how and where drugs work at the molecular/cellular/physiologic level including concepts such as receptors, agonists, partial agonists and antagonists and non-receptor mediated drug actions.	A1: Recall, understand and adequately utilise multidisciplinary knowledge of basic structures and functions of healthy animals
2	Articulate and apply knowledge of drug absorption, bioavailability, distribution, metabolism and excretion, and judge how altered physiologic and pathologic states would be expected to affect drug concentrations within the body.	A1: Recall, understand and adequately utilise multidisciplinary knowledge of basic structures and functions of healthy animals A2: Analyse homeostasis and disturbances of basic structures and functions of healthy animals
3	Design the most appropriate pharmacological protocol (therapies) for common and important diseases using knowledge of species, breed, age, sex, disease states, genetics and other factors, and integrate pharmacological therapy in a multimodal treatment plan (i.e., surgery, nutrition, management, etc).	A2: Analyse homeostasis and disturbances of basic structures and functions of healthy animals A3: Recall, understand, and adequately utilise knowledge of aetiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations A6: Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine C2: Create comprehensive treatment plans

	Course learning outcomes	Program learning outcomes
4	Outline the desired response to pharmacological therapies as well as reflect on the most appropriate methods to monitor for undesired pharmacological responses (including lack of efficacy). In the event of undesired pharmacological responses, determine the most appropriate interventions.	C2: Create comprehensive treatment plans
5	Compare and contrast common/predictable or catastrophic species-specific adverse drug reactions and new clinical signs of an existing disease and medication errors.	C2: Create comprehensive treatment plans
6	Predict and recognise major drug-drug interactions.	C2: Create comprehensive treatment plans
7	Obtain, maintain inventory, prescribe, administer, and dispose veterinary medicinal products based on sound regulatory and ethical guidelines.	C2: Create comprehensive treatment plans A9: Apply the principles of veterinary public health for the promotion of human and animal health

	Course learning outcomes	Program learning outcomes
8	Integrate all principles of evidence-based medicine to informed decision making and self-improvement in all aspects of veterinary pharmacology (principles of Good Veterinary Practice).	<p>A6: Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine</p> <p>A11: Understand and apply basic principles of research and recognise the contribution of research to all aspects of veterinary medicine</p> <p>B4: Model life-long continuing education and professional development</p> <p>B6: Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advise</p>
9	Effectively communicate information about drugs and therapeutic plans to clients (translate information to lay person, educate stakeholders), technical staff, and colleagues and ensure consistency with and cognisance of demographic, socio-economical and cultural considerations.	<p>B1: Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities</p> <p>B8: Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences</p>

Table 3: Course schedule

Week	Dates	Topics and materials covered	Scheduled activities
Week 1	17 Aug-21 Aug	Introduction of the therapeutic concept 1. Panopto: Short video on therapeutic concept	Sakai SAQs: due date Sunday August 23 rd at 5pm AST Work on antibiotic assignment
Week 2	24 Aug-28 Aug	Introduction to food safety 1. Panopto: Food safety lecture 1 and 2	Sakai SAQs: due date Sunday August 30 th at 5pm AST
Week 3	31 Aug-4 Sept	General introduction to Anti-infectives 1. Panopto: Introduction to anti-infectives 2. Panopto: Short video on PK/PD indices 3. Panopto: Short video on bacteriostatic versus bacteriocidal	Zoom office hours on Wednesday September 2 nd from 12.30-13.30 AST Work on antibiotic assignment
Week 4	7 Sept-11 Sept	Antibiotics continued 1. Panopto: Introduction to antibiotics 1 and 2 2. Panopto: Short video on AB decision making	Work on antibiotic assignment
Week 5	14 Sept-18 Sept	Antiinfectives 1. Panopto: Short video on antiprotozoal drugs 2. Panopto: Short video on antiviral drugs 3. Panopto: Short video on anti-fungal drugs	SAQs on antiinfectives: due date Thursday September 17 th at 5pm AST Read additional information on antiinfectives: antiprotozoal, -viral and -fungal drugs
Week 6	21 Sept-25 Sept	Antiinfectives 1. Panopto: Short video on ectoparasiticides	Zoom office hours on Wednesday 23 rd September from 12.30-13.30am AST Sakai SAQs: due date Sunday September 27 th at 5pm EST
Week 7	28 Sept-2 Oct	Antiinfectives 1. Panopto: anthelmintics 1-4	
Week 8	5 Oct-9 Oct	Midterm examination	Midterm examination Monday October 5th at 12pm

Week	Dates	Topics and materials covered	Scheduled activities
Week 9	12 Oct-16 Oct	Cardiovascular drugs and diuretics 1. Panopto: Short introduction video 2. Panopto CV drugs and diuretics 1	Sakai SAQs: due date Thursday October 15 th 5pm EST Zoom office hours on Wednesday October 14 th from 12.30-13.30 AST
Week 10	19 Oct-23 Oct	Cardiovascular drugs and diuretics 1. Panopto CV drugs and diuretics 2 and 3	Sakai SAQs: due date Thursday October 22 nd at 5pm AST
Week 11	26 Oct-30 Oct	Respiratory drugs 1. Panopto: Short video on respiratory drugs 2. Panopto: respiratory drugs lecture	Zoom office hours on Wednesday October 28 th from 12.30-13.30 AST Sakai SAQs: due date Thursday October 29 th at 5pm AST Read additional material on respiratory drugs
Week 12	2 Nov-6 Nov	Anticancer drugs 1. Panopto: Short video on anti-cancer drugs 2. Panopto: anticancer drug lecture	Sakai SAQs: due date Thursday November 5 th at 5pm AST Read additional material on anticancer drugs
Week 13	9 Nov-13 Nov	Gastro-intestinal pharmacology 1. Panopto: gastro-intestinal pharmacology 1-4	Antibiotic assignment and peer evaluation assignment due on Tuesday November 10 th at 5pm EST Sakai SAQs due date Thursday November 12 th at 5pm AST
Week 14	16 Nov-20 Nov	Urogenital drugs and ophthalmology drugs 1. Panopto lecture on urogenital drugs 1-2 2. Panopto lecture on ophthalmic drugs 1-2	Sakai SAQs: due date Thursday November 19 th at 5pm AST
Week 15	23 Nov-27 Nov	Final examination	Final examination Monday November 23rd There will be 2 sessions: 11am-12.30pm (90 minutes) 1pm-2.30pm (90 minutes)

Table 4: Material for the midterm and final examination

Examination	Subject	Number of questions
Midterm examination	1. Therapeutic concept	2
	2. Food safety	4
	3. Antiinfectives	2
	4. Antibiotics	6
	5. Antiprotozoal	2
	6. Antiviral	2
	7. Antifungal	2
	8. Ectoparasiticides	2
	9. Anthelmintic	8
Final examination	1. Therapeutic concept	1
	2. Food safety	2
	3. Antiinfectives	1
	4. Antibiotics	6
	5. Antiprotozoal	1
	6. Antiviral	1
	7. Antifungal	1
	8. Ectoparasiticides	1
	9. Anthelmintic	4
	10. Cardiovascular and diuretics	9
	11. Respiratory drugs	6
	12. Anticancer drugs	6
	13. Gastrointestinal drugs	9
	14. Ophthalmology	6
	15. Urogenital drugs	6

Table 5: The topics for the assignment

Group	Subject
1	A dog with a <i>Pasteurella</i> spp. infection of the CNS
2	A foal with an osteomyelitis caused by <i>Escherichia coli</i>
3	A horse with a sinusitis caused by <i>Streptococcus equi zooepidemicus</i>
4	A sheep with a <i>Campylobacter fetus</i> infection
5	A group of swine infected with <i>Bordetella bronchiseptica</i>
6	A cat with a complicated lower urinary tract infection with <i>Enterococcus</i> spp.
7	A foal with a pneumonia caused by <i>Rhodococcus equi</i>
8	A older horse with a pneumonia caused by <i>Mycoplasma</i> spp.
9	A horse with acute enterocolitis caused by <i>Salmonella typhimurium</i>
10	An older foal with a proliferative enteropathy caused by <i>Lawsonia intracellularis</i>

Group	Subject
11	A horse with bacterial septicaemia caused by <i>Escherichia coli</i>
12	A horse with septic arthritis caused by <i>Staphylococcus</i> spp.
13	A dog with a superficial pyoderma caused by <i>Staphylococcus pseudointermedius</i>
14	A dog with an anal sac abscessation caused by <i>Proteus</i> spp.
15	A dog diagnosed with canine infectious respiratory disease complex caused by <i>Bordetella bronchiseptica</i>
16	Gastritis in a dog caused by <i>Helicobacter</i> spp.
17	Bacterial enteritis in a dog caused by <i>Clostridium perfringens</i>
18	A bacterial infection of the prostate caused by <i>Enterobacter</i> spp.
19	A dog with a <i>Leptospira interrogans</i> infection
20	A cat presents with an otitis media and interna caused by <i>Staphylococcus</i> spp
21	Conjunctivitis in a cat caused by <i>Mycoplasma</i> spp.
22	Pyothorax in a cat caused by <i>Actinomyces</i> spp.
23	Cholangiohepatitis in a cat caused by <i>Salmonella</i> spp.
24	A <i>Bartonella henselae</i> infection in a cat
25	Pneumonia in a calf caused by <i>Mannheimia haemolytica</i>
26	Pneumonia in an older cow caused by <i>Mycoplasma bovis</i>
27	Diphtheria in a cow caused by <i>Fusarium necrophorum</i>
28	A calf with neonatal diarrhoea caused by <i>Salmonella</i> spp.
29	Endometritis in a cow caused by <i>Actinomyces pyogenes</i>
30	Mastitis in a cow caused by <i>Streptococcus agalactiae</i>
31	Foot scald in a goat caused by <i>Fusobacterium necrophorum</i>
32	Progressive atrophic rhinitis in sows caused by <i>Pasteurella multocida</i>
33	Glässer's disease in swine caused by <i>Haemophilus parasuis</i>
34	Finisher pigs with an <i>Erysipelas rhusiopathiae</i> infection
35	Greasy pig disease caused by <i>Staphylococcus hyicus</i>
36	Enzootic abortion in sheep caused by <i>Chlamydia abortus</i>

Table 6: Rubric for antimicrobial therapy assignment

In this assignment you need to design an appropriate treatment protocol for an animal with a bacterial infection.

We want you to answer the following questions in the assignment:

1. What is the therapeutic goal?
2. What is the therapeutic target? When you answer this question, take susceptibility data and pharmacokinetic and pharmacodynamic indices into account.
3. Describe the treatment protocol: what is your drug of choice for this animal with this particular disease; what is the preferred route of administration? What is your rationale for choosing this drug and this route of administration?
4. Describe your second and third choice antibiotics for this bacterial infection. Describe why these are your 2nd and 3rd choice drugs
5. Give 2-3 references for the information your presented. References can only include peer reviewed articles or books, should be relevant and the latest information on the subject.
6. Write a short layman's summary for the owner, where you describe the choices you have made; treatment duration and potential adverse effects
7. The **total** word count should not exceed 750 words.

	Insufficient	Developing	Exceptional	Points total
Points	1	2	3	
Describes the therapeutic goals	Therapeutic goals not or not correctly described	Some relevant information is missing in the therapeutic goals	Concise and to the point description of the therapeutic goals	
Describes the therapeutic targets	Therapeutic target is not or not correctly described	Some relevant information on the therapeutic target is missing	Concise and to the point description of the therapeutic targets	

	Insufficient	Developing	Exceptional	Points total
Describes the treatment protocol	Key elements of the treatment protocol are missing. Safety data and/or pharmacokinetic data are not taken into consideration	Some elements of the treatment protocol are missing	Concise description of the treatment protocol, including safety precautions and relevant pharmacokinetic data	
Justifies the treatment protocol	Justification is missing key elements	The justification misses some elements	Concise and to the point justification of the treatment protocol	
Describes alternative treatment plans	No or inappropriate drugs are mentioned. Safety data and/or pharmacokinetic data are not taken into consideration	Most aspects of the treatment plan are discussed. Some information is lacking, or too much information is given	All aspects of the treatment plan are discussed in a concise manner, including safety precautions and relevant pharmacokinetic data	
Justifies the alternative treatment plan	Justification is missing key elements	The justification misses some elements	Concise and to the point justification of the alternative treatment plan	
Summarises the findings for the owner	Lengthy explanation with a lot of jargon, not to the point, essential aspects of the case work-up, treatment plan and prognosis are missing	Jargon used but understandable for laypersons. Some aspects of the case work-up, treatment plan and prognosis are missing	Concise explanation of the case work-up, treatment plan, monitoring and prognosis. Written in an understandable language for lay people	
Word count	Not adhered to the maximum word count		Adhered to the maximum word count	

	Insufficient	Developing	Exceptional	Points total
References	Less/more references are used. References or sources not relevant	Not all references are relevant	Relevant references are used	
Total group score				
Feedback				

Table 7: Peer assessment instructions and document

This peer assessment needs to be performed and submitted as a group! Please discuss (whatsapp, messenger, facetime) the 4 questions on this form and submit once consensus has been reached.

We ask for the contributions to both the “Toxins divide and conquer” as well as the “Plant toxicology” assignments.

Email me at awerners@sgu.edu for any questions or concerns.

1.Management of contributions. Complete the table below for each of the group members. Be honest and fair and come to a mutual agreement regarding each group member’s contributions. Place an “x” in the box that represents the group’s consensus regarding the individual member’s contributions.

Group number:	Contribution			
Student Name	Minor	Moderate	Major	Not contributed

- 1.Describe what went well when working on the assignments together.
- 2.What can be improved in future group work (comments for each of the group members)
- 3.What have we learned from working together?

The document needs to be signed by all group members. Only 1 document per group needs to be completed and submitted. Save the document as a PDF file and submit only the PDF file!



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Anatomy, Physiology and Pharmacology Department
Anatomy 1 (5 Credits)
ANPH 506 Term 1
Fall 2020

I. Course Faculty and Staff Information

a. Course Director:

Dr. Mahesh Shriram Deokar, B.V.Sc. & A.H., M.V.Sc. Associate Professor

E-mail - mdeokar@sgu.edu

Office Location: Veterinary Research and Diagnostic Lab. Building

- b. Office Hours:** By Appointment; appointments can be made with prior notice. Please send us an e-mail and we will respond accordingly. In case of urgency, please come directly to the Anatomy, Physiology and Pharmacology Department and talk to our secretary during usual office hours.

Contact information of the faculty members and directions to locate the faculty offices are available on the course website's front page.

Providing an appointment is a decision of a faculty member, depending upon the availability of the time and the matter to be discussed.

c. Faculty:

Dr. Rhea St. Louis, DVM, Instructor. - RStloui2@sgu.edu

Dr. Narindra Roopnarain, DVM, Instructor. - nroopnar@sgu.edu

d. Staff members:

Lab Technicians - Mr. Matthew Charles, Mr. Curtis Hopkin,

Department Secretary - Mrs. Cherry Ann Lumpriss

II. Course location

- a. Distance learning Methods, Course will be delivered online

III. Prerequisite and/or co-requisite courses

- a. There is no prerequisite course for an eligible student admitted to the DVM curriculum. Co-requisite courses include courses taught in term 1. (for IAP students DOS office advised courses in term 1)

IV. Required resources

- a. Lecture Notes - Lecture presentation Available on Sakai, i.e. Learning Management System in PDF format.
- b. Guide to the dissection of the dog, Evans · de Lahunta, Eighth Edition, Saunders /Elsevier Pub.
- c. Computer/tablet to access the learning resources that will be provided entirely in the electronic form.
(Note - An additional larger screen/Monitor is also advised as you will be dealing with images, videos, and 3D anatomy software. Watching these resources on a bigger screen will be more comfortable in my opinion. However, I am not sure if Exemplify would allow it while taking the exam)

V. Recommended resources

- a. Textbook of Veterinary Anatomy, Dyce ·Sack· Wensing, Fourth Edition, Saunders/ Elsevier pub.
- b. Colorado State University, Virtual anatomy Website/Software – SAKAI tool available to Students
- c. The University of Minnesota, College of Veterinary Medicine Anatomy Website.
- d. Learn Anatomy in 3D – www.vin.com
- e. EasyAnatomy – 3D Anatomy Software

Note - Links to b, c, d and e will be available on SAKAI

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

A. General Guidelines

- a. Students **must carry ID cards** for all the official classes and laboratory sessions, in this case of online teaching - the Zoom Meetings.
- b. While attending the zoom online sessions, students must **dress professionally**, in line with the School's Dress Code.
- c. Please note that the **course director is the first point of contact** to resolve any issues related to the course.
- d. Students are required to be familiar with the course management system (LMS) and know how to access educational resources provided on LMS. In case of difficulties please contact the IT department or the course director/course Faculty.

B. Attendance, Participation and Resources

- a. **We highly recommend attending all zoom sessions.** Students are expected to be on time during zoom sessions. **We may use zoom attendance logs to estimate participation of the students.** Repeated late arrivals and early departures from the Zoom sessions without permission will be considered nonattendance.
- b. **Personal video and audio recording of the zoom sessions is not permitted.** If necessary, specific arrangements will be made to record the Zoom sessions and posted appropriately on the course website.
- c. The student should not distribute, reproduce the material provided in PowerPoint/PDF and other forms, outside the university community.
- d. **The examination material comprises information from lecture notes and the lab manual/ lab resources.** For a given topic, the lecture exam will also contain questions from the corresponding section of the lab manual and vice versa.
- e. All the exams are sequestered, and the student will not be permitted to see the questions after the examination is over. Appropriate Examsoft reports will be available online. Copying, printing, and distribution of the quizzes and examinations questions are strictly prohibited.
- h. **Any discrepancy in the points earned, in any examination other than the final examination, must be resolved within 7 days after the examination. For the final examination, the student must request an appointment from the course director within 24 hours after completion of both sections of the exam.**

- j. Students must not expose themselves to any situation that lends itself even to a suspicion of cheating. A student found cheating is subject to immediate dismissal from the University, after appropriate deliberation.

VIII. **Course Rationale:** Anatomy 1 (ANPH 506) is a 5-credit course, comprising about 48 - 51 lectures and 28 (2-hour) laboratory sessions (. Thorough knowledge of the structure and function of the animal body is a prerequisite for anybody who wants to be a successful veterinary professional. Anatomy I, ANPH 506 is a basic veterinary anatomy course, designed for term 1 DVM students to acquire knowledge of the anatomy of the canine and feline species. Traditional methodologies of didactic lectures and laboratory sessions have been adopted to accomplish the objectives of the course. Therefore, the course involves lecture hall discussions (didactic lectures) and dissection of the dog and/or cat cadavers during the laboratory sessions. However, demonstration of the prosected specimen can be done whenever and wherever it is necessary. This course not only builds the foundation of a subsequent comparative veterinary anatomy course, but also the rest of the veterinary curriculum and veterinary medical practice. The course will involve a detailed study of the anatomy of the dog and cat. Whenever necessary, appropriate clinical references and discussions will be incorporated while presenting the content.

Both lecture and laboratory components of this course constitute the material from which examination questions shall be drawn. Some of the topics will be learned mostly during the laboratory sessions but the lecture examination will contain questions on those topics, e.g. Muscles of the pectoral limb, pelvic limb, and the trunk. Please note that students are encouraged to acquire more information by referring to the textbooks and laboratory manual along with the material provided on SAKAI.

Note: for the Fall 2020 term, as we are delivering the course online, Lectures and Laboratory sessions are presented in the digital (electronic) form. The lectures will be offered via Panopto recordings. The laboratory sessions will include resources such as Video recordings, Labelled pictures, 3D anatomy software, etc.

IX. **Course goals**

This course consolidates and complements the functional anatomy of the canine and feline species as related to veterinary medicine. Students, at the end of this course, should be able to describe the structure of the canine and feline animal body and organ systems, recognize and identify the different structures within the animal body (Canine and Feline sp.) and relate to their functional importance. The students should be able to apply the knowledge of canine and feline anatomy not only in their subsequent courses within the DVM curriculum but also throughout clinical practice.

At the beginning of the course, students will learn basic anatomical concepts, followed by the regional and topographic anatomy of the canine and feline body.

X. **Course level outcomes**

1. Students should demonstrate a thorough understanding of the basic animal tissue; relations between the cells, tissue, and organs that form the organ systems.
2. Students should be able to use the anatomic language appropriately and demonstrate a complete understanding of the anatomic planes as well as directional terms and their application in the clinical setting.
3. Students should demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as the topography of the organ systems and understand the differences between the dog and cat. (Systemic, topographic, and comparative anatomy)
4. The student should be able to relate the knowledge of systemic and topographic anatomy in clinical application, surgical procedures, the common clinical conditions associated with the organs and the systems in the canine and feline species. (Clinical/Applied Anatomy)

XI. Alignment of Course Level Outcomes with Program Level Outcomes (PLO)

Course Level Outcome	Program Level Outcome (SVM)
<p>At the end of this course</p> <ol style="list-style-type: none"> 1. Students should demonstrate a thorough understanding of the basic animal tissue; relations between the cells, tissue, and organs that form the organ systems. 2. Students should be able to use the anatomic language appropriately and demonstrate a complete understanding of the anatomic planes as well as directional terms as well as their application in the clinical setting. 3. Students should demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as the topography of the organ systems and understand the differences between the dog and cat. (<i>Combination of Systemic, topographic, and Comparative anatomy</i>) 4. The student should be able to relate the knowledge of systemic and topographic 	<p>A.1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. /Core Medical Knowledge</p> <p>A.6. Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine. /Core Medical Knowledge</p> <p>B.1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. /Core Professional Attributes</p> <p>B.3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. /Core Professional Attributes</p>

<p>anatomy in clinical application, surgical procedures, the common clinical conditions associated with the organs and the systems in the canine and feline species. (Clinical/Applied Anatomy)</p>	<p>B.5. Demonstrate and model adaptability and resilience. /Core Professional Attributes</p> <p>B.6. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. /Core Professional Attributes</p>
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XII. Lesson and Laboratory level outcomes

(P.S. – This is a **general outline** of the topics and their outcomes; the actual sequence of the topic and allocated lectures may change depending upon the need – Students will be informed accordingly.)

Lecture # & Topic	Your lecture/lab Learning Outcome	Course learning outcome Number/s
1 Course Introduction	Make students familiar with the course structure and course policy.	
2 – 9 Introduction / General Anatomy	<p>LLO A1 Define anatomy and describe divisions of anatomy.</p> <p>LLO A2 Describe and express anatomical language i.e. nomenclature and terminologies.</p> <p>LLO A3 Recognize regions of the body, anatomical planes and Describe directional terms used in anatomy.</p> <p>LLO A4 Describe the relation between cell, tissue and body systems.</p> <p>LLO A5 List the fundamental tissue of the animal body.</p> <p>LLO A6 Describe the basic structure of the epithelium.</p> <p>LLO A7 Describe connective tissue, its types, and examples; explain the superficial and deep fascia.</p> <p>LLO A8 Describe the basic structure and function of muscle tissue, classify and recognize different types of muscles.</p> <p>LLO A9 Describe the gross structures and function of the tendons, ligaments,</p>	1, 2

	<p>synovial bursa and tendon/synovial sheath.</p> <p>LLO A10 Describe the composition, structure, function, and classification of the bone tissue.</p> <p>LLO A11 List parts of the long bone.</p> <p>LLO A12 Describe the pattern of blood supply to a long bone.</p> <p>LLO A13 Describe the basic components of the nervous system of the dog and cat.</p> <p>LLO A14 Recognize various functional divisions of the nervous system of the dog and cat.</p> <p>LLO A15 Differentiate components of the Central Nervous System (CNS), Peripheral Nervous System (PNS), and Autonomic Nervous System (ANS).</p>	
<p>10 – 16</p> <p>Arthrology – General, Appendicular (Limbs) & Axial (Vertebral column).</p>	<p>LLO B1 Define joint, describe, and classify different types of joints of the body.</p> <p>LLO B2 Describe fibrous, cartilaginous and synovial joint.</p> <p>LLO B3 List the characteristics of the synovial joint and classify the synovial joints.</p> <p>LLO B4 List and describe the structure of joints of the forelimb of the dog and cat.</p> <p>LLO B5 Recognize the structures associated with joints of the forelimb such as ligaments, joint cavities, and associated structures.</p> <p>LLO B6 Describe the structure of joints of the hindlimb of the dog and cat.</p> <p>LLO B7 Recognize the structures associated with each joint of the hindlimb such as ligaments, joint cavities, and associated structures.</p> <p>LLO B8 Classify the joints of the forelimb and hindlimb and know the specific movements present in each joint.</p> <p>LLO B9 List the articulations of the vertebral column and understand the structure of these joints. Explain the structure and function of the intervertebral disk.</p> <p>LLO B10 Recognize various ligaments of the vertebral column.</p>	<p>2,3, 4</p>

	LLO B11	Understand the basic organization of the muscles of the vertebral column e.g. epaxial and hypaxial muscle systems.	
17, 18 and 20 Thoracic Cavity and Respiratory Apparatus	LLO C1 LLO C2 LLO C3 LLO C4 LLO C5 LLO C6 LLO C7 LLO C8 LLO C9 LLO C10 LLO C11	Describe the visceral spaces, list the primary body cavities and their content. Recognize the structures located within and outside of the visceral space of the neck. Describe the course of the esophagus and its relationship with the trachea. List parts of the respiratory apparatus in the canine and feline species. Describe the structure, function and topography of the parts of the respiratory apparatus i.e. Nose, nasal cavity, larynx, trachea, lungs and thoracic wall. Describe the structure of the paranasal sinuses and their relationship with the nasal cavity and carnassial teeth. Describe the structure and recognize the relationship between the thoracic cavity, pleurae, pleural cavity, and the thoracic wall. Describe the structure and function of the mediastinum and diaphragm. Discuss the pattern of lobation and lobulation of the canine and feline lungs. Recognize the clinical lung field. Describe the structure and function of the diaphragm. List the important structures that pass through the diaphragm. Underline the differences in the respiratory system and thoracic wall of the dog and cat.	2,3, 4
21 – 26 Cardiovascular System and	LLO D1	Explain the surface anatomy, internal structure, blood and nerve supply, and function of the heart.	2,3, 4

<p>Lymphatic system</p>	<p>LLO D2 Describe the structure of the pericardium and pericardial cavity.</p> <p>LLO D3 Discuss the association between the pleura and pericardium.</p> <p>LLO D4 Recognize the large blood vessels associated with the heart.</p> <p>LLO D5 Classify the blood vessels depending upon their gross structures.</p> <p>LLO D6 Discuss the pattern of systemic and pulmonary blood circulation in adult animals.</p> <p>LLO D7 List the paired and unpaired branches of the thoracic and abdominal aorta.</p> <p>LLO D8 list important landmarks on the thoracic wall used in auscultation of the heart.</p> <p>LLO D9 Underline the differences in the cardiovascular system of the dog and cat.</p> <p>LLO D10 Describe the organs of the lymphatic system of the body.</p> <p>LLO D11 List and describe the major lymphatic vessels of the body.</p>	
<p>27 – 33</p> <p>Abdomen - Digestive System and urinary apparatus</p>	<p>LLO E1 Describe the structure and function of the abdominal wall.</p> <p>LLO E2 List the muscles that form the abdominal wall.</p> <p>LLO E3 Describe the linea alba and rectus sheath.</p> <p>LLO E4 Describe the peritoneum, peritoneal cavity, and the mesenteries associated with abdominal viscera.</p> <p>LLO E5 List parts of the digestive system of the dog and cat.</p> <p>LLO E6 Describe the structure of the mouth and oral cavity, lips, cheeks, palate, and associated structures.</p> <p>LLO E7 List the components of the elementary canal.</p> <p>LLO E8 Describe the structure and function of the esophagus, stomach, intestines, rectum, anal canal, anus, and anal sphincters.</p> <p>LLO E9 List the mesenteries associated with the elementary canal.</p>	<p>2,3, 4</p>

	<p>LLO E10 Discuss the topography of the digestive system and abdominal organs.</p> <p>LLO E11 Describe the structure of the accessory organs and glands of digestion i.e. the tongue, teeth, salivary glands, pancreas, and liver.</p> <p>LLO E12 Underline the differences in the digestive system and abdominal wall of the dog and cat.</p> <p>LLO E13 List the organs of the urinary apparatus of the dog and cat.</p> <p>LLO E14 Describe the external and internal structure of the kidneys of the dog and cat.</p> <p>LLO E15 Discuss the topographic anatomy of the kidneys in the dog and cat.</p> <p>LLO E16 Discuss the structure and topography of the ureters.</p> <p>LLO E17 Describe the structure of the urinary bladder, its location, and its relationship with the urethra in the male and female animals.</p> <p>LLO E18 Underline the differences in the urinary apparatus of the dog and cat.</p>	
<p>34 - 35</p> <p>The pelvic region and Female reproductive system</p>	<p>LLO F1 Discuss the structure of the pelvic cavity, its relationship with the abdominal cavity, and its excavations.</p> <p>LLO F2 List parts of the female reproductive system.</p> <p>LLO F3 Describe the structure and topography of the female gonads i.e. Ovary in the dog and cat.</p> <p>LLO F4 Describe the structure and topographic anatomy of the tubular genitalia i.e. uterus, vagina, and vestibule of the bitch and queen. Describe the structure of the external genitalia of the dog and cat. Discuss the structure and topography of the mammae of the dog and cat.</p> <p>LLO F5 Discuss the structure and function of the accessory sex glands present in the female dog and cat.</p> <p>LLO F6 Describe the birth canal in the female.</p>	2,3, 4

	<p>LLO F7 Describe the structure of the perineum (male and female), list the muscles involved in the formation of the pelvic diaphragm.</p> <p>LLO F8 Describe the anal and urogenital triangles in the male and female.</p> <p>LLO F9 Underline the differences in the female reproductive tract and organs of the dog and cat.</p>	
<p>36 - 38</p> <p>The pelvic region and male reproductive system.</p>	<p>LLO F10 List the organs of the male reproductive system of the dog and cat.</p> <p>LLO F11 Describe the structure of the urethra in the males.</p> <p>LLO F12 describe the structure and function of the penis and prepuce of the dog and cat.</p> <p>LLO F13 Describe the structure of the testes in the dog and cat.</p> <p>LLO F14 Discuss and compare the location of the testes and scrotum in the dog and cat.</p> <p>LLO F15 Describe the spermatic cord and vaginal tunic in the dog and cat.</p> <p>LLO F16 Discuss the general features of the inguinal canal and its association with the male and female reproductive organs.</p> <p>LLO F17 Discuss the structure of the male accessory sex glands present in the dog and cat.</p> <p>LLO F18 Discuss The “Tie/lock” mechanism in the dog</p> <p>LLO F19 Underline the differences in the female reproductive tract and organs of the dog and cat.</p>	2,3, 4
<p>39 – 50</p> <p>The head and nervous system of the dog with Organs of the Special Sense.</p>	<p>LLO G1 Describe the structure of the meninges, discuss the circulation of the cerebrospinal fluid and venous sinuses associated.</p> <p>LLO G2 Describe the general features of the nervous system of the dog. Differentiate components of the CNS, PNS, and ANS.</p>	2,3, 4

	<p>LLO G3 Describe the structure of the spinal cord, brachial plexus, and Lumbosacral plexus.</p> <p>LLO G4 List parts of the brain of the dog and cat.</p> <p>LLO G5 Describe the gross structure of the major divisions of the brain.</p> <p>LLO G6 Describe the ventricular system of the brain and circulation of the CSF through the brain and spinal cord.</p> <p>LLO G7 List all the Cranial Nerves and discuss their role in the innervation of the respective organs, respective division of the nervous system.</p> <p>LLO G8 Discuss the structure and passage of the major cranial nerves.</p> <p>LLO G9 List the basic components of the autonomic nervous system and nerve supply to the viscera</p> <p>LLO G10 Describe the structure and function of the organs of special sense, the Ear and Eye.</p>	
51 The Endocrine System	<p>LLO H1 List the endocrine glands of the body and their function.</p> <p>LLO H2 Describe the structure and topography of the endocrine glands.</p>	2,3, 4

Laboratory session & Topic	Your lecture/lab Learning Outcome	Course learning outcome Number/s
1 Introduction	<p>LLO I1 Osteology – Osteological terms</p> <p>LLO I2 Understand the general terminologies used for common features of the bones.</p>	N/A 1,2,

<p>The Appendicular skeleton and The forelimb of the dog</p>	<p>LLO I3 Identify the common features of the bones on the various bones of the dog and cat.</p> <p>LLO I4 Identify the bones of the forelimb and Hindlimb.</p> <p>LLO I5 Describe the anatomical features of the various bones of the forelimb and hindlimb of the dog and cat.</p>	
<p>2 – 5</p> <p>The Appendicular skeleton and The forelimb of the dog</p>	<p>Forelimb / Pectoral Limb</p> <p>LLO J1 Identify and describe the structure of the Extrinsic Muscles of the thoracic limb</p> <p>LLO J2 Describe the origin, insertion, function, and innervation of the extrinsic muscles of the forelimb of the dog and cat.</p> <p>LLO J3 Identify the Intrinsic Muscles of the thoracic limb.</p> <p>LLO J4 Describe the origin, insertion, function, and innervation of the following intrinsic muscles of the forelimb of the dog and cat</p> <ul style="list-style-type: none"> a. lateral and medial muscles of the scapula and shoulder. b. caudal muscles of the brachium (Arm) c. cranial muscles of the brachium (Arm). d. Cranio-lateral muscles of the antebrachium (forearm) e. Caudo-medial muscles of the antebrachium (Forearm) <p>LLO J5 List major differences in the extrinsic and intrinsic muscles of the forelimb of the dog and cat.</p> <p>Hindlimb/Pelvic Limb</p> <p>LLO J6 Identify the muscles of the gluteal region and the hindlimb of the dog and cat.</p>	<p>1,2,3, 4,</p>

	<p>LLO J7 Describe the origin, insertion, function, and innervation of the following muscles of the Hindlimb of the dog and cat</p> <ul style="list-style-type: none"> f. Caudal muscles of the thigh g. Medial Muscles of the thigh h. Lateral Muscles of the pelvis i. Caudal Hip Muscles j. Cranial Muscles of the Thigh k. Muscles of the Leg (Crus) <p>LLO J8 List major differences in the muscles of the hindlimb of the dog and cat.</p>	
<p>6 - 7</p> <p>The Axial Skeleton and the Muscles of the trunk.</p>	<p>LLO J9 Identify and describe the bones of the Axial Skeleton.</p> <p>LLO J10 List the major differences in the axial skeleton of the dog and cat</p> <p>LLO J11 Identify the hypaxial and epaxial muscles of the neck and trunk.</p> <p>LLO J12 Identify and describe the origin, insertion, function (action), and innervation of the epaxial and hypaxial muscle systems.</p> <ul style="list-style-type: none"> a. Hypaxial muscles of the neck, thoracic wall, and abdominal wall. b. Epaxial Muscles systems i.e. transversospinalis system, Iliocostalis System and Longissimus system <p>LLO J13 Identify and describe the structure of the inguinal Canal, deep and superficial inguinal rings, as well as the vaginal tunic in the male and vaginal process I the female.</p> <p>LLO J14 List major differences in the muscles of the neck and trunk of the dog and cat.</p>	1,2,3, 4,
<p>8</p> <p>Joints of the forelimb,</p>	<p>LLO B12 Identify all the joints of the forelimb</p> <p>LLO B13 Identify, parts, and associated structures of the following joints of the forelimb</p>	1,2,3, 4,

<p>hindlimb and vertebral column</p>	<ul style="list-style-type: none"> a. shoulder Joint, b. Cubital joint c. carpus d. distal interphalangeal joint <p>LLO B14 Identify all the joints of the hindlimb</p> <p>LLO B15 Identify, parts, and associated structures of the following joints of the hindlimb</p> <ul style="list-style-type: none"> a. The hip/coxal joint b. The stifle /genual joint c. The tarsus <p>LLO B16 Identify the Atlanto-occipital and atlantoaxial joint and their parts</p> <p>LLO B17 Recognize the differences in the joints of the dog and cat.</p>	
<p>9 – 12</p> <p>The Neck and Thorax</p>	<p>LLO K1 Identify the blood Vessels and Nerves of the neck</p> <p>LLO K2 Thorax region of the dog and cat.</p> <ul style="list-style-type: none"> a. Superficial Vessels and Nerves of the Thoracic wall b. Deep Vessels and Nerves of the Thoracic Wall <p>LLO K3 Identify and describe the following structures in the thoracic cavity of the dog and cat.</p> <ul style="list-style-type: none"> c. the Pleura and Mediastinum, d. Lungs e. Veins Cranial to the Heart f. Arteries Cranial to the Heart g. Thoracic Aorta and Its Branches h. Components of the Autonomic Nervous System i. Vessels and nerves of the thoracic cavity <p>LLO K4 Identify and describe the Heart, pericardium, and associated structures in the dog and cat.</p>	<p>1,2,3, 4</p>

	LLO K5	Recognize the major differences in the dog and cat in the thoracic cavity and its organs.	
13 – 14 Blood vessels and Nerves of the Thoracic limb.	LLO L1 LLO L2 LLO L3 LLO L4 LLO L5	Describe and identify the major blood vessels of the thoracic limb and blood circulation in the thoracic limb. Describe the major areas supplied and drained by following blood vessels and identify them. a. Axillary artery and branches b. Brachial artery and branches c. Median artery and branches d. Arteries of the forearm and paw Describe the innervation of the forelimb in general. Identify the brachial plexus and describe the nerves that form the brachial plexus, and all the nerves derived from the brachial plexus. a. Nerves of the scapular region and arm b. Nerves of the forearm and paw Describe the differences in the vasculature and innervation of the forelimb in the dog and cat.	1,2,3, 4
15 – 16 The abdomen and the pelvis - Digestive system and Urinary system	LLO E1 LLO E2 LLO E3 LLO E4 LLO E5	Identify the vessels and nerves of the ventral and lateral parts of the abdominal wall, describe the pattern of distribution of vasculature and nerves in this region of the body. Identify the Inguinal Structures, i.e. Inguinal rings, inguinal canal, vaginal tunic, vaginal process, pudendal vessels and nerves, and lymph node. Describe the abdominal and Peritoneal Cavities, and identify the parietal and visceral peritoneum. Identify the organs of the digestive system and urinary system in the abdominal cavity. Describe the topography of the abdominal viscera.	1,2,3, 4

	<p>LLO E6 Identify the liver and its lobes, biliary system, gall bladder, pancreas, and spleen.</p> <p>LLO E7 Identify the blood vessels and nerves of the abdominal cavity, describe their architecture, including visceral and parietal branches of the abdominal aorta.</p>	
<p>17 – 18</p> <p>The pelvis and the reproductive organs</p>	<p>LLO F1 Identify parts of the male and female reproductive system in the pelvic cavity of the dog and cat.</p> <p>LLO F2 Describe the topography of the organs of the male and female reproductive systems.</p> <p>LLO F3 Identify the external and internal iliac arteries and their branches responsible for blood supply to the pelvic viscera.</p> <p>LLO F4 Describe the general pattern of innervation and identify the nerves in the pelvic cavity and pelvic wall.</p> <p>LLO F5 Identify the mammae.</p> <p>LLO F6 Describe the differences in the male and female reproductive organs of the dog and cat.</p>	1,2,3, 4
<p>19 – 20</p> <p>Blood vessels and Nerves of the Hindlimb</p>	<p>LLO L6 Describe the major blood vessels of the pelvic limb/hindlimb and blood circulation in the pelvic limb.</p> <p>LLO L7 Describe the major areas supplied and drained by following blood vessels and identify them.</p> <p>a. The femoral artery and its branches</p> <p>b. The popliteal artery and its branches</p> <p>c. The saphenous artery and its branches</p> <p>d. The cranial tibial artery and its branches</p> <p>LLO L8 Describe the innervation of the hindlimb in general.</p> <p>LLO L9 Identify all the nerves derived from the lumbosacral plexus, describe the formation of the lumbosacral plexus.</p>	1,2,3, 4

	<p>LLO L10 Identify the following nerves in the hindlimb</p> <ul style="list-style-type: none"> e. The femoral, ischiatic / sciatic and obturator nerves. f. Nerves of the gluteal region and thigh. g. Nerves of the crus and pes. <p>LLO L11 Describe the differences in the vasculature and innervation of the hindlimb in the dog and cat.</p>	
<p>21 – 26</p> <p>The Head of the dog</p>	<p>LLO M1 Identify and describe the bones of the skull and their important features in the dog and cat.</p> <ul style="list-style-type: none"> a. Dorsal and Lateral Surfaces of the Skull b. Ventral Surface of the Skull c. Caudal Surface of the Skull d. Mandible e. Cavities of the Skull <p>LLO M2 Identify and describe the following structures in the head of the dog.</p> <ul style="list-style-type: none"> a. Muscles of the facial expression and major muscles of mastication. b. Oral Cavity and the pharynx in the sagittal section of the head. c. Nasal cavity and the Larynx in the sagittal section of the head. d. The External Ear e. The Eye and Related Structures f. The Major Blood vessels and nerves of the head <p>LLO M3 Underline the differences in the above-mentioned structures of the head of the dog and cat.</p> <p>LLO M4 Identify and describe the following structures of the Head and the vertebral column</p> <ul style="list-style-type: none"> a. Brain, <ul style="list-style-type: none"> i. Cerebrum-Surface Structures ii. Cerebellum iii. Brain Stem-Surface Structures iv. Diencephalon v. Mesencephalon vi. Ventral Metencephalon 	<p>1,2,3, 4</p>

	vii. Myelencephalon viii. Telencephalon b. Spinal cord, spinal nerve and associated structures LLO M5 List the major structural differences in the brain of the dog and cat.	
Note – 1. The structure in anatomical context refers to the form, disposition, blood, and nerves supply to an organ, system (or system in portion), and part of the body. 2. In virtual teaching, students will identify the structures/organs/their parts on the pictures provided in the questions in the exams and quizzes.		

XIII. **Course Schedule**

- a. Available as a separate document in the syllabus section.

XIV. **Grading and assessment policy, and grading rubrics (must comply with SGU and SVM examination policies)**

a. **Grading scale**

GRADE	PERCENT SCORE	GRADE POINTS
A	89.5 - 100	4
B+	84.5 – 89.49	3.5
B	79.5 – 84.49	3
C+	74.5 – 79.49	2.5
C	69.5 – 74.49	2
D+	64.5 – 69.49	1.5
D	59.5 – 64.49	1
F	≤ 59.49	0

b. Types of assessment

No.	Examination / Quiz	Date and Day	Points
1	Quiz # 1 - Lecture	Due on Wednesday, September 16, 2020 (Week #5)	20
2	Quiz # 2 - Laboratory		20
3	Quiz # 3 - Laboratory	Midterm Exam Week (Week # 8)	20
4	Midterm Lecture Examination	Lecture exam Wednesday, October 07, 2020 at 1.30 pm (Grenada Time)	60
5	Quiz # 4 - Lecture	Due On Wednesday, November 11, 2020 (Week # 13)	20
6	Quiz # 5 - Laboratory		20
7	Quiz # 6 - Laboratory	Final Exam Week (Week # 16)	20
8	Final Lecture Examination	Lecture Exam Friday, Dec 04, 2020 at 1.30 pm (Grenada Time)	60
	Required Zoom Meeting attendance and Participation	Throughout the term	10
			250
<p>Note – Quizzes and Assignments will be delivered through SAKAI tests and quizzes section. Examinations (Lecture – Mid-term and Final) will be delivered through Exemplify Midterm and Final lecture Exams are Cumulative – Quizzes are not cumulative.</p>			

XV. E-value use for outcomes assessment evaluation

- a. None

XVI. Recommended study strategies

- a. Students are advised to combine laboratory and lecture components for studying the material. Remember, lab specimens are the best visual aids you can ever use.

XVII. Instructor's expectations of the student

- a. Students will be informed accordingly from time to time.

XVIII. Professionalism statement

- a. The student must behave and dress professionally. Refer to the professionalism course and student's manual for further details on Professionalism.

XIX. Attendance policy

- a. Lecture attendance policy: Students are expected to attend all Lecture sessions.

- b. Laboratory session attendance policy: Students are expected to attend all Laboratory sessions.

Approved/informed Absence from the lecture and lab can be obtained from the faculty members by informing the faculty members in advance.

XX. **Policy regarding missing examinations and/or failure of submission of assignments**

- a. A student who is forced to miss an examination due to illness **must submit an online medical excuse form.** The School of Veterinary Medicine guidelines shall be strictly followed.

XXI. **ExamSoft policy**

- a. As Stated in the Student Manual
- b. Students are permitted to download exams within 24 hours of the start of the exam. The “start of the exam” is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.

XXII. **Copyright policy** - You are encouraged to read the SGU regulations governing copyright. Personal Audio and Video Recordings are strictly prohibited.



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture	Topics	Lecture Hours	Lab	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
1	1	Course Introduction – Zoom Meeting	4	No Lab	No Lab - Voluntary watching of Osteology videos	0	Course Introduction Zoom – 1 Hr (required)	5
	2	Introduction – General Anatomy						
	3	Introduction – General Anatomy						
	4	Introduction – General Anatomy						
	5	Introduction – General Anatomy						
2	6	Introduction – General Anatomy	4	1	Chapter 2 General concepts Bones of the forelimb. Bones of the Hindlimb.	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required)	8
	7	Skeletal system – Osteology terms		2	Chapter 2 The axial skeleton Skull Bones and vertebrae ribs sternum		Zoom OH 1 Hr (Optional)	
	8	Arthrology – General						
	9	Arthrology - Forelimb						
3	10	Arthrology - Forelimb	4	3	Chapter 2 Extrinsic Muscles of the thoracic limb	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required)	8
	11	Arthrology - Hindlimb						
	12	Arthrology – Vertebral Column		4	Chapter 2 Intrinsic Muscles of the thoracic limb		Zoom OH 1 Hr (Optional)	
	13	Arthrology – Applied Vertebral Column						



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture #	Topics	Lecture Hours	Lab #	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
4	14	Arthrology – Vertebral Column	4	5	Chapter 2 Muscles of the pelvic limb	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	15	Thoracic Cavity – Respiratory Apparatus						
	16	Thoracic Cavity – Respiratory Apparatus		6	Chapter 2 Muscles of the pelvic limb			
	17	Thoracic Cavity – Respiratory Apparatus						
5	18	Thoracic Cavity – Respiratory Apparatus	3 + 1 (lecture quiz) = 4	7	Chapter 2 The axial skeleton and Muscles of the Trunk and Neck	1.5 + 1.5 + 1(Lab Quiz) = 4	Zoom OH 1 Hr (Optional)	8
	19	<i>Quiz # 1 and Quiz # 2</i>						
	20	Thoracic Cavity – Cardiovascular System – Heart		8	Chapter 2 Arthrology Section <i>Forelimb joints</i> <i>Hindlimb Joints</i>			
	21	Thoracic Cavity – Cardiovascular System – Heart						



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture	Topics	Lecture Hours	Lab	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
6	22	Thoracic Cavity – Cardiovascular System – heart	4	9	Chapter 3 - The Neck and Thorax Neck and Thoracic cavity, superficial vessels	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	23	Thoracic Cavity – Cardiovascular System – Blood Vessels						
	24	Thoracic Cavity – Cardiovascular System – Blood Vessels		10	Chapter 3 - The Neck and Thorax • Deep vessels and nerves • autonomic nervous system			
	25	Thoracic Cavity – Cardiovascular System – Lymphatic apparatus						
7	26	Thoracic Cavity – Cardiovascular System – Lymphatic apparatus	1	11	Chapter 3 - The Neck and Thorax Heart and Pericardium Topography surface anatomy	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	4
				12	Chapter 3 - The Neck and Thorax • Heart and Pericardium • Internal structure, blood supply			
8	Mid term Exam Week – Wednesday, October 07, 2020 Quiz # 3 due on or before 11.55 pm Anatomy 1, ANPH 506 lecture exam at 1.30 pm 60 points (max 75 questions, max 2.00 hours)							



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture	Topics	Lecture Hours	Lab	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
9	27	Abdomen – Digestive system	4	13	Chapter 3 Vessels and nerves of the Thoracic limb.	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	28	Abdomen – Digestive system						
	29	Abdomen – Digestive system		14	Chapter 3 Vessels and nerves of the Thoracic limb			
	30	Abdomen – Digestive system						
10	31	Abdomen – Digestive system	4	15	Chapter 4 Abdomen and pelvis • Abdominal wall • Abdominal viscera,	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	32	Abdomen – Digestive system + Abdomen – Urinary System						
	33	Abdomen – Urinary System		16	Chapter 4 Abdomen and pelvis • Abdominal viscera • Innervation to the Abdominal Viscera			
	34	The Pelvis - Female reproductive system						
11	35	The Pelvis - Female reproductive system	4	17	Chapter 4 Abdomen and pelvis Pelvic region - General Pelvic Viscera • Male reproductive organs • Female reproductive organs	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	36	The Pelvis - Male reproductive system						
	37	The Pelvis - Male reproductive system		18				
	38	The Pelvis - Male reproductive system						



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture	Topics	Lecture Hours	Lab	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
12	39	Meninges and CNS : The spinal cord	3 + 1 (lecture quiz) = 4	19	Chapter 4 Abdomen and pelvis Vessels and nerves of the pelvic Limb	1.5 + 1.5 + 1(Lab Quiz) = 4	Zoom OH 1 Hr (Optional)	8
	40	Quiz # 4 and Quiz # 5						
	41	CNS: The Spinal cord		20	Chapter 4 Abdomen and pelvis • Vessels and nerves of the pelvic Limb • Blood vessels Pelvis			
	42	CNS : The Brain						
13	43	CNS : The Brain	4	21	Chapter 5 – The Head The head and Neuroanatomy – The skull	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	44	The autonomic Nervous system						
	45	The Cranial nerves		22	Chapter 5 - The Head The head and Neuroanatomy – The muscles of the head			
	46	The Cranial nerves						
14	47	The Spinal nerves	4	23	Chapter 5 - The Head The head and Neuroanatomy – The blood vessels and nerves of the head	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	8
	48	The Spinal Nerves						
	49	The Eye and The Ear		24	Chapter 5 - The Head The head and Neuroanatomy – The sagittal section of the head.			
	50	The Eye and The Ear						



Weekly Learning Schedule and minimum number of hours spent in Anatomy 1 (ANPH 506)

Week #	Lecture	Topics	Lecture Hours	Lab	Topics	Lab Hours	Zoom Sessions	Total Number of Hours
15	51	The endocrine organs	1	25	Chapter 5 - The Head The head and Neuroanatomy - The brain and Cranial nerves The spinal cord, its structure, and a spinal nerve.	1.5 + 1.5 = 3	Lab Zoom 1 Hr (Required) Zoom OH 1 Hr (Optional)	4
					26			
Final Exam Week – Friday, December 04, 2020 Quiz # 6 due on or before 11.55 pm Anatomy 1, ANPH 506 lecture exam at 1.30 pm 60 points (max 75 questions, max 2.00 hours)								
16								

Note – For a detailed description of the lecture and lab dissection topics, refer to the corresponding lab learning outcomes and lab dissection plan document/Lessons section of SAKAI.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY PHYSIOLOGY I SYLLABUS (5 Credits)
ANPH512 (Term 1)
Fall 2020

I. Course Faculty and Staff Information

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Office hours are offered via Zoom meetings in two (2) modalities: “one-to-one individual/small groups” by appointment and “collective office hours” for the whole class every Friday at 12:30 pm.

Instructor

Dr. Hugo Hernández Fonseca. MV-MSc-PhD

Prof. Vet. Physiology, SVM

Office: Veterinary Office Building (SGU campus map: # 48)

Tel: 444 - 4175 ext 3328

email: hfonsec1@sgu.edu

Office hours are offered via Zoom meetings in two (2) modalities: “one-to-one individual/small groups” by appointment and “collective office hours” for the whole class every Friday at 12:30 pm.

II. Course location

Online location—Sakai resources: Panopto, Zoom meetings, Test & Quizzes, Lessons, Assignments, and others).

III. Prerequisite and/or co-requisite courses

Students must be enrolled in DVM term 1.

IV. Required resources

Visit the following link regarding the required computer specifications to use ExamSoft.

<https://mycampus.sgu.edu/group/office-of-institutional-advancement/examsoft1>

V. Recommended resources

- The recommended textbook for this course is: Physiology of Domestic Animals by O.V. Sjaaastad, K. Hove & O. Sand, 3rd Edition; Scandinavian Veterinary Press, 2016

- A very good, concise textbook is: Human Physiology: an integrated approach by Dee Unglaub Silverthorn, 4th edition, Pearson Education, Benjamin Cummings, San Francisco, CA, 2007.

- A very detailed textbook and our physiology “bible”: Guyton and Hall Textbook of Medical Physiology by JE Hall, 13th edition, Saunders Co, 2016.

- A great book for a graphic approach of basic physiology: Color Atlas of Physiology by S. Silbernagel & A. Despopoulus, 6th Edt, Thieme Publishers, N.Y., 2009.

- An excellent human medical physiology textbook contains very educative images to summarize some of the basic functions of the body. Human Anatomy & Physiology 1st Edition by Erin C. Amerman and Publisher Pearson.

- **Additionally, these two excellent and concise medical physiology textbooks, contain very well-designed diagrams and figures. They are available as E-books at SGU library:**

- Ganong’s Review of Medical Physiology by Barrett KE, Barman SM, Boitano S, Brooks HL. 25th edition, McGraw-Hill Education., 2016.

<https://periodicals.sgu.edu/login?url=https://accessmedicine.mhmedical.com/book.aspx?bookid=1587>

- Medical Physiology: The Big Picture by Kibble JD, Halsey CR. McGraw-Hill Education., 2015.

<https://periodicals.sgu.edu/login?url=https://accessmedicine.mhmedical.com/book.aspx?bookid=1291>

If you have any concerns or problems accessing these resources, contact Suzanne Paparo spaparo@sgu.edu

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at <https://mycampus.sgu.edu/student-accessibility-and-accommodation-services/Requesting-Accommodations>

VII. Other requirements

None

VIII. Course rationale

In the DVM program, veterinary physiology is covered by two courses: ANPH512/DVM 1 and ANPH513/DVM 2. Both courses focus on the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of animals, commensurate with the requirements for a physician providing primary care to a variety of veterinary patients. Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice. The ANPH512 course covers the following organ systems: nerve & muscle, cardiovascular, hematology (erythron; hemostasis), gastrointestinal, respiratory, and renal physiology. This course also contains independent group work, in which students are exposed to clinical case studies and give short oral and written presentations. Students share responsibility for a collectively earned group grade and should demonstrate professional behavior including communication and team-working skills.

IX. Course-level outcomes

The goal of the Physiology I course is to introduce fundamental concepts of the following systems of common domestic animals: nerve & muscle, cardiovascular, hematology (erythron and hemostasis), gastrointestinal system including ruminants, respiratory, and renal systems.

Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice. This course prepares students for subjects taught in Clinical Pathology, Pathology, and Internal Medicine. Working at times in groups and sharing

responsibility for a collectively earned group grade will encourage demonstration of professional behavior and team-working skills.

Course-level Learning Outcomes

The Vet. Physiology I and the Vet. Physiology II courses form a unit and address the same course objectives. Upon successful completion of both Veterinary Physiology courses (ANPH 512 & 513), students should be able to:

CLO 1. Nerve and Muscle: Describe the physiological functions of excitable cells such as neurons and muscles, including the autonomic nervous system and reflexes in healthy animals and how these systems contribute to whole-body homeostasis.

CLO 2. Nerve and Muscle-Clinical: Apply the acquired knowledge of CLO 1 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 3. Cardiovascular-Concepts: Describe the physiological functions of the cardiovascular system including the heart and circulation of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 4. Cardiovascular-Clinical: Apply the acquired knowledge of CLO 3 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 5. Hematology-Concepts: Describe the physiological functions of the whole blood system of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 6. Hematology-Clinical: Apply the acquired knowledge of the CLO 5 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 7. Gastrointestinal-Concepts: Describe the physiological functions of the Gastrointestinal system of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 8. Gastrointestinal-Clinical: Apply the acquired knowledge of the CLO 7 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 9. Respiration-Concepts: Describe the physiological functions of the Respiratory system of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 10. Respiration-Clinical: Apply the acquired knowledge of the CLO 9 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 11. Renal-Concepts: Describe the Renal physiological functions of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 12. Renal-Clinical: Apply the acquired knowledge of the CLO 11 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO-13. Work effectively in a team when preparing and discussing group assignments, take responsibility for the team's performance, and present team-allocated tasks to a broader audience in a professional manner.

X. Lesson-level outcomes

Detailed lesson-level outcomes have been designed for every lecture topic and are found in a separate pdf appended to this syllabus.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcomes (CLOs) #	SGU-SVM Program Level Outcomes (PLOs)
1, 3, 5, 7, 9, 11	1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2, 4, 6, 8, 10, 12	2. Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
2, 4, 6, 8, 10, 12	3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis, and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.
2, 4, 6, 8, 10, 12	4. Explain the relationship between disease processes and clinical signs.
13	12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
13	14. Demonstrate, evaluate, and model leadership, teamwork, and conflict resolution skills as a member of a multidisciplinary team.

XII. Course Schedule

The lecture schedule is appended at the end of the syllabus document.

XIII. Grading and assessment policy, and grading rubrics

1. Examinations

There will be 4 modular examinations as listed in the table below. The midterm and the final examinations will also contain a comprehensive component. Modular examinations expect a student to demonstrate in-depth, detailed knowledge about the material covered, including integration of basic concepts. Detailed study objectives are included in each handout. The comprehensive examinations serve to reinforce the acquired knowledge and will focus on broader concepts and clinical applications. All examinations are sequestered. Exams may contain multiple choice (single best answer), true/false, and fill-in blanks. Examination questions come from material covered in lectures, handouts, and any other sources the instructors indicate. All rules and regulations concerning examinations including EXAMSOFT are detailed in the SGU Student manual.

2. Assignments

Group assignments will be given at the beginning of each Zoom session. These assignments could include short clinical scenarios and/or analysis of basic biomedical functions, which serve to apply and reinforce the taught material and to stimulate students to collaborate professionally. The whole class will attend six (6) mandatory synchronous Zoom sessions (see course schedule) in the term. The class will be divided by the course director into groups, previous to the first session. Each group will be in a *Zoom Breakout Room* for 40-50 minutes and will discuss the assignments using the content discussed in the lecture recordings and any other material either provided by the instructor or found by the students. During the session, each group must write down the answers to the assignments. Thereafter, groups will be randomly called upon to present their answers to these assignments and to answer additional questions related to the topic. Groups will choose their presenter for the session. A different presenter must be chosen in each assignment presentation. Because assignments differ greatly in their degree of difficulty, presentations will be marked as pass/fail based on the correctness of the answers, the ability to answer related questions, and the student's professional behavior during the presentation. **Every group must submit a written report of each assignment in Sakai within one (1) hour after the Zoom session, following the instructions provided on the weekly checklist.**

Every group must present at least once during the assignment sessions and pass the oral presentation. Every group must submit six (6) written reports and must pass five (5) out of six (6) reports. If a group passes, each member will receive 20 points; if a group fails, no points will be given to any member.

The assessment schedule and grading scheme are as follows:

Assessment	Content. Lecture recording numbers	Date	POINTS
Quiz 1 (Sakai)	1-12	Open: Sep 4 at 6:00 pm. Due: Sep 11 at 6:00 pm.	15
Midterm (ExamSoft)	1-30	Oct 09 at 11:00 am	65
Quiz 2 (Sakai)	31-51	Open: Nov 09 at 6:00 pm. Due: Nov 20 at 6:00 pm.	15
Final (ExamSoft)	1-61	Dec 07 at 11:00 am	85
Group Assignments (Zoom and Sakai)		See the schedule	20
TOTAL POINTS			200

Letter Grade	Percentage	Number Grade
A	89.5 - 100	4
B+	84.5 - 89.49	3.5
B	79.5 - 84.49	3
C+	74.5 - 79.49	2.5
C	69.5 - 74.49	2
D+	64.5 - 69.49	1.5
D	59.5 - 64.49	1
F	1- 59.49	0

XIV. Recommended study strategies

Every learner is different, and these are only general recommendations:

1. pre-reading material before watching and interact with the lecture recording.
2. revising lecture recording material weekly, ensuring that the material is understood.
3. for exam preparation, self-challenge is crucial: explain the learned material to yourself first without having to refer to your handouts and notes. Then work in small online groups and repeat this process. Vocalization is an important element to check and improve your own knowledge and understanding of concepts. Prepare yourself as if going into an oral exam. ***If you cannot explain it, you do not know it!***

XV. Instructor's expectations of the student

Students are always expected to adhere to the Professionalism Policy (see XVIII) and demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public.

The student is expected to review lecture recordings, assignments, and any other material indicated by the professor before zoom meetings.

XVI. Professionalism statement

The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards is detailed in the SGU student manual 2019/2020.

XVII. Attendance/Participation Policy

The policy relating to class attendance is detailed in the SGU 2019/2020 student manual.

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly.

Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Lecture or Zoom session attendance policy: this course has designed six (6) mandatory Zoom (synchronous) sessions that will be used to analyze and discuss the modular group assignments. Failure to participate in 80% of the mandatory Zoom sessions will imply the loss of the points allocated to this activity. The scheduling of the Zoom (synchronous: 12:30 pm, AST) sessions was designed considering the time zones of most of the students, however, it is fully understood that this might represent a limitation to some students located in other time zones. Therefore, if you know in advance that you have any limitation to attend these synchronous activities, please contact the course director during the first week of activities.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:

2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The Plagiarism Policy is detailed in the SGU Student Manual 2019/2020. Please note that "... materials (such as slides, handouts and audio/video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Reproduction in whole or in part is prohibited".

Please feel free to contact me if you have questions about the material, any concerns, or suggestions on how we can improve the Veterinary Physiology 1 course. We do have an open-door policy. Please make an office hour appointment via email at any time if you prefer to discuss some specific topics via a synchronous Zoom meeting.

- Appendix 1: Lecture Schedule Fall 2020. Dr. Hector Zerpa (HZ). Dr. Hugo Hernández Fonseca (HHF).
- Appendix 2: Lesson Level Outcomes Fall 2020

LECTURE SCHEDULE AND CONTENT

ANPH512 / Vet. Physiology I / Schedule – Fall 2020

Weeks	Lecture recording	Module 1: Nerve & Muscle (HZ)
1 17-21 August	01	Introduction
	02	Membrane properties/membrane transport
	03	Resting membrane potential
2 24-28 August	04	Electrical signals in neurons
	05	Cell to cell signaling in neurons
	06	Autonomic nervous system
	07	Autonomic nervous system
3 31 August 04 September	08	Somatic and autonomic reflexes
	09	Muscle
	10	Muscle
	11	Integration: skeletal muscle diseases
	Assignment 1	<i>Group Assignment</i> (Mandatory Zoom meeting: Friday Sep 04 at 12:30 pm AST)
		<i>Quiz 1: 15 Points / Lectures 1-12. Open date: Sep, 4 at 6:00 pm. Due date: Sep, 11 at 6:00 pm. Duration: 25 min.</i>
Module 2: Cardiovascular (HZ)		
4 07-11 September	12	Introduction and basic anatomy of the heart
	13	Excitation of the heart
	14	Control of cardiac activity/electrocardiography
	15	ECG
	Assignment 2	<i>Group Assignment: calculation of heart rate and heart axis</i> (Mandatory Zoom meeting: Friday Sep 11 at 12:30 pm AST)
5 14-18 September	16	Cardiac cycle
	17	Heart sounds and murmurs
	18	Basic pathophysiology of heart arrhythmias
	19	Integration: heart failure
	20	Integration: heart failure

6 21-25 September	21	Blood Flow and pressure
	22	Blood Flow and pressure
	23	Microcirculation and lymphatic
	24	Regulation of blood flow and pressure/ Integration: exercise
	25	Integration: pathophysiology of hypertension and hypotension
		Module 3: Hematology (HHF)
7 28 September 02 October	26	Introduction
	27	Erythron
	28	Erythron
	29	Erythron
	30	Erythron
8 05-09 October		Midterm week: ANPH512, Physiology 1. Midterm: October 09 at 11:00 am: 65 Points / Lecture recordings 1-30
9 12-16 October	31	Blood groups
	32	Blood groups
	33	Hemostasis
	34	Hemostasis
	Assignment 3	<i>Group Assignment: clinical cases hematology (Mandatory Zoom meeting: Friday Oct 16 at 12:30 pm AST)</i>
		Module 4: Gastrointestinal (HZ)
10 19-23 October	35	General Principles
	36	General Principles
	37	Cephalic Phase
	38	Gastric Phase
	39	Pancreas & Liver and Bile.
	40	Small Intestinal Phase
11 26-30 October	41	Large Intestinal Phase
	42	Ruminants
	43	Ruminants
	44	Hindgut Fermenters
	Assignment 4	<i>Group Assignment: clinical cases gastrointestinal (Mandatory Zoom meeting: Friday Oct 30 at 12:30 pm AST)</i>

Module 5: Respiration (HZ)		
12 02-06 November	45	Ventilation of the lungs
	46	Ventilation of the lungs
	47	Pulmonary blood flow
	48	Gas exchange in the lung
	49	Gas transport in blood
13 09-13 November	50	Gas transport in blood
	51	Regulation of the respiratory function
	52	Non respiratory functions of the respiratory system
	Assignment 5	<i>Group Assignment: clinical cases of respiration (Mandatory Zoom meeting: Friday Nov 13 at 12:30 pm AST)</i>
		<i>Quiz 2: 15 Points/Lectures 31-51 Open date: Nov, 13 at 6:00 pm. Due date: Nov, 20 at 6:00 pm. Duration: 25 min</i>
Module 6: Renal (HZ)		
14 16-20 November	53	Introduction to renal physiology
	54	Function of the glomerulus and tubular system
	55	Function of the glomerulus and tubular system
	56	Tubular handling of important substances
	57	Tubular handling of important substances
	Assignment 6	<i>Group Assignment: clinical cases of the renal system (Mandatory Zoom meeting: Friday Nov 20 at 12:30 pm AST)</i>
15 23-27 November	58	Regulation of fluid volume and osmolality
	59	Kidney functions and laboratory parameters: Kidney lab.
	60	Kidney functions and laboratory parameters: Acid/Base Balance
	61	Renal Pathophysiology
	Review Session	<i>Review Session (Voluntary Zoom meeting: Friday Nov 27 at 12:30 pm AST)</i>
16 30 November 04 December		Final exams week
17 07-11 December		ANPH512, Physiology 1. Final December 07 at 11:00 am: 85 Points / Lecture recordings 1-61



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY PHYSIOLOGY II SYLLABUS (3 Credits)
ANPH513 (Term 2)
Fall 2020

I. Course Faculty and Staff Information

Course Director/Instructor

Dr. Hugo Hernández Fonseca. M.V., MSc., Ph.D.

Prof. Vet. Physiology, SVM

Office: Veterinary Office Building (SGU campus map: # 48)

Tel: 444 - 4175 ext 3328

email: hfonsec1@sgu.edu

Office hours are offered via Zoom meetings in two (2) modalities: “one-to-one individual/small groups” by appointment and “collective office hours” for the whole class every Friday at 11:00 am.

Instructor

Dr. Ulrike Zieger.

Prof. of Vet. Physiology, Visiting Professor, SVM

email: UZieger@sgu.edu

Office hours are offered via Zoom meetings in two (2) modalities: “one-to-one individual/small groups” by appointment and “collective office hours” for the whole class every Friday at 11:00 am.

II. Course location

Online location—Sakai resources: Panopto, Zoom meetings, Test & Quizzes, Lessons, Forum, Assignments, and others).

III. Prerequisite and/or co-requisite courses

Students must be enrolled in DVM term 2.

IV. Required resources

Visit the following link regarding the required computer specifications to use ExamSoft.

<https://mycampus.sgu.edu/group/office-of-institutional-advancement/examsoft1>

V. Recommended resources

The following textbooks are recommended:

- Physiology of Domestic Animals by O.V. Sjaaastad, K. Hove & O. Sand, 3rd Edition; Scandinavian Veterinary Press, 2016. **This should be your main resource.**

- Pathways to Pregnancy and Parturition by P.L. Senger, 3rd edition, Current Concepts Inc., Washington State University, 2012. This textbook should be used as a supplement to the lecture material presented in Module 3 (Reproduction).

- A very detailed textbook and our physiology “Bible”: Guyton and Hall Textbook of Medical Physiology by JE Hall, 13th edition, Saunders Co, 2016.

- A very good, concise, (human) textbook, i.p. for visual learners, is: Principles of Anatomy and Physiology by G.J. Tortora & B. Derrickson, 15th edition, Wiley & Sons Inc., New York, 2016.

- A great book for those who want to go deeper into pathophysiology is: Color Atlas of Pathophysiology by S. Silbernagel & F. Lang, 3rd Edt, Thieme Publishers, N.Y., 2015.

- **Additionally, these two excellent and concise medical physiology textbooks, contain very well-designed diagrams and figures. They are available as E-books at SGU library:**

- Ganong’s Review of Medical Physiology by Barrett KE, Barman SM, Boitano S, Brooks HL. 25th edition, McGraw-Hill Education., 2016.

<https://periodicals.sgu.edu/login?url=https://accessmedicine.mhmedical.com/book.aspx?bookid=1587>

- Medical Physiology: The Big Picture by Kibble JD, Halsey CR. McGraw-Hill Education., 2015.

<https://periodicals.sgu.edu/login?url=https://accessmedicine.mhmedical.com/book.aspx?bookid=1291>

If you have any concerns or problems accessing these resources, contact Suzanne Paparo spaparo@sgu.edu

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

In the DVM program, veterinary physiology is covered by two courses: ANPH512/DVM 1 and ANPH513/DVM2. Both courses focus on the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of animals, commensurate with the requirements for a physician providing primary care to a variety of veterinary patients. Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice. The ANPH513 course covers the following systems: metabolism, endocrinology, reproduction, and nervous system (i.p. the sensory nervous system). This course also contains independent group work, in which students are exposed to clinical case studies and give short oral and written presentations. Students share responsibility for a collectively earned group grade and should demonstrate professional behavior including communication and team-working skills.

IX. Course-level outcomes

The goal of the Physiology II course is to introduce fundamental concepts of the following systems of common domestic animals: metabolism, endocrinology, reproduction, and nervous system (i.p. the sensory nervous system). Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice. This course prepares students for subjects taught in Clinical Pathology, Pathology, and Internal Medicine. Working at times in groups and sharing responsibility for a collectively earned group grade will encourage demonstration of professional behavior and team-working skills.

Course-level Learning Outcomes

The Vet. Physiology II course is a continuation of the Vet. Physiology I course. Both courses form a unit and address the same general course objectives. Upon successful completion of the Veterinary Physiology II course, students should be able to:

CLO 1. Metabolism-Concepts: Describe the physiological functions of the metabolism of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 2. Metabolism-Clinical: Apply the acquired knowledge of metabolism to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 3. Endocrinology-Concepts: Describe the physiological functions of the endocrine systems of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 4. Endocrinology-Clinical: Apply the acquired knowledge of the endocrine system to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 5. Reproduction-Concepts: Describe the physiological functions of the reproductive systems of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 6. Reproduction-Clinical: Apply the acquired knowledge of the reproductive systems to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO 7. Neurophysiology -Concepts: Describe the physiological functions of the somatic and special sensory systems, the main motor systems and main CNS sections of healthy animals and how these systems contribute to whole-body homeostasis.

CLO 8. Neurophysiology -Clinical: Apply the acquired knowledge of neuroscience II to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

CLO-9. Work effectively in a team when preparing and discussing group assignments, take responsibility for the team's performance, and present team-allocated tasks to a broader audience in a professional manner

X. Lesson-level outcomes

Detailed lesson-level outcomes have been designed for every lecture topic and are found in a separate pdf appended to this syllabus.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcomes (CLOs) #	SGU-SVM Program Level Outcomes (PLOs)
1, 3, 5, 7	1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2, 4, 6, 8	2. Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
2, 4, 6, 8	3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.
2, 4, 6, 8	4. Explain the relationship between disease processes and clinical signs.

9	12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
9	14. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.

XII. Course Schedule

The lecture schedule is appended at the end of the syllabus document

XIII. Grading and assessment policy, and grading rubrics

1. Examinations:

There will be 3 modular examinations as listed in the table below: Midterm, Quiz, and a Final. The Final exam will also contain a comprehensive component. Modular examinations expect a student to demonstrate in-depth, detailed knowledge about the material covered, including integration of basic concepts. Detailed study objectives are included in each handout. The comprehensive examinations serve to reinforce the acquired knowledge and will focus on broader concepts and clinical applications. All examinations are sequestered. Exams may contain multiple choice (single best answer), true/false, and fill-in blanks. Examination questions come from material covered in lectures, handouts, and any other sources the instructors indicate. All rules and regulations concerning examinations including EXAMSOFTE are detailed in the SGU Student manual.

2. Assignments

Group assignments will be given at the beginning of each Zoom session. These assignments could include short clinical scenarios and/or analysis of basic biomedical functions, which serve to apply and reinforce the taught material and to stimulate students to collaborate professionally. The whole class will attend four (4) mandatory synchronous Zoom sessions (see course schedule) in the term. The class will be divided by the course director into groups, previous to the first session. Each group will be in a *Zoom Breakout Room* for 30-45 minutes and will discuss the assignments using the content discussed in the lecture recordings and any other material either provided by the instructor or found by the students. During the session, each group must write down the answers to the assignments. Thereafter, groups will be randomly called upon to present their answers to these assignments and to answer additional questions related to the topic. Groups will choose their presenter for the session. A different presenter must be chosen in each assignment presentation.

Because assignments differ greatly in their degree of difficulty, presentations will be marked as pass/fail based on the correctness of the answers, the ability to answer related questions, and the student's professional behavior during the presentation.

Every group must submit a written report of each assignment in Sakai within one (1) hour after the Zoom session, following the instructions provided on the weekly checklist.

Attendance/Participation Policy

Every group must present at least once during the assignment sessions and pass the oral presentation. Every group must submit four (4) written reports and must pass three (3) out of four (4) reports. If a group passes, each member will receive 15 points; if a group fails, no points will be given to any member.

Lecture or Zoom session attendance policy: this course has designed four (4) mandatory Zoom (synchronous) sessions that will be used to analyze and discuss the modular group assignments. Failure to participate in 75% of the mandatory Zoom sessions will imply the loss of the points allocated to this activity. The scheduling of the Zoom (synchronous: 11:00 am, AST) sessions was designed considering the time zones of the majority of the students, however, it is fully understood that this might represent a limitation to some students located in other time zones. Therefore, if you know in advance that you have any limitation to attend these synchronous activities, please contact the course director during the first week of activities.

Grading scale

The assessment schedule and grading scheme are as follows:

Assessments	Content. Lecture recording numbers	Date	Points
Midterm (ExamSoft)	Lectures 1-18 = metabolism and endocrine	Oct 12 at 11 a.m. (AST)	45
Quiz (Sakai)	Lectures 19-28 = reproduction	Open Date: Tuesday, Nov 10 Due Date: Tuesday, Nov 17	15
Final (ExamSoft)	Lectures 1-41 = metabolism, endocrine, reproduction and neurophysiology	Dec 7 at 11 a.m. (AST)	75
Group Assignment (Zoom)		See the schedule	15
Total Points			150

Letter Grade	Percentage	Number Grade
A	89.5 - 100	4

B+	84.5 - 89.49	3.5
B	79.5 - 84.49	3
C+	74.5 - 79.49	2.5
C	69.5 - 74.49	2
D+	64.5 - 69.49	1.5
D	59.5 - 64.49	1
F	1- 59.49	0

XIV. Recommended study strategies

Every learner is different, and these are only general recommendations:

1. Pre-reading material before watching and interact with the lecture recording.
2. Revising lecture recording material weekly (24 hrs within the given lecture), ensuring that the material is understood.
3. For exam preparation, self-challenge is crucial: explain the learned material to yourself first without having to refer to your handouts and notes. Then work in small online groups and repeat this process. Vocalization is an important element to check and improve your own knowledge and understanding of concepts. Prepare yourself as if going into an oral exam. ***If you cannot explain it, you do not know it!***

XV. Instructor's expectations of the student

Students are always expected to adhere to the Professionalism Policy (see XVIII) and demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public.

The student is expected to review lecture recordings, assignments any other material indicated by the professor before zoom meetings.

Example: The student is expected to read the required material (Lecture recordings and other suggested materials) before zoom meetings.

XVI. Professionalism statement

The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards is detailed in the SGU student manual 2019/2020.

XVII. Attendance/Participation Policy

The policy relating to class attendance is detailed in the SGU 2019/2020 student manual.

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously

due to illness or other extenuating circumstances, proper notification procedures must be followed.

Lecture or Zoom session attendance policy: there are 4 mandatory Zoom (synchronous) sessions that will be used to analyze the modular group assignments. If a student misses a mandatory Zoom session, the course director must be immediately notified. Failure to participate in 75% of the mandatory Zoom sessions will imply the loss of the points allocated to this activity

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The Plagiarism Policy is detailed in the SGU Student Manual 2018/2019. Please note that "... materials (such as slides, handouts and audio/video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Reproduction in whole or in part is prohibited".

Please feel free to contact us if you have questions about the material, any concerns, or suggestions on how we can improve the Veterinary Physiology 2 course. We do have an open-door policy. Please make an office hour appointment via email at any time if you prefer to discuss some specific topics via a synchronous Zoom meeting.

- Appendix 1: Lecture Schedule Fall 2020. Dr. Hugo Hernandez Fonseca (HHF) & Dr. Ulrike Zieger (UZ).
- Appendix 2: Lesson Level Outcomes Fall 2020

LECTURE SCHEDULE AND CONTENT

ANPH513 / Vet. Physiology II / Schedule – Fall 2020		
Weeks	Lecture Recording #	Module 1. Metabolism (HHF)
1 17- 21 August	1	Introduction to Course & Major Metabolic Pathways: Carbohydrates
	2	Major Metabolic Pathways: Lipids
	3	Major Metabolic Pathways: Proteins
	4	Ruminant Metabolism: Review
2 24-28 August	5	Whole Body Metabolism: Absorptive & Post-Absorptive Phases
	6	Fasting & Starvation
	7	Liver Function & Bilirubin
	8	Thermoregulation
Module 2. Endocrinology (HHF)		
3 31 August 04 September	9	General Endocrine Mechanisms
	10	Hypothalamic-Pituitary Axis
	Assignment 1	<i>Group Assignment. Metabolism (Mandatory Zoom meeting: Friday Sep 04 at 11:00 am AST)</i>
4 07-11 September	11	Pancreas
	12	Pancreas: Insulin Functions
	13	Thyroid Gland
5 14-18 September	14	Thyroid Gland: T3 & T4
	15	Growth Hormone
	16	Adrenal Cortex: Glucocorticoids

6 21-25 September	17	Adrenal Cortex: Glucocorticoids & Mineralocorticoids
	18	Calcium-Phosphate Homeostasis
	Assignment 2	<i>Group Assignment. Endocrinology (Mandatory Zoom meeting: Friday Sep 25 at 11:00 am AST)</i>
		Module 3. Reproduction (HHF)
7 28 September 2 October	19	Male Reproduction
	20	General Concepts of Female Reproductive Cycle
	21	General Concepts of Female Reproductive Cycle
8 05-09 October		Midterms Week
9 12-16 October		Monday Oct 12 (11 a.m. AST). MIDTERM ANPH 513: Physiology II / Lectures 1-18 (45 pts)
	22	General Concepts of Female Reproductive Cycle
	23	General Concepts of Pregnancy and Parturition
10 19-23 October	24	Lactation
	25	Reproduction in the Sow and Cow
	26	Reproduction in the Mare
11 26-30 October	27	Reproduction in the Bitch
	28	Reproduction in the Queen
		Module 4. Neurophysiology (UZ)
	29	Revision (Nervous System anatomy, physiology I)

	30	Principles of Neurophysiology
12 02-06 November	31	Pain
	32	Pain
	Assignment 3	<i>Group Assignment. Reproduction (Mandatory Zoom meeting: Friday Nov 06 at 11:00 am)</i>
13 09-13 November	33	Proprioception
	34	Touch & Thermoreception
		Quiz: Lectures 19-28 (15 Points) Open date: Nov, 10 at 6:00 pm. Due date: Nov, 17 at 6:00 pm. Duration: 25 min
	35	Hearing
	36	Balance and Vision
14 16-20 November	37	Vision
	38	Conscious Motor Control
	39	Principals of Neurological Lesion Localization
	40	Principals of Neurological Lesion Localization
15 23-27 November	41	Principals of Neurological Lesion Localization
	Assignment 4	Group Assignment. Neurophysiology (Mandatory Zoom meeting: Friday Nov 27 at 11:00 am)
16 30 November 04 December		Final Exam Week
17 07-11 December		Monday Dec 07 (11 a.m. AST). FINAL EXAM ANPH 513: Physiology II /Lectures 1-41 (75 pts)

Lecture Learning Outcomes

LLO	Neuroscience
LLO-1	Describe sensory receptors and how a sensory stimulus is perceived, transduced, and transmitted via the 3-order neuron chain to the somato-sensory cortex
LLO-2	Define the term “pain”, and explain the concepts of nociceptors, their stimulation, and first vs. second pain.
LLO-3	Describe the main ascending pain pathways and the descending analgesia pathway including its activation.
LLO-4	Explain the difference between acute and chronic nociceptive pain and neurogenic pain.
LLO-5	Describe the major pathophysiological consequences of pain on the entire organism and how to manage pain in principle.
LLO-6	Know how an animal’s pain perception is tested and understand the difference between pain reaction and withdrawal reflex.
LLO-7	Correlate lesions within the pain pathways with clinical signs.
LLO-8	Describe the function and components of the sense of proprioception
LLO-9	Describe the pathways for conscious and unconscious proprioception
LLO-10	Evaluate an animal's proprioceptive sense and correlate lesions within the proprioceptive system with clinical signs.
LLO-11	Describe the function and components of the sense of touch including its ascending pathway
LLO-12	Evaluate the sense of touch (respectively pain) and its pathways using dermatomes, autonomous zones and the cutaneous trunci reflex and correlate lesions within this system to clinical signs.
LLO-13	Describe how the thermoreceptive system functions including the pit organ of snakes
LLO-14	Explain the function and stimulation of receptor cells in the special sensory system and the general transmission to the cortex via cranial nerves.
LLO-15	Describe the components of the eye including photoreceptors, transduction of light energy, color vision and adaptation to light intensity.
LLO-16	Describe the pathways for conscious vision and the PLR, and how both are tested.
LLO-17	Localize lesions within the visual system by interpreting test results of vision and PLRs.

LLO-18	discuss the importance and function of the parietal eye in some species
LLO-19	Describe the cochlea incl. spiral organ, and how sound frequency and loudness are transduced by hair cells and transmitted to the auditory cortex.
LLO-20	Discuss the principle of echolocation.
LLO-21	Describe how hearing is tested and discuss some common problems affecting hearing in animals.
LLO-22	Describe the components, functions and stimulation of the sense of equilibrium
LLO-23	Explain the vestibular pathway and how it activates physiological nystagmus and achieves balance.
LLO-24	Correlate lesions within the vestibular system with clinical signs.
LLO-25	Explain the components and functions of the sense of taste and smell incl. the vomeronasal organ
LLO-26	Describe the setup and functions of the upper motor neuron systems including the two main divisions: pyramidal and extra-pyramidal system.
LLO-27	Correlate lesions within the pyramidal and extrapyramidal motor systems to clinical signs (lesion localization).
LLO-28	Differentiate neurological deficit pattern of the 4 types of ataxia (lesion localization).
LLO-29	Recognize and explain the main neurological pattern deficits of the forebrain, brain stem and cerebellum (lesion localization).
LLO-30	Discuss the sequential effects and signs of mild to severe spinal cord compression including damage to the Lower Motor Neuron system.
LLO-31	Recognize and explain neurological pattern deficits typically seen with damage to the 4 functional sections of the spinal cord (lesion localization).
LLO	Metabolism
LLO-32	Explain key pathways of carbohydrate metabolism incl. Glc homeostasis.
LLO-33	Correlate disturbances of insulin and glc homeostasis to clinical signs

LLO-34	Describe key pathways of lipid metabolism including various fat transport forms in plasma.
LLO-35	Describe the special significance of the liver during lipolytic phases.
LLO-36	Describe key pathways of protein metabolism including urea formation.
LLO-37	Explain the basic pathophysiology of hepatic encephalopathy and its clinical signs.
LLO-38	Describe the concept of leakage enzymes and their significance as diagnostic parameters.
LLO-39	Describe how volatile fatty acids are metabolised in the ruminant
LLO-40	Summarize how metabolic disturbances arise and describe some examples (glycogenoses, lipidoses).
LLO-41	Analyse which hormones and metabolic pathways should be dominant in the absorptive vs. the postabsorptive phase
LLO-42	Analyse the metabolic events during fasting or starvation resulting in lipidemia, hepatic lipidosis and ketonemia; discuss underlying causes and clinical signs.
LLO-43	Summarize the main liver functions.
LLO-44	Describe the bilirubin pathway and the basic pathophysiology of jaundice including interpretation of bilirubin levels.
LLO-45	Explain how body temperature is created and regulated in homeothermic vs poikilothermic species.
LLO-46	Describe the pathophysiology of fever vs. hyperthermia and of hypothermia and frostbite.
LLOs	Endocrinology
LLO-47	Discuss the differences and similarities between the steroid and peptide hormone groups in terms of production, transport, action mechanism, half-life and control.
LLO-48	Explain how the hypothalamic-pituitary-endocrine axis functions.
LLO-49	Insulin & glucagon: describe the control mechanisms and main metabolic and tissue effects.

LLO-50	Explain the basic pathophysiology of Diabetes mellitus and correlate metabolic changes to clinical signs.
LLO-51	Thyroid hormones: describe the control mechanisms, synthesis, and main metabolic and tissue effects.
LLO-52	Explain the basic pathophysiology of hyperthyroidism, hypothyroidism and goiter and correlate metabolic changes to clinical signs.
LLO-53	Growth hormone: describe the control mechanisms, and main metabolic and tissue effects.
LLO-54	Explain the basic pathophysiology of growth hormone deficiency and excess and correlate metabolic changes to clinical signs.
LLO-55	Glucocorticoids: describe the control mechanisms, and main metabolic and tissue effects.
LLO-56	Explain the basic pathophysiology of hyperadrenocorticism and correlate metabolic changes to clinical signs.
LLO-57	Mineralocorticoids: describe the control mechanisms, and main effects on electrolyte, pH and water homeostasis.
LLO-58	Explain the basic pathophysiology of hyper- and hypoadrenocorticism, and correlate hormone dysfunction to clinical signs.
LLO-59	Ca and P homeostasis: describe the three controlling hormones, their interrelationship and main actions.
LLO-60	Explain the basic pathophysiology of compensatory hyperparathyroidism (chronic hypocalcemia) and acute hypocalcemia and correlate electrolyte changes to clinical signs.
LLOs	Reproduction
LLO-61	Describe the male's reproductive functions, i.p. puberty, hormonal control axis, effects of hormones on testicular function, development, metabolism and behavior.
LLO-62	Comment on the use / misuse of anabolic steroids and effects on male reproductive success
LLO-63	Explain which factors influence seasonal breeding in animals and how these factors can be used to manage breeding.
LLO-64	Describe puberty and the reproductive hormonal axis in females

LLO-65	Describe in detail the morphological and hormonal events during the porcine estrous cycle
LLO-66	Explain the concept of induced ovulation and the pathophysiology of permanent estrus in ferrets
LLO-67	Correlate estrous cycle events to the endometrial cycle, metabolic events and reproductive behavior
LLO-68	Explain adrenal disease in ferrets including clinical signs.
LLO-69	Describe the principle of "establishment of pregnancy" and the importance and source of progesterone in maintaining pregnancy
LLO-70	Describe the sequence of hormones and events that contribute to parturition.
LLO-71	Describe how the mammary gland develops, how lactogenesis is initiated and lactation is maintained.
LLO-72	Explain why bST is used in dairy systems and what its dangers are
LLO-73	Discuss aspects of the estrous cycle and gestation that are specific to sows, cows, mares, queens and bitches
LLO-74	Discuss some common hormonal applications and disorders relating to reproduction.
Group Assignments	
LLO-75	Apply all concepts taught in Physiology-2 to basic clinical cases, interpreting normal vs. abnormal function, correlating basic pathophysiology processes and clinical signs
LLO-76	Work effectively in a team, taking responsibility for each other and a shared performance.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY
VETERINARY CLINICAL TOXICOLOGY SYLLABUS (2 credits)
ANPH520 TERM 6
Fall 2020

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I. Course Faculty and Staff Information

The course director is Prof. Dr. Arno H. Werners DVM, MEd, PhD, DECVPT (awerners@sgu.edu). Office hours will be via Zoom and as indicated in the schedule and in the “Weekly Course Plan” tab on Sakai.

Lecturers in the course are Associate Professor Dr. Kamashi Kumar BVSc & AH, MVSc, PhD (kamashikumar@sgu.edu), Assistant Professor Dr. Talia Guttin VMD, DACVIM (tguttin@sgu.edu) and Prof. Dr. Arno H. Werners.

II. Course location

All lectures will be delivered/covered virtually. We will use the “Weekly Course Plan” tab on Sakai to make sure that you keep up with the course material. Links will be available on this page to the learning materials for that week and these include Panopto recordings, lecture slides, short video’s of more complicated aspects of veterinary toxicology, assignments, formative assessment and additional reading

III. Prerequisite and/or co-requisite courses

To be able to successfully participate in and complete this course, a good understanding of basic pharmacological principles, pathophysiological principles, disease processes, as well as (bio-) chemistry is required. Students therefor will have to have successfully completed the first 5 terms of the DVM curriculum.

IV. Required resources

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only and will not be available as a print-out. The slides will be accessible for digital note taking. For certain subjects, lecturers may decide to include scientific articles or chapters from reference books in the study material. These will also be made available electronically on Sakai and are subject to questions on assessments. All lectures will be available via Panopto recordings: the link is published on the Sakai site and on the “Weekly Course Plan” tab on Sakai. There are no other required resources for this course, however, the following book can be used as reference: “Veterinary Toxicology. Basic and Clinical Principles, 2nd edition; Ramesh C. Gupta editor; Academic Press”.

V. Recommended resources

There are no recommended resources, other than the book mentioned above (“Veterinary Toxicology. Basic and Clinical Principles, 2nd edition; Ramesh C. Gupta editor; Academic Press”).

VI. Special accommodation

1. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
2. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None.

VIII. Course rationale

A vast number of substances potentially toxic to animals exist, including pesticides, household cleaning products, agricultural chemicals, automotive products, human prescription and non-prescription drugs, herbal remedies, mycotoxins, and poisonous plants and animals. With such huge numbers of potential toxins, it is impossible for veterinarians to be knowledgeable about all of them. But because some poisonings can cause illness or even death within only minutes to hours after exposure, immediate access to reliable information on diagnosis and treatment is essential. Often intoxications involve new drugs or chemical products for which very little or no published veterinary toxicity data is available. Standard veterinary medical textbooks usually include information on only the more common toxins. Even texts devoted specifically to toxicology cannot provide information on all toxins in all species. Information gained from product manufacturers or human poison control centers often pertains to human exposures only. Because of wide metabolic and physiological differences between species, it is rarely appropriate to extrapolate toxicity data from humans to other species. Veterinary toxicologists at veterinary colleges can provide valuable information on many toxicants, but as with many manufacturers, are often available only during routine office hours. An other important source are the different animal poison control centres. Therefore, it is important that veterinarians are aware of the variety of additional toxicological information sources available.

IX. Course learning outcomes

In this course students will develop a proficient working knowledge of toxicological principles, including toxicological testing and the effects of toxins on

organ systems, several common toxins in different animal species and practical approaches to the animal that presents with an intoxication.

Upon successful completion of this course, the student will be able to:

1. Compare and contrast veterinary regulatory toxicology and veterinary clinical toxicology.
2. Analyse and explain in a general sense how and where toxins act at the molecular/cellular/physiologic level (toxicodynamics).
3. Articulate and apply knowledge of toxin absorption, bioavailability, distribution, metabolism and excretion (including bio-activation and bio-inactivation), and judge the effects of exposure on the clinical signs observed (toxicokinetics).
4. Integrate toxicokinetic and toxicodynamic information to formulate:
 - A differential diagnosis
 - The importance of sample collection
 - Additional diagnostic tests
 - A prognosis
5. Predict and recognise major intoxications in the different veterinary species, including toxic plants and mycotoxins.
6. Design the most appropriate therapeutic protocol for common and important intoxications using knowledge of species, breed, age, sex, disease states, genetics and other factors, and integrate pharmacological therapy in a multimodal treatment plan (i.e., surgery, nutrition, management, etc).
 - Outline the desired response to pharmacological therapies as well as reflect on the most appropriate methods to monitor for treatment success.
7. Effectively communicate information about intoxications and therapeutic plans to clients (translate information to lay person, educate stakeholders) , technical staff, and colleagues and ensure consistency with and cognizance of demographical, socio-economical and cultural considerations.

X. Lesson learning outcomes

Please refer to [table 1](#) in the appendix for the lesson learning outcomes.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies

Please refer to [table 2](#) in the appendix for the alignment of course learning outcomes with program learning outcomes.

XII. Course schedule

Please refer to [table 3](#) in the appendix for the course schedule. A detailed outline of the course can also be found on the Veterinary Toxicology page of Sakai.

XIII. Grading and assessment policy, and grading rubrics

Grading scale

PERCENTAGE SCORE	LETTER GRADE
> 89.5%	A
84.5 - 89.5	B+
79.5 - 84.4	B
74.5 - 79.4	C+
69.5 - 74.4	C
64.5 - 69.4	D+
59.5 - 64.4	D
< 59.4	F

Assessment policy

Knowledge of the subject will be tested formatively throughout the term and summatively in a final examination. All the material presented (notes, articles, book chapters, lecture slides) is subject in all the assessments, unless the lecturer specifically indicates differently. The final exam (60 questions; see breakdown in table below) will cover all material presented during the term. The final grade will consist off the mark for the [clinical toxicology assignment](#) (10%), the SAQs (25%), the [plant toxicity assignment](#) (15%), [the peer evaluation](#) (5%) and the mark for the final examination (45%).

Assignments are completed by group. Group allocation will be announced through Sakai at a later date. The topic for each group for both assignments can be found in [table 4](#) in the appendix.

Three (3) points per assignment will be taken from the total for the assignments and the peer assessment when they are not submitted on time.

The format of the questions on the examinations will be Multiple Choice Questions (MCQs) and Short Answer Questions (SAQs).

The lecturers will very carefully design the exams. The most current SGU examination policy and assessment guidelines are adhered to and the examination

policy is leading in all issues that might arise. Students are required to follow the instructions of the course director and the proctors in all matters. Discussions and reviews of/on exams and examination material can only take place within the first seven (7) days after completion of the examination. Comments and challenges regarding the final examination should be communicated through the designated SGA student representative within 24 hours after the end of the examination.

Assessment	% of total grade	Total # of points	Subjects
Clinical toxicology assignment	10%	30	See group assignments (appendix table 4) Rubric in appendix table 5
Plant toxicology assignment	15%	33	See group assignments (appendix table 4) Rubric in appendix table 6
SAQs	25%	48 (2 points per question)	See detailed course schedule (appendix table 3)
Peer evaluation	5%		1 evaluation per group (appendix table 7)
Final examination	45%	60	2 questions per lecture hour (Introduction lecture to the course not included) = total of 28 questions 1 question per clinical toxin. Document will become available after week 8

XIV. Recommended study strategies

This course will be assessed in a midterm examination, a comprehensive final examination, clinical intoxication presentations, peer evaluations and the assignment. It is essential to stay on top of the study material throughout the course. To be able to do so, it is advised to follow the following steps:

The basic toxicological principles are very similar to the pharmacological principles and hence a good understanding of basic pharmacology will be very helpful when studying this information.

Find common themes amongst the different toxins; a good first step is to look at the organs affected by different toxins. Compare and contrast the toxins and make your own charts with the different aspects of certain toxins.

XV. Instructor's expectations of the student

Students are expected to familiarise themselves with the material before coming to class and actively participate in the discussions in class.

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behaviour. The Code of Conduct includes student comportment and the honour code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that it sees fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outlined in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVIII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

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Students who have technical issues during the examination MUST inform the Course Director (awerners@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

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XX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honour Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarise themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarise themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XXI. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXII. Appendices

Table 1: Lesson learning outcomes

Topic	Lesson learning outcomes	Course learning outcomes
General toxic principles (INT)	<ol style="list-style-type: none">1. Compare and contrast toxins and toxicants2. Compare and contrast the spectra of undesired effects3. Compare and contrast the different Adverse Drug Reactions (ADRs)4. Describe the importance of species differences5. Differentiate between acute-subacute and chronic toxicities	7, 8, 9
Toxicokinetics (TK)	<ol style="list-style-type: none">1. Describe common toxicokinetic principles2. Interpret toxicokinetic data and draw conclusions regarding the potential clinical effects3. Compare and contrast the different effects of routes of exposure and its clinical repercussions4. Interpret dose-response relationships and put them into a clinical perspective	2, 3

Topic	Lesson learning outcomes	Course learning outcomes
Terminology and Toxicological testing (TEST)	<ol style="list-style-type: none"> 1. Compare and contrast the use of different <i>in vitro</i> and <i>in vivo</i> toxicological tests 2. Describe the differences between experimental and clinical toxicology when evaluating different toxicological tests 3. Describe the purpose of the different toxicological tests and evaluate their outcomes 4. Evaluate the differences between acceptable daily intake and maximum residue level, incorporating all relevant parameters 5. Describe the rationale and principles of additional toxicological tests 6. Evaluate the importance of trans-generational toxicity 7. Articulate the role biotransformation plays in the toxicity of chemicals 	6, 8
Carcinogenicity and Mutagenicity (MUT)	<ol style="list-style-type: none"> 1. Compare and contrast the different <i>in vitro</i> tests used to evaluate carcinogenicity, mutagenicity or genotoxicity 2. Describe the place these tests have in the approval of (veterinary) medicinal products 3. Evaluate the effects of ochratoxin A as a mutagenic agent 	1, 2, 3, 6

Topic	Lesson learning outcomes	Course learning outcomes
Hepatotoxicity and Intervention (HEP)	<ol style="list-style-type: none"> 1. Reiterate the importance of biotransformation, including species differences in drug metabolising enzymes 2. Compare and contrast the effects of toxins on different parts of the liver 3. Describe the different toxic responses of the liver (biotransformation dependent and independent toxicity) 4. Compare and contrast the effects of different toxins on the liver, including zonal effects 5. Describe the different intervention strategies and compare and contrast their mechanisms of action, advantages and disadvantages 	1, 2, 3, 4, 5, 9
Cardiotoxicity (CARDIO)	<ol style="list-style-type: none"> 1. Compare and contrast the different cardiotoxic chemicals, their mechanisms of action, clinical signs and therapeutics 	1, 2, 3, 4, 5, 9
Nephrotoxicity (KID)	<ol style="list-style-type: none"> 1. Reiterate the importance of the kidney in biotransformation and elimination of chemicals 2. Compare and contrast the different chemicals that have an effect on the kidney, including their mechanism of action, clinical signs and therapeutic interventions 	1, 2, 3, 4, 5, 9

Topic	Lesson learning outcomes	Course learning outcomes
Mycotoxins (MYCO)	<ol style="list-style-type: none"> 1. Compare and contrast pre-harvest and post-harvest fungal infections and the implications for prevention 2. Describe the general characteristics of fungal toxins 3. Describe the factors that determine fungal growth 4. Compare and contrast mycoses, mycotoxicoses and toxicoinfections 5. Compare and contrast the different mycotoxins that play a role in animal health, including mechanisms of action, clinical signs and therapeutic interventions 	1, 2, 3, 4, 5, 9
Immuno (IMM)- and Neurotoxicity (NEURO)	<ol style="list-style-type: none"> 1. Compare and contrast different neuropathies (including excitotoxicity) 2. Identify neurotoxins based on clinical signs/pathology results and clarify their mechanism of action 3. Clarify how chemicals elicit their effects on the immune system 4. List relevant immunotoxicities and immunological reactions in veterinary medicine and describe the underlying mechanisms 	1, 2, 3, 4, 5, 9
Plant Toxicology (PLANT)	<ol style="list-style-type: none"> 1. Compare and contrast mechanism of action, the clinical signs and the treatment modalities 2. Compare and contrast plant toxins and their effects on different organ systems. 	1, 2, 3, 4, 5, 9

Topic	Lesson learning outcomes	Course learning outcomes
Clinical Toxicology of Food Producing Animals (CT FA)	<ol style="list-style-type: none"> 1. Recognise intoxications in food producing animals based on presented history and clinical signs 2. Clarify mechanisms underlying the clinical signs observed 3. Determine what samples should be taken for diagnostic purposes and how these samples should be stored and transported 4. List the most relevant intoxications and adverse effects of Veterinary Medicinal Products (VMPs) 5. Create a therapeutic protocol to treat common intoxications 6. Provide information on the legal restrictions when treating intoxications in food producing animals 	7, 9

Topic	Lesson learning outcomes	Course learning outcomes
Clinical Toxicology of Companion Animals (CT CA)	<ol style="list-style-type: none"> 1. Recognise intoxications in companion animals and clarify the underlying mechanisms responsible for the clinical signs observed 2. Integrate previous knowledge of companion animal pathophysiology and toxicology to diagnose intoxications 3. Create a therapeutic protocol to treat common intoxications 4. Assemble patient information to construct a differential diagnosis (this includes determining which samples to take, how to store and transport them) 	7, 9
Clinical Toxicology of the Equine Patient (CT EQ)	<ol style="list-style-type: none"> 1. Compare and contrast treatment modalities for equine intoxications 2. Design specific treatment for individual cases 3. Integrate previous knowledge of equine pathophysiology and toxicology to diagnose intoxications 4. Assemble patient information to construct a differential diagnosis (this includes determining which samples to take, how to store and transport them) 	7, 9

Table 2: Alignment of Course Learning Outcomes with Program Learning Outcomes/Competencies

	Course learning outcomes	Program learning outcomes
1	Compare and contrast veterinary regulatory toxicology and veterinary clinical toxicology.	
2	Analyse and explain in a general sense how and where toxins act at the molecular/cellular/physiologic level (toxicodynamics).	A3: Recall, understand, and adequately utilise knowledge of aetiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations
3	Articulate and apply knowledge of toxin absorption, bioavailability, distribution, metabolism and excretion (including bio-activation and bio-inactivation), and judge the effects of exposure on the clinical signs observed (toxicokinetics).	A2: Analyse homeostasis and disturbances of basic structures and functions of healthy animals A3: Recall, understand, and adequately utilise knowledge of aetiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations A6: Apply multi-disciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine

	Course learning outcomes	Program learning outcomes
4	<p>Integrate toxicokinetic and toxicodynamic information to formulate:</p> <ol style="list-style-type: none"> A differential diagnosis The importance of sample selection and collection Additional diagnostic tests A prognosis 	<p>A6: Apply multi-disciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine</p> <p>C1: Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis</p>
5	<p>Predict and recognise major intoxications in the different veterinary species, including toxic plants and mycotoxins.</p>	<p>A3: Recall, understand, and adequately utilise knowledge of aetiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations</p>
6	<p>Design the most appropriate therapeutic protocol for common and important intoxications using knowledge of species, breed, age, sex, disease states, genetic and other factors, and integrate pharmacological therapy in a multimodal treatment plan (i.e., surgery, nutrition, management etc.).</p> <ol style="list-style-type: none"> Outline the desired response to pharmacological therapies as well as reflect on the most appropriate methods to monitor for treatment success 	<p>C2: Create comprehensive treatment plans</p>

	Course learning outcomes	Program learning outcomes
7	Effectively communicate information about intoxications and therapeutic plans to clients (translate information to lay person, educate stakeholders) , technical staff, and colleagues and ensure consistency with and cognizance of demographical, socio-economical and cultural considerations.	C8: Demonstrate and model effective client communication and ethical conduct

Table 3: Course schedule

Week	Dates	Topics and materials covered	Scheduled activities
Week 1	17 Aug-21 Aug	Introduction documents 1. Introductory lecture 2. Explanation clinical toxicology assignment+rubric 3. Explanation plant toxicology assignment+rubric	
Week 2	24 Aug-28 Aug	1. Panopto lecture: General toxic principles 2. Working on clinical toxicology assignment	Monday August 24 12.30-1.30pm AST Zoom of- fice hour
Week 3	31 Aug-4 Sept	1. Panopto lecture: Regulatory versus clinical toxicology 2. 1st assessment	Sakai SAQs: due date Satur- day September 5th 5pm AST 2 General toxic principles 2 Regulatory versus clinical toxicology
Week 4	7 Sept-11 Sept	1. Panopto lecture: Intro to clinical toxicology 2. Working on clinical toxicology assignment	Monday September 7th 12.30-1.30pm AST Zoom of- fice hour
Week 5	14 Sept-18 Sept	1. Panopto lecture: Toxicokinetics 2. 2nd assessment	Sakai SAQs: due date Satur- day September 19th 5pm AST 2 Toxicokinetics 2 Intro to clinical toxicology
Week 6	21 Sept-25 Sept	1. Panopto lecture: Genotoxicity, carcinogenicity and mutagenicity 2. Working on plant toxicology assignment	Monday September 21st 12.30-1.30pm AST Zoom of- fice hour
Week 7	28 Sept-2 Oct	1. Panopto lecture: Introduction to plant toxicology 2. 3rd assessment	Sakai SAQs: due date Satur- day October 3rd 5pm AST 2 Introduction to plant toxi- cology 2 Genotoxicity, carcinogeni- city and mutagenicity

Week	Dates	Topics and materials covered	Scheduled activities
Week 8	5 Oct-9 Oct	<ol style="list-style-type: none"> 1. Panopto lecture: Introduction to cardiovascular toxicology 2. Working on plant toxicology assignment 	<p>Monday October 5th 12.30-1.30pm AST Zoom of- fice hour</p> <p>Saturday October 10th 5pm AST: due date for clinical toxicology assignment</p>
Week 9	12 Oct-16 Oct	<ol style="list-style-type: none"> 1. Panopto lecture: Introduction to gastrointestinal toxicology 2. 4th assessment 	<p>Sakai SAQs: due date Satur- day October 17th 5pm AST</p> <p>2 Intro to CVS toxicology 2 Intro to GI toxicology</p>
Week 10	19 Oct-23 Oct	<ol style="list-style-type: none"> 1. Panopto lecture: Introduction to renal toxicology 2. Working on plant toxicology as- signment 	<p>Monday October 19th 12.30-1.30 pm AST Zoom of- fice hour</p>
Week 11	26 Oct-30 Oct	<ol style="list-style-type: none"> 1. Panopto lecture: introduction to neurotoxicity 2. 5th assessment 	<p>Sakai SAQs: due date Satur- day October 31st 5pm AST</p> <p>2 Intro to renal toxicology 2 Intro to CNS toxicology</p>
Week 12	2 Nov-6 Nov	<ol style="list-style-type: none"> 1. Panopto lecture: Introduction to liver toxicity 2. Working on plant toxicology as- signment 	<p>Monday November 2nd 12.30-1.30pm AST Zoom offi- ce hour</p>
Week 13	9 Nov-13 Nov	<ol style="list-style-type: none"> 1. Panopto lecture: Introduction to mycotoxins 2. 6th assessment 	<p>Sakai SAQs: due date Satur- day November 14th 5 pm AST</p> <p>2. Intro to liver toxicology 2 Intro to mycotoxins</p>
Week 14	16 Nov-20 Nov	<ol style="list-style-type: none"> 1. Top 10 plant toxins 2. Working on plant toxicology as- signment 	<p>Monday November 16th 12.30-1.30pm AST Zoom of- fice hour</p>
Week 15	23 Nov-27 Nov	<ol style="list-style-type: none"> 1. Top 10 plant toxins 2. Working on plant toxicology as- signment 	<p>Saturday November 28th 5pm AST: due date for plant toxicology assignment</p>
Week 16	30 Nov-4 Dec	Tuesday Dec 1st: Final examination	<p>Tuesday December 1st 12.00-2.00pm AST Final examination</p>

Table 4: The topics for the assignments

Group	Clinical toxicology assignment	Plant toxicology assignment
1	Anticoagulant rodenticides	A lactating cow with fever and bleeding from different orifices
2	Ionophores horses versus cattle	A horse with depression, anorexia and discoloured urine
3	Nitrate/nitrite	A dairy cow with respiratory problems
4	Crotalid envenomation	A cow at pasture with colic, hemorrhagic diarrhoea and anorexia
5	Blister beetle	A cow at pasture with respiratory and cardiovascular abnormalities
6	Oak horses versus cattle	A boxer dog presented with general weakness, anorexia and clinical signs of CV collapse
7	NSAIDs in horses	A lactating cow presents with arrhythmias and peripheral oedema
8	NSAIDs in companion animals	Piglets presenting with muscular weakness, respiratory distress and cardiac failure
9	Grapes and raisins	A horse presents with laminitis
10	Ethylene glycol	Cattle presenting with watery to mucoid diarrhoea and decreased rumen motility

11	Arsenic	A pig presenting with anorexia, diarrhoea, colic and depression
12	Ochratoxin A	A horse presenting with severe colic signs
13	Fumonisin	A Labrador pup presents with swelling of lips, tongue and muzzle
14	Organophosphates	A bull presents with frothy salivation and an inflamed muzzle
15	Marijuana	A stabled horse presents with frothy salivation and depressed
16	Avermectins in MDR1 deficient dogs	On a sheep farm animals present depressed with excessive salivation and other GI-tract clinical signs
17	Lolitrem B in horses	Free ranging sheep with colic
18	Box elder tree	Dog with periodic episodes of persistent vomiting
19	Metronidazole	Sheep presenting with anorexia, lethargy and depression
20	Cymbalta®	Phytotoxicity
21	Aflatoxin B1	A horse presenting with a saw-horse stance, staggering and trembling
22	Acetaminophen	An ataxic horse with difficulty chewing

23	Xylitol	Cattle with neurological signs such as head pressing
24	Pyrrrolizidine alkaloids	Phytotoxin causing clinical signs of the nervous system
25	T2 toxin	Gradual but progressive onset of muscle weakness in a cow
26	Zearalenone	A horse with a fixed facial expression
27	Fescue in horses	Seizures and other neurological signs in a cow
28	Deoxynivalenol	Crooked calf disease
29	Bufo toad	Gradual weight loss, weakness and anorexia in a cow
30	Chocolate	Acute pneumonia in a group of cattle
31	Gentamicin	Abrupt onset of weakness and flaccid paralysis in a cow
32	Serzone®	Erythema, blisters, pruritus and swelling in a group of cows

Table 5: Rubric for clinical toxicology assignment

In this assignment you need to picture yourself as an ER doctor that is presented with a patient with a toxicity. You forgot what you learned about this and have just a few minutes to look up how to treat this case.

We want you to answer the following questions in the assignment:

1. What does the toxin do to the body. We need a general answer here (kidney failure; cardiac arrhythmias) and not a large discussion on the pathophysiology of this particular toxin
2. Present the most prominent clinical signs (list a maximum of 5)
3. Shortly describe the typical lab findings
4. Is there a specific test for it? Differentiate between a stable-side test you can perform in practice and tests that require sample submission to a specialised laboratory
5. Describe the treatment protocol and differentiate between general treatment (decontamination, cathartics etc.) and specific treatment.
6. What is the prognosis after ingestion of this toxin?
7. Describe monitoring for that toxin (when the animal presents without clinical signs and for monitoring of treatment success).
8. Give 2-3 references for the information your presented. References can only include peer reviewed articles or books, should be relevant and the latest information on the subject.
9. Write a short layman's summary for the owner, where you describe the diagnosis and why it leads to these clinical signs; the tests you performed to aid in making the diagnosis; why you are treating the animal with these specific drugs and what the outlook is for the coming days.
10. The **total** word count should not exceed 500 words.

	Insufficient	Developing	Exceptional	Points total
Points	1	2	3	
Summarises the effects of the toxin on the body	Question not answered, or only partly	Most effects are mentioned; answer is too long or too short	All effects of the toxin on the body are mentioned in a concise way	

	Insufficient	Developing	Exceptional	Points total
Presents the most prominent clinical signs	Some clinical signs are mentioned. Prominent clinical signs are missing. Answer is to long or to short	Most clinical signs are mentioned. Answer is to short or to long	All prominent clinical signs are presented in a concise way	
Identifies common lab findings	Some lab findings are mentioned, not all are relevant. Answer it to long or to short	Most lab findings are mentioned. Answer to short or to long	All common lab findings are mentioned in a concise way	
Describes the specific tests available for the toxin	Only some tests are mentioned and essential tests are not discussed	Most tests are mentioned. Explanations are to lengthy or to short	All tests are mentioned and described in a concise manner	
Summarises general treatment for the toxin and specific treatment if available	Only some parts of the treatment plan are discussed. Essential elements are left out. Answer to lengthy or to short	Most aspects of the treatment plan are discussed. Some information is lacking, or to much information is given	All aspects of the treatment plan are discussed in a concise manner	
Briefly describes the prognosis for an animal with this intoxication	Answer to short or to lengthy; no explanation of the reason behind the prognosis	Some aspects of the prognosis are missing. Explanation to short or to lengthy	Concise and precise explanation of the prognosis for this animal	
Describes the monitoring for this patient	Incomplete information on monitoring; question not answered. To lengthy or to short explanation of monitoring	Close to complete information on monitoring. Some essential items missing. To lengthy explanation of monitoring parameters	Complete overview of important monitoring parameters. Concisely written.	

	Insufficient	Developing	Exceptional	Points total
Summarises the findings for the owner	Lengthy explanation with a lot of jargon, not to the point, essential aspects of the case work-up, treatment plan and prognosis are missing	Jargon used but understandable for laypersons. Some aspects of the case work-up, treatment plan and prognosis are missing	Concise explanation of the case work-up, treatment plan, monitoring and prognosis . Written in an understandable language for lay people	
Word count	Not adhered to the maximum word count		Adhered to the maximum word count	
References	Less/more references are used. References or sources not relevant	Not all references are relevant	Relevant references are used	
Total group score				
Feedback				

Table 6: Rubric for plant toxicology assignment

Adhere to the maximum word count (1000 words; this is a maximum word count, there is no minimum word count) as indicated for each section of the assignment. For grading see the rubric below. Please adhere to the following set-up for the assignment report.

The report must be submitted through Sakai before the due date in a PDF format

1. For each plant mentioned in the “differential diagnosis”, mention the species most commonly affected (this can be different animal species).

1. Compare and contrast the clinical signs of the different plants. Here we want you to interpret the hallmark clinical signs of the plants mentioned in the differential diagnosis and explain which of the clinical signs will help you determine what plant is causing the clinical signs. Based on the relevant clinical signs, what conclusion can be drawn?

1. Compare and contrast the lab findings of the different plants. Similar to the description of the clinical signs we want you to describe the most important lab findings (blood and/or urine) for each of the differential diagnosis and explain how you can differentiate between the plants to come to a most likely diagnosis. Based on the relevant lab findings, what conclusion can be drawn?

1. Provide and justify a treatment plan for each plant. Explain when there is no treatment.

1. Compare and contrast the prognosis of intoxication with each of the plants.

1. Final conclusion: explain what the most likely diagnosis is for the clinical signs presented in this case. Justify your choice by using the description of the clinical signs and lab findings. Describe your conclusions in lay-terms as if you are briefing an owner.

1. References: make sure you use relevant and reliable references. Mention only the most essential references and do not reference to many resources.

	Insufficient	Developing	Exceptional	Points
Points	1	2	3	
What species are most affected?	The correct species are not mentioned	Not all species are mentioned or too many species are mentioned	The correct species are mentioned	

	Insufficient	Developing	Exceptional	Points
Compare and contrast the clinical signs caused by the different plants	Mostly irrelevant or no clinical signs mentioned	Relevant (contrasting) clinical signs for some of the plants are mentioned	Major (contrasting) clinical signs for all plants are reported	
Conclusions	Conclusions are missing or inappropriate	Partly correct conclusions are drawn	Correct conclusions drawn based on the clinical signs	
Compare and contrast the lab findings for the different plants	Mostly incorrect or incomplete reporting of prognoses	Partially correct reporting of the prognoses	All correct prognoses reported and compared to each other	
Conclusions	Conclusions are missing or inappropriate	Partly correct conclusions are drawn	Correct conclusions drawn based on the lab findings	
Provide and justify briefly a treatment plan for each plant (general treatment and specific treatment)	No correct treatment plan provided	Partly complete treatment plan. Contains some incorrect assumptions	Complete and appropriate treatment plan	
Compare and contrast the prognosis for each of the plants on the differential diagnosis list	Mostly incorrect or incomplete reporting of prognosis	Partially correct reporting of the prognosis	All correct prognoses reported and compared to each other	
Conclusions	Conclusions are missing or inappropriate	Partly correct conclusions are drawn	Correct conclusions drawn based on the clinical signs	

	Insufficient	Developing	Exceptional	Points
Final conclusion. Explain what the most likely diagnosis is for the clinical signs presented in this case	Mostly incorrect justification of the diagnosis	Partially explains the justification for the diagnosis. Not all relevant facts are used to explain the findings	Complete and concise explanation of the justification for the diagnosis taking all aspects into account	
Word count	Not adhered to the maximum word count		Adhered to the maximum word count	
References	Too few or too many references are used. References or resources are not relevant	Not all references are relevant	Relevant references and resources are used	
Total group score				
Feedback				

Table 7: Peer assessment instructions and document

This peer assessment needs to be performed and submitted as a group! Please discuss (whatsapp, messenger, facetime) the 4 questions on this form and submit once consensus has been reached.

We ask for the contributions to both the “Toxins divide and conquer” as well as the “Plant toxicology” assignments.

Email me at awerners@sgu.edu for any questions or concerns.

1.Management of contributions. Complete the table below for each of the group members. Be honest and fair and come to a mutual agreement regarding each group member’s contributions. Place an “x” in the box that represents the group’s consensus regarding the individual member’s contributions.

Group number:	Contribution			
Student Name	Minor	Moderate	Major	Not contributed

- 1.Describe what went well when working on the assignments together.
- 2.What can be improved in future group work (comments for each of the group members)
- 3.What have we learned from working together?

The document needs to be signed by all group members. Only 1 document per group needs to be completed and submitted. Save the document as a PDF file and submit only the PDF file!



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
Veterinary Physical Diagnosis II (1 credit)
LAMS 501 Term 3
Fall 2020

I. **Course Faculty and staff Information**

Course Director:

Momoh Zainab DVM, MVPH

Clinical Instructor, Department of Large Animal Medicine and Surgery

Office Location: Large Animal Resource Facility (LARF) office blocks

Email: zmomoh@sgu.edu

Phone: 1473-444-4175 ext. 3236

Office Hours: Thursdays (Weekly) at **11 – 12noon** or email anytime with questions or concerns.

This course is a multi-teacher course with Faculty members from the Large Animal Department supporting the course director.

Additional lecturing Faculty: Inga Karasek, DVM ikarasek@sgu.edu

- II. **Course Locations:** Online self-directed learning modules (**LAMS 501 course website** on MyCourses SAKAI) with reading, lectures and videos.
- III. **Prerequisite and/or co-requisite courses:** Current third term SVM student
- IV. **Required resources:** Study material posted on MyCourses (Panopto and Zoom recordings, journal articles, lecture slides and lab resources)
Laptop with functional microphone and camera, and good internet access
- V. **Recommended resources:** Supplemental reading will be posted on SAKAI and students are recommended to read these.

Other recommended resources include:

- Large Animal Internal Medicine, 5th Edition by Bradford P Smith

- Material covered in previous courses [LAMS 502 (Clinical Orientation), ANPH 503 (Veterinary Anatomy II) and ANPH 513 (Veterinary Physiology II)]

Further resources will be discussed during this class.

VI. Special accommodation

- Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements: None

VIII. Course rationale: This 3rd term course is designed to instruct students in the fundamentals of physical diagnosis in the equine and bovine patient, utilizing a variety of diagnostic and system specific techniques serving as a bedrock course for additional clinical skills courses in term 6. And, to practice clinical reasoning while working a simulated case.

IX. Course Level Outcomes:

Upon successful completion of this course, the student will be able to:

- Discuss and Illustrate an advanced and complete physical exam on equine and bovine patients
- Identify and differentiate between normal and abnormal findings on PE especially related to gastrointestinal and musculoskeletal exams
- Determine an animal's age by examining dentition
- Safely illustrate handling of large animals
- Accurately perform medical math calculations
- Utilize basic clinical reasoning skills to work through a case

X. Lesson/Lab Level Outcomes

Title	Learning outcomes
LECTURES	
Introductory Lecture: Syllabus and Lab-level outcomes review	1. Describe in detail the different labs and expectation for the students before taking their respective quizzes
Medical Math Lecture	2. Recognize and be able to use different systems of measurement
	3. Convert metric units of measurements
	4. Convert units from one system of measurements to another
	5. Recording doses or amounts

Clinical Reasoning Lecture	6. Illustrating appropriate communication skills
	7. Transforming a client/owner's story into a meaningful clinical problem – a problem representation
	8. Display basic clinical reasoning with an unknown problem, signalment and chief complaint
	9. Discussing how to perform a thorough, focused history
	10. Prioritize diagnostic testing for a stimulated clinical situation
	11. Practice formulating a differential diagnosis, assessment and prioritized plan for the stimulated case
	12. Critically examine and reflect on your encounter to improve future performance
Paper Case Introductory Lecture	13. Describe in detail how the clinical case work-up will be conducted
LABS	
Bovine and Equine Physical Exam Lab	14. Describe and illustrate an advanced and complete physical exam on equine and bovine patients
	15. Determine an animal's age by examining dentition
	16. Identify and differentiate between normal and abnormal findings on physical exam
Bovine Simulation Lab	17. Describe how to halter a cow and illustrate basic knot tying skills
	18. Describe how to perform a California Mastitis Test
	19. Describe how to perform venipuncture in cows
	20. Accurately create a therapeutic plan for a cow focusing on medical math calculations and drug withdrawal times
Equine Musculoskeletal Lab	21. Describe and interpret how to perform a musculoskeletal exam on a horse
	22. Describe how to safely pick up a front and hind foot and identifying relevant hoof structures
	23. Understand the indications for and describe how to perform a hoof tester exam on a horse
	24. Understand the basics of lameness exam including grades and the procedures involved
	25. Appropriately describe how to apply a standard lower limb bandage on a horse
Bovine Gastrointestinal Lab	26. Describe how to perform a gastrointestinal specific physical exam on a bovine patient
	27. Be able to accurately describe how to auscultate the bovine abdomen and make a disease diagnosis based upon abdominal contour and/or ping location
	28. Be able to describe how to perform orogastric intubation and rumen fluid collection in the bovine patient including risks of this procedure
	29. Describe how to analyze and interpret results of rumen fluid analysis
	30. Determine an animal's age by examining dentition of both cows and horses

Equine Gastrointestinal (Simulation) Lab	31. Describe how to perform a gastrointestinal focused physical exam on an equine patient
	32. Understand the concept of “colic” and be able to describe the clinical signs, diagnostics and basic treatment involved in cases of colic including rectal exam, nasogastric intubation and abdominocentesis
	33. Be able to describe (recognize) equipment’s utilized during “work up” of a colicky horse including drugs

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course Level Outcome	SVM Program Level Outcomes
1. Discuss and illustrate an advanced and complete physical exam on equine and bovine patients	<p>A. Core Medical Knowledge</p> <p>1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>2. Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>B. Core Professional Attributes</p> <p>1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>1. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
2. Identify and differentiate between normal and abnormal findings on physical examinations especially processes related to gastrointestinal and musculoskeletal exams	<p>A. Core Medical knowledge</p> <p>2. Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>4. Explain the relationship between disease processes and clinical signs.</p> <p>7. Evaluate and analyse normal versus abnormal animal behaviour.</p> <p>B. Core Professional Attributes</p> <p>12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities</p> <p>C. Core Clinical Competencies (Skills)</p> <p>1. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
3. Determine an animals age by examining dentition	<p>A. Core Medical Knowledge</p> <p>1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p>

4. Safely illustrate handling of large animals	<p>A. Core Medical Knowledge</p> <p>1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>B. Core Professional Attributes</p> <p>12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
5. Accurately perform medical maths calculations	<p>C. Core Clinical Competencies (Skills)</p> <p>5. Analyse, design, and execute appropriate plans for medical case management.</p>
6. Utilize basic clinical reasoning skills to work through a case	<p>B. Core Professional Attributes</p> <p>1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.</p> <p>13. Demonstrate, evaluate, and model ethical and responsible behaviour in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>1. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p> <p>2. Create comprehensive treatment plans.</p> <p>5. Analyse, design and execute appropriate plans for medical case management.</p> <p>7. Design and execute plans for health promotion, disease prevention, and food safety.</p> <p>8. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p> <p>27. Demonstrate and model effective client communication and ethical conduct.</p>

XII. Course Schedule

Week 1 (17 th August to 21 st August)	Faculty	Date and Time / Lecture hours
Introductory Lecture: Syllabus and Module level outcomes review (Mandatory Attendance)	Dr. Momoh	Live Zoom Session Thursday August 20th 11am -12noon AST
Medical Math Lecture and Assignment opened on SAKAI (Mandatory Attendance)	Dr. Karasek	Live Zoom Session Friday August 21st 10am -11am AST

Week 2 & 3 (24th August to 4th September)		
Bovine and Equine Physical Exam Lab Bovine and Equine Physical Exam lab assignment (due on Saturday September 5th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Modules on SAKAI
Week 4 & 5 (7th September to 18th September)		
Bovine Simulation Lab Bovine Simulation lab assignment (due on Saturday September 19th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Modules on SAKAI
Week 6 & 7 (21st September to 2nd October)		
Clinical Reasoning Lecture (September 22 nd) (Mandatory Attendance in one of the live sessions) Equine Musculoskeletal Lab Equine Musculoskeletal lab assignment (due on Saturday October 3rd at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Panopto Recording and Live Zoom Session Tuesday September 22nd 11:00am – 1pm AST Repeat 3 – 5:00pm AST Modules on SAKAI
Week 8 (5th October to 9th October)		
Midterms (No Midterms for LAMS 501)		
Week 9 (12th October to 16th October)		
Paper Case Introductory Lecture (Tuesday October 13th) Paper case meetings (Students and Facilitators – Case history taking) Thursday October 15th (Mandatory Attendance)	Dr. Momoh Clinic Facilitators (LAMS Faculty)	Panopto Recording Tuesday October 13th 10:00 – 11am AST Live Zoom Sessions Thursday October 15th 11am -12noon AST

Week 10 & 11 (19th October to 30th October)		
<p>Bovine Gastrointestinal Lab</p> <p>Deadline for Medical Math Submission (Saturday October 24th 11:00pm)</p> <p>Bovine Gastrointestinal lab assignment (due on Saturday October 31st at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)</p>	Dr. Momoh	Modules on SAKAI
Week 12 & 13 (2nd November to 13th November)		
<p>Equine Gastrointestinal (Simulation) Lab</p> <p>Paper case Discharge Discussion Meeting November 11th (Mandatory Attendance)</p> <p>Equine Gastrointestinal (Simulation) lab assignment (due on Saturday November 14th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)</p>	<p>Dr. Momoh</p> <p>Clinic Facilitators (LAMS Faculty)</p>	<p>Modules on SAKAI</p> <p>Live Zoom Sessions Wednesday Nov. 11th 11am -12noon AST</p>
Week 14 (16th November to 20th November)		
<p>Paper Case Discharge on Forums (due on Tuesday November 17th at 11:00 PM Grenadian time)</p>		SAKAI
Week 15 (23rd November to 27th November)		
No Final OSCE Exam for LAMS 501		

XIII. Grading and assessment policy, and grading rubrics

Grading Scale

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+

59.5-64.4	D
59.4	F

The following summative assessments will be conducted during the course:

Assessments	Percent of the total grade
Medical Maths Quiz	15 %
Equine and Bovine Physical Exam Lab Assignment	15%
Bovine Simulation Lab Assignment	10 %
Equine Musculoskeletal Lab Assignment	10%
Bovine Gastrointestinal Lab Assignment	15 %
Equine Gastrointestinal Lab Assignment	15 %
Paper Case Simulations Discharge Assignments	20 %

Medical Math Assignment: From the information presented during the medical math lecture, you will be given an assignment on Sakai. You get 40 multiple-choice questions to work on and submit make sure to submit on or before the due date as stated on SAKAI.

Lab Assignments: This question will be a direct reflection of the information/skills described in the PowerPoint slides, long notes and videos on SAKAI. The questions will consist of multiple choice and short answer questions.

“Paper Case” Clinic Assignment: The goal of the group assignment is to familiarize students with the process of working up a case. Each group or “clinic” will be assigned a case that needs to be diagnosed. You will be grouped on Forums (in SAKAI) where you will receive notifications about the presenting complaint of the case. And as a group you will also be scheduled to meet with the client/facilitator on a scheduled zoom meeting (**Week 9**). Each group is expected to come up with a clinic name (e.g. True-Blue Vet Clinic), be punctual and present in the allotted zoom meeting time.

The clinic will have to gather a history from the “owner” during the first zoom meeting and then after receiving physical examination findings, interpret these findings and develop an initial problem list and a prioritized list of differential diagnoses on FORUMS in SAKAI.

The group will then request 3 diagnostic tests from their facilitator to rule in/out their Differentials. The group will interpret the test results and come up with a final diagnosis for the patient and then meet with their facilitator for the second zoom meeting. During this second zoom meeting, the group will discuss their problem list, DD’s and how their test results helped them to their final diagnosis for the patient (**will be scheduled for Week 13**). After this meeting, each group will be responsible for developing a discharge/owner information sheet which will then be posted on SAKAI and graded by their facilitator.

A grading rubric is provided on Sakai.

The group assignment grade will be based on group performance/literature search/discharge form. One focus of these cases is to give the student practice working with others as a cohesive team. Part of this goal includes understanding group dynamics, conflict resolution and time management.

Specific information about the group presentations will be posted in Sakai and relayed to you during a pre-paper case lecture (Panopto Recording) on **October 13th**.

XIV. **Recommended Study Strategies**

- Before taking each module quiz on SAKAI review the resources and lab videos posted on SAKAI (On the LESONS Tool) under each lab's folders.
- Using LLOs and formative quizzes within each lecture to guide your learning
- Timely completion of bi-weekly learning activities
- Active participation in the Paper cases forums is highly recommended.

XV. **Instructor's expectations of the student**

The student is expected to adhere to the guidelines provided throughout this syllabus including attendance, engagement, assessment submission and examination policies.

The syllabus and all other course materials are available online on the Sakai/MyCourses website under the "Syllabus", "Resources", and "Lessons" tabs respectively.

All course announcements will be made online via email. Please check your sgu.edu email regularly to stay in touch with course announcements. You are responsible for keeping up to date with course changes as they may occur and for adhering tightly to all assessment deadlines.

XVI. **Professionalism statement:**

Students are expected to abide by the University Code of Conduct outlined in the student manual. "Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community.

Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behaviour."

XVII. **Attendance policy**

Students are expected to virtually attend and engage with online content. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement and participation in forums may adversely affect their academic status.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Attendance to the indicated mandatory LIVE Zoom sessions and engagement in the course content is mandatory. This will be reviewed using weekly checklists and attendance logs. You are expected to utilize the checklists on the Lessons tool (on SAKAI) to allow course directors to track your progress and engagement with the course material. Students are to be on time for each session and stay for the entire session to avoid being marked as absent due to tardiness or premature leaving.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend submit an examination and/or assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination and/or assignment.

Students who have technical issues during the examination and/or assessment MUST inform the Course Director (zmomoh@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination and/or assignment. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination. Scheduling of examination and/or assignment (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. Copyright policy

The materials (such as slides, handouts, and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE

Veterinary Clinical Orientation (1 credit)

LAMS 502 Term 1

Fall 2020

I. Course Faculty and Staff Information

Kerri Nigito, DVM

Email: nigker1@sgu.edu

Office: Large Animal Resource Facility (LARF) offices

Office hours by scheduled appointment on Zoom but email anytime with questions/concerns

Dr. Keith Kalasi, DVM

Email: kkalasi@sgu.edu

Office: Junior Surgery and Anesthesia Lab (JSAL)

Office hours by scheduled appointment on Zoom but email anytime with questions/concerns

This course is a multi-teacher course with Faculty members from the Large Animal Department and Small Animal Department supporting the course director.

Additional lecturing Faculty:

Inga Karasek, DVM

ikarasek1@sgu.edu

Bowen Louison, DVM

blouison@sgu.edu

II. Course location

Online location—Sakai resources with reading, lectures, and videos. Online Sakai self-directed learning modules, LIVE Zoom sessions

III. Prerequisite and/or co-requisite courses: Current first term student

IV. Required resources: Computer with functional camera and microphone

V. Recommended resources: Supplemental reading for clinical orientation will be posted on SAKAI and students are recommended to read these.

Other recommended resources are the following:

Small Animal Internal Medicine, 5th Edition by Richard Nelson and C. Guillermo Couto

Large Animal Internal Medicine, 5th Edition by Bradford P Smith

Further resources will be discussed during this class.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements: none

VIII. Course rationale: This is a one-credit course designed to introduce first-term SGU veterinary students to the art of physical examination of domesticated animal species and to the practice of clinical reasoning and medical record keeping. This course serves as the foundation course for additional clinical skills courses held in terms two through six.

IX. Course-level outcomes

Upon successful completion of this course, students will be able to:

- Describe how to perform a basic structured, clinical examination on companion animals, equine and farm animals.
- Integrate clinical skills with knowledge in other basic veterinary courses such as anatomy, physiology, and histology.
- Discuss the approach of and work with these animal species and demonstrate a professional attitude.
- Define basic veterinary terms, breeds, and reference values in small animal and large animal medicine.
- Know the Principles of Veterinary Medical Ethics (AVMA).
- Differentiate between types of medical records, discussing their contents.
Prepare a complete medical record based on information obtained through history and physical exam findings.

X. Lesson-level outcomes

LECTURE/MODULE	LEARNING OUTCOMES
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BIOSECURITY LECTURE	<ul style="list-style-type: none"> • Explain and discuss adequate biosecurity protocols for disease prevention.
SMALL ANIMAL PHYSICAL EXAM MODULE	<ul style="list-style-type: none"> • Describe a basic, structured physical examination of small animals.
MEDICAL RECORDS AND CLINICAL REASONING	<ul style="list-style-type: none"> • Define AVMA-Principles of veterinary medical ethics and some state laws. • Explain and apply concepts and contents of a medical record. • Examine and read a medical record to extrapolate information about patients.
EQUINE Physical Exam Module	<ul style="list-style-type: none"> • Examine common equine breeds and medical terminology and discuss proper technique for performing a clinical exam. • Describe safe and appropriate handling and restraint techniques and a safe and thorough routine clinical exam
BOVINE Physical Exam Module	<ul style="list-style-type: none"> • Examine common cattle breeds and medical terminology and discuss proper technique and vital parameters as it applies to cattle. • Describe the safe restraint/handling of a cow and a thorough and structured clinical exam

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGU SVM program level outcome
Demonstrate how to perform a basic structured, clinical examination on companion animals, equine and farm animals.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>C. Core Clinical Competencies (Skills) PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
Integrate clinical skills with knowledge in other basic veterinary courses such as anatomy, physiology, and histology.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>B. Core Professional Attributes</p>

	<p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>C. Core Clinical Competencies (Skills) Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
Demonstrate confidence in the approach of and work with these animals and show a professional attitude.	<p>A. Core Medical Knowledge PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
Demonstrate familiarity with basic veterinary terms, breeds, and reference values in small animal and large animal medicine.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals</p> <p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity</p> <p>C. Core Clinical Competencies (Skills) PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis</p>
Know the Principles of Veterinary Medical Ethics (AVMA).	<p>B. Core Professional Attributes PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>C. Core Clinical Competencies (Skills) PLO 27 Demonstrate and model effective client communication and ethical conduct.</p>
Differentiate between types of medical records, discussing their contents.	<p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>

Prepare a complete medical record based on information obtained through history and physical exam findings	B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.
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XII. Course Schedule

Date/Time	Topic	Faculty	Assignment/Assessment	Lecture hours
Week 2 (August 24-30)				
Live Zoom Session Tuesday, August 25 th 11:00am-1:00pm AST	Course Intro Preparation/Signalment	Dr. Kalasi / Dr. Nigito	Mandatory Attendance	2
Week 3 & 4 (August 31- September 13)				
Panopto session	Small Animal Physical Exam	Dr. Kalasi	Sakai Quiz Due: September 13th by 11:00pm AST	3
Live Zoom Session Tuesday, September 8 th 11:00am-1:00pm AST	Intro to medical records and clinical reasoning		Video Formative Assignment Due: September 27th by 11:00pm AST	
Week 5-7 (September 14-October 4)				
Panopto session	Biosecurity	Dr. Louison	Sakai Quiz Due: October 4th by 11:00pm AST	1.5
Panopto session	Behavior lecture	Dr. Bain		1.5
Midterms Week 8				
Week 9-11 (October 12-November 1)				
LARF LIVE Zoom session Tuesday October 20 th 11:00am-12:00pm AST	Equine Breeds, Terminology, Physical Exam Review	Dr. Karasek	Mandatory Attendance	3
	Equine Physical Exam Module		Sakai Quiz (unlimited time and submissions) Due: November 1st by 11:00pm AST	
Week 12-14 (November 2-22)				

LARF LIVE Zoom session Tuesday November 10 th 11:00am-12:00pm AST	FA Breeds, Terminology, Physical Exam Review	Dr. Nigito	Mandatory Attendance	3
	Bovine Physical Exam Module		Sakai Quiz (unlimited time and submissions) Due: November 22nd by 11:00pm AST	
Total				15

XIII. Grading and assessment policy, and grading rubrics

Grading Policy: Below is the grading scale for this course:

>89.5%	A
84.5 – 89.4	B+
79.5 – 84.4	B
74.5 – 79.4	C+
69.5 – 74.4	C
64.5 – 69.5	D+
59.5 – 64.4	D
<59.4	F

The grade for this course will be based on the on-time submission of online Sakai quizzes completed after each module.

2% of the class grade will comprise of attendance in mandatory Zoom sessions, engagement of the course material and professionalism (see rubric).

8% of the class grade will comprise of Medical records and Biosecurity assessment.

30% of the class grade will be based on engagement in the content and performance on the small animal physical exam module assessment.

30% of the class grade will be based on engagement in the content and performance on the equine physical exam module assessment.

30% of the class grade will be based on engagement in the content and performance on the bovine physical exam module assessment.

Quizzes will be administered on Sakai/MyCourses. Students are to refer to the course schedule listed on Sakai/MyCourses (under the “Resources” tab) to ensure

they do not miss the open/closure dates for the quizzes throughout the semester. Students will be notified via Sakai /MyCourses announcement(s) if the quiz dates deviate from this schedule.

Failure to adhere to submission deadlines will result in 0% for that quiz. There will be no make-up quizzes or redemptions allowed. All the quizzes are open book and students will find the majority of the answers from the information distributed to them during lectures, articles resources, and videos posted on Sakai/MyCourses. Although quizzes are open book students are not to complete the quizzes in groups (it is against the honor code to do so). Students are to please read the information made available to them prior to attempting the quizzes.

Professionalism rubric

2% of the class grade will comprise of attendance in mandatory Zoom sessions, engagement of the course material and professionalism.

Criteria	Meets expectation (1 point)	Does not meet expectation (0 points)
Punctuality	Student is on time for all Zoom sessions	Student is not on time for all Zoom sessions
Attendance	Student attends all mandatory zoom sessions for the entire duration of the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session
Participation	Student completes module checklists and turns in assignments and completes assessments on time.	Student does not complete module checklists or turn in assignments and/or completes assessments on time.
Preparedness	Student reads all relevant materials provided beforehand and any instructions in announcements, emails, syllabi, assignments, or assessments.	Student does not read all relevant materials provided beforehand and/or any instructions in announcements, emails, syllabi, assignments or assessments.
Professionalism	Student always communicates in a professional tone and timely manner.	Student does not communicate in a professional tone and/or timely manner.
Total (5 points)		

XIV. Recommended study strategies: Review all course material, lecture content, recorded lectures, and attend any LIVE Zoom sessions.

XV. Instructor's expectations of the student

The student is expected to adhere to the guidelines provided throughout this syllabus including attendance, engagement, assessment submission and examination policies.

This is a paperless course. The syllabus and all other course materials are available online on the Sakai/MyCourses website under the "Syllabus", "Resources", and "Lessons" tabs respectively. **The student is expected to read the required material before LIVE Zoom sessions and show that they know the theory for a thorough and complete clinical examination.**

All course announcements will be made online via email. Please check your *sgu.edu* email regularly to stay in touch with course announcements. ***You are responsible for keeping up-to-date with course changes as they may occur and for adhering tightly to all assessment deadlines.***

XVI. Professionalism statement

When communicating and working with colleagues, faculty, staff, and animals we expect students to be professional. Professional behavior is an important part of the SGU, SVM curriculum and students will be graded on that during the duration of this course. We expect students to be respectful, open minded, positive, caring, careful, able to give and get feedback gracefully as true representatives of the veterinary profession. Turn cell phones off or silence them during LIVE Zoom sessions.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Attendance to LIVE Zoom sessions are **mandatory and engagement in the course content is mandatory**. This will be reviewed using weekly checklists and attendance logs. You are expected to utilize the checklists in order to allow course directors to track your progress and engagement with the course material as well as to ensure your success. Students are to be on time for each session and stay for the entire session to avoid being marked as absent due to tardiness or premature leaving.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (nigker1@sgu.edu ; kcalasi@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

I. Copyright policy

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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LAMS Department

INTRODUCTION TO CLINICAL MEDICINE (4 credits)

LAMS 503 (Term 4)

Fall Term (2020)

I. Course Faculty and Staff Information

Course Director: Dr. Inga Karasek, BS DVM, Assistant Professor, ikarasek1@sgu.edu

Office Hours: To be planned with class representative

Dr. Anne Corrigan MS DVM MS DACVIM (SAIM), Professor, acorrigan@sgu.edu

Dr. Talia Guttin DVM DACVIM, Assistant Professor, tguttin@sgu.edu

Dr. Stacey Byers DVM, MS, DACVIM(LA), Associate Professor sbyers1@sgu.edu

Dr. Tara Paterson, DVM MS, Associate Professor, tpaterson@sgu.edu

Dr. Firdous A. Khan, BVSc, MVSc, DVSc, Diplomate ACT, Associate Professor
fkhan8@sgu.edu

Dr. Catherine Werners-Butler DVM, PhD, MRCVS, Dipl. ECEIM, Dipl. RNVA, Professor
cwerners@sgu.edu

Dr. Lauren Wise DVM, PhD, DACVIM, Associate Professor lwise1@sgu.edu

Dr. Heidi Janicke VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA, Associate Professor
hjanicke@sgu.edu

Dr. Kerri Nigito, DVM, Clinical Instructor Nigker1@sgu.edu

Dr. Jill Narak DVM MS DACVIM (Neurology), Private Practitioner, Veterinary Referral
Surgical Practice Atlanta, jillnarakdvm@vrspatl.com

Dr. Sandra Bechtel DVM DACVIM (Oncology), Associate Professor, University of Florida,
sbechtel@ufl.edu

Mrs. Frances Emmanuel, Executive Secretary, SAMS Dept, femmanuel@sgu.edu

II. Course location

This course is being offered online. Sakai will be the predominant site where lectures are offered using Panopto. Lessons will detail what lectures and materials will need to be reviewed each week. Forums will be used to generate discussion on the

material. There will be one mandatory Zoom session in the first week with optional Zoom sessions (office hours) during the semester.

III. Prerequisite and/or co-requisite courses

current 4th term SVM Student

IV. Required resources

Laptop with functional microphone, and camera. Lecturers will use notes and/or PowerPoint slides available on Sakai. For certain classes or subjects, scientific articles, videos, or textbook references maybe be assigned and made available on Sakai. Ettinger and Feldman Textbook of Small Animal Internal Medicine 8th edition or Nelson and Couto Small Animal Internal Medicine. Large Animal Internal Medicine, Bradford P. Smith, 5th edition

V. Recommended resources

Any Veterinary Physiology text, Guyton or Cunningham, Kirk's Current Veterinary Therapy, Bonagura, Saunders, XIV and XV editions.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Articles and/or online resources may be assigned during the term

VIII. Course rationale

This course is a keystone course in the veterinary curriculum. It was designed to use a team-teaching approach to tie together the basic science courses in the first 1 1/2 years and prepare the students for the third-year medicine and surgery courses. We use presenting complaints, history, clinical signs, PE findings and specific diagnostic testing with the goal of students being able to develop problem lists, differential diagnoses, and introduce veterinary methods for case work up of large and small animal species.

IX. Course-learning outcomes

Upon successful completion of this course, the student will be able to:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for major organ systems in both large (including production) and small animal species.
2. Use relevant clinical data to create differential diagnosis list for conditions in major organ systems.
3. Use relevant clinical data to select appropriate diagnostic testing for conditions in major organ systems to diagnose a disease.
4. Recognize emergency presentations for all major organ systems.
5. Analyze clinical data to design and calculate appropriate fluid therapy plans for small and large animals.
6. Analyze clinical data to accurately localize and diagnose neurologic abnormalities.

X. Lesson-learning outcomes

See Appendix XXIV after the Course Schedule.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXIV after the Course Schedule.

XII. Course Schedule

Attached at the end of this document.

XIII. Grading and assessment policy, and grading rubrics

There will be 2 examinations worth a total of 70 % of the class grade. The exam material will come from the Panopto lectures and PowerPoints. There will be approximately 3 questions/lecture of new material for both the midterm exam and the final exam. These examinations take place on ExamSoft and comprise of Multiple-Choice Questions (MCQ's).

There will be 5 homework assignments throughout the semester. These will have one week to be completed and MUST be turned in by the due date. No late assignments will be accepted. These will be worth 30 % of the grade.

Assessment Summary:

Total points = 100

Total points breakdown:

Midterm exam 35 pts-Friday, October 9th, 2020
Final exam 35 points- Monday, December 7th, 2020

Sakai Assignments 30 pts (5 pt. each)

1. Large animal cases-CBC/Chem/UA Dr. Byers (in place of Panopto lecture)- Saturday, August 22nd
2. Bloodwork-Saturday, August 29th
3. Fluid therapy-Saturday, September 12th
4. Neurology-Saturday, September 26th
5. Equine GI-Saturday, October 17th
6. Endocrine Online Resource Assignment-Saturday, October 31st

SVM Grading Scale:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

XIV. Recommended study strategies

Zoom office hours will be optional but recommended. These are a once weekly Zoom session where the material is discussed, and students can pose questions. These have been exceedingly helpful to the students who have attended in the past. Additional recommendations:

- Reading up on material covered in that week's Lesson plan in the relevant textbook (e.g. Ettinger's Textbook of Small Animal Internal Medicine).
- Posing questions in the Forums and perusing other questions and comments to clarify topics.
- Contacting the relevant Faculty member promptly if there are any questions regarding the material.

- After viewing each lecture, summarizing, and making an outline of the most important points.
- Using the Lecture learning objectives for each lecture and "Talia's Tips" for Dr. Guttin's material to guide studying.

XV. Instructor's expectations of the student

To engage with the weekly posted material that will be detailed in the Lessons portion of the Sakai course site. This includes listening to the lectures on Panopto, reading through posted PowerPoints, completing any weekly assignments, and participating on Forums, as necessary. Attending Zoom office hours would be another recommended activity. Reading Ettinger or Nelson and Couto or Smith sections in the text that complement the material presented will be exceedingly helpful to your success.

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior. The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that it sees fit to protect the rights of the student body, as well as the reputation of the University. Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct. Please exhibit professional behavior when communicating with your peers and with the faculty involved in this course.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

There is one mandatory Zoom session at the beginning of term where attendance will be taken. Otherwise, Forums will be utilized to generate class discussion on various topics throughout the semester and lack of participation will be noted.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (s) (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 1-473-439-2000 ext. 3338) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. Exam Soft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by Exam Soft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. Examinees are responsible for setting their laptop up for Exam Monitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from Exam Soft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [An Exam soft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The Exam soft student perspective video 30mins](#)
 - c. [The Exam soft/ExamID FAQ](#)
 - d. Exam soft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts, and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices

Course Schedule:

Week Number	LECTURE TOPIC	Instructor
1 <i>August 17-21</i>	Course Orientation: Clinical Reasoning- <i>Mandatory ZOOM session</i>	Karasek
1	Small animal cases- CBC/Chem/UA	Corrigan
1	Introduction to fluid therapy- equations/considerations, acid/base, electrolytes	Corrigan
1	Large animal cases-CBC/Chem/UA- <i>As independent assignment NOT lecture</i>	Byers
2 <i>August 24-28</i>	Introduction to fluid therapy- equations/considerations, acid/base, electrolytes	Corrigan
2	Fluid therapy LA cases	Byers
2	Fluid therapy EQ cases	Werners-Butler
2	Fluid Types	Guttin
3 <i>August 31- September 4</i>	Fluid therapy SA cases 1	Guttin
3	Fluid therapy SA cases 2	Guttin
3	Complex fluid therapy	Guttin
3	EQ/LA sick animal nutrition	Werners-Butler
3	SA nutrition for sick animals	Guttin
4 <i>September 7- 11</i>	LA theriogenology intro	Khan
4	EQ theriogenology intro	Khan
4	SA theriogenology intro	Khan
5 <i>September 14- 18</i>	Dermatology Introduction	Paterson
5	Dermatology Diagnostics/SA cases	Paterson
5	EQ Dermatology introduction	Werners-Butler
5	FA Dermatology introduction	Nigito
6 <i>September 21- 25</i>	Intro to Neurology-comparative	Narak
6	Localizing/Neuroimaging intra-species	Narak
6	SA Neuro cases	Narak
6	Equine Neuro	Karasek
7 <i>September 28- October 2</i>	GI Physiology Review LA	Byers
7	GI Physiology Review SA	Guttin

7	GI SA cases	Guttin
7	GI FA cases	Byers
7	Equine GI Intro	Karasek
8 <i>October 5-9</i>	Midterm Week Midterm: Friday, October 9th.	
9 <i>October 12-16</i>	Intro to Oncology	Bechtel
9	Introduction to lameness SA & EQ	Janicke
9	Large Animal Emergency- situational/environmental concerns	Karasek
10 <i>October 19-23</i>	Introduction to Endocrine	Corrigan
10	Common Endocrine Diseases	Corrigan
10	Common Endocrine/Equine endocrine	Corrigan
10	Endocrine assignment (1 lecture hour)	
11 <i>October 26-30</i>	Intro to Respiratory – PE, physiology comparative	Corrigan
11	SA Respiratory Cases	Corrigan
11	EQ Respiratory Cases	Karasek
11	LA Respiratory Cases	Nigito
12 <i>November 2-6</i>	Intro to cardiology- history, clinical signs, PE across species	Corrigan
12	Diagnostics for cardio- ECG, radiology, echo	Corrigan
12	SA Cardio cases	Corrigan
12	EQ Cardio cases	Werners-Butler
12	ECCM: Patient Assessment and Triage and Shock	Guttin
13 <i>November 9-13</i>	Liver Physiology Review	Guttin
13	SA Liver Diagnostics/Cases	Guttin
13	FA Liver-Cases	Byers
13	EQ Liver-Cases	Karasek
13	Biosafety and Biosecurity	Karasek
14 <i>November 16-20</i>	Renal Physiology Review comparative SA vs. LA	Guttin
14	Azotemia & Urolithiasis	Guttin
14	PU/PD	Guttin
14	SA Behavior	Bain
14	LA Behavior	Bain
15 <i>November 23-27</i>	Introduction to Production Animal Medicine	Byers
15	Small Ruminant Production	Momoh/Nigito
15	Beef Production	Momoh/Nigito
15	Dairy Production	Nigito
15	Poultry & Pork Production	Byers
16 & 17 <i>November 30-December 11</i>	Finals Weeks Final: Monday, December 7th	

Mandatory ZOOM meeting – 11am -12 pm August 18th, Dr. Karasek (Intro, course set-up, 1st lecture)

Optional Office Hours via ZOOM – Fridays 11 am-12 pm various faculty

Appendices, Mapping Outcomes:

Course Level Outcomes:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for major organ systems in both large (including production) and small animal species
2. Use relevant clinical data to create differential diagnosis list for conditions in major organ systems
3. Use relevant clinical data to select appropriate diagnostic testing for conditions in major organ systems to diagnose a disease
4. Recognize emergency presentations for all major organ systems
5. Analyze clinical data to design and calculate appropriate fluid therapy plans for small and large animals
6. Analyze clinical data to accurately localize and diagnose neurologic abnormalities

Mapping to Program Level Outcomes and AVMA Competencies:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for major organ systems in both large (including production) and small animal species	A1, A2, A3, A4, A5, A6, A7, A10 B4 C1, C8, C9	A b d c h f e
2. Use relevant clinical data to create differential diagnosis list for conditions in major organ systems	A1, A2, A3, A4, A6, A7 B4 C1, C5, C6, C9	Abd c h f
3. Use relevant clinical data to select appropriate diagnostic testing for conditions in major organ systems to diagnose a disease	A1, A2, A3, A4, A5, A6, A7 B4 C1, C5, C6, C9	Abdc h f
4. Recognize emergency presentations for all major organ systems	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10 B4	Abc d h f

	C1, C2, C3, C4, C5, C6, C9	
5. Analyze clinical data to design and calculate appropriate fluid therapy plans for small and large animals	A1, A2, A3, A5, A6 C1, C5, C6, C7,	Abc d
6. Analyze clinical data to accurately localize and diagnose neurologic abnormalities	A1, A2, A3, A4, A5, A6, A7, C1, C5, C6,	Abdch

Lecture Learning Outcomes:

	Lecture Learning Outcome	Course learning outcome Number/s
Introduction Critical Thinking and Bloodwork Section	Recognize and utilize appropriate terminology	1 2 3 4 5 6
	Understand and utilize the SOAP medical records format and the problem-oriented approach to medicine	1 2 3
	Compare and contrast disease vs. failure	1 2 3 4
	Describe the etiology for clinical signs of disease	1 4 6
	Utilize/use the DAMNIT scheme for differential diagnosis development	1 2 3 6
	Utilize/use signalment, clinical signs, relevant history, physical examination findings to create a differential diagnosis/rule out list and select appropriate diagnostic testing for all systems and both large and small animal species	1 2 3 4 6
	Review and analyze CBC, Serum Chemistry and Urinalysis results and use them to create differential diagnoses/rule outs	2 3
	Recognize and understand the implications of different leukogram patterns	2
	Compare and contrast ALT, AST, and ALP	2 3
	Assess liver function with a serum chemistry and select additional diagnostics	3
	Understand electrolyte balance and control mechanisms	2 3 5
	Explain rule outs for hyper and hypocalcemia, and interpret bloodwork and select additional diagnostic testing	2 3 4
	Understand and interpret Anion Gap	2 3 5
	Utilize the USG to interpret renal function	2 3 4
	Describe the benefits to evaluating a blood smear	2 4
Compare and contrast regenerative and non-regenerative anemias	1 2 3	

	Calculate a corrected reticulocyte percent	2
	Describe CBC findings to help you interpret erythrocyte regeneration	2
	Compare and contrast Rouleau and agglutination and select appropriate additional diagnostics	2 3
	Compare and contrast primary and secondary hemostasis	1 2 3
	Recognize the importance of platelets and select appropriate diagnostic testing	2 3
	Describe coagulation tests and appropriately select tests based on clinical signs, presenting complaints, and PE findings	1 2 3 4
	Describe coagulation factors, how to test for them, and develop differential diagnoses/rule outs for given clinical examples	1 2 3 4
Diagnostic testing	Differentiate between sensitivity and specificity of diagnostic tests	3
	Describe the basic principles of immunodiagnostic and pathogen testing including selecting the appropriate test and knowing its limitations	3
	Interpret basic immunodiagnostic and pathogen specific test results	3
Oncology Introduction	Describe how to diagnose cancer, the limitations of each procedure, and which procedure is appropriate for diagnosis	1 2 3
	Describe how to diagnose lymphoma compared to other differential diagnoses for enlarged lymph nodes	1 2 3
	Interpret lab work associated with a cancer patient	2 3
	Formulate a problem list and a list of differential diagnoses for a cancer patient	2 3
	Recommend diagnostic procedures appropriate for a cancer patient based on presentation	1 2 3 4
SA Dermatology Introduction	List the basic structures of the skin & cite the functions of the skin	1
	Explain the difference between primary & secondary derm lesions; give examples of each	1 2
	Describe the following dermatologic lesions and cite one dermatological disease in which that lesion is manifested: macule, patch, hyperpigmentation, hypopigmentation, papule, pustule, nodule, wheal, abscess, vesicle, bulla, erosion, ulcer, excoriation, lichenification, epidermal collarette, comedo, alopecia, crust, scale	1 2

	List the diagnostic tools appropriate for working up a suspected case of parasitic dermatitis. Explain the specific indication(s) for each diagnostic test.	3
	Identify common parasitic species causing disease in dogs and cats.	2
	Describe the various techniques for obtaining samples for cytology when concerned about bacterial or yeast infection. List other indications for performing cytology.	3
	Identify the following microbes: cocci bacteria, rod-shaped bacteria, yeast	3
	List the diagnostic tools appropriate for working up a suspected case of dermatophytosis. Discuss the diagnostic limitations associated with Wood's lamp.	3
	Cite the indications for trichography	3
	List the diagnostic tools appropriate for working up a nodular lesion	3
	List the diagnostic tools that would be helpful in working up a case of suspected allergy.	3
	State the diagnostic tests which comprise the dermatology minimum database.	3
	Explain the steps taken to thoroughly work up a dermatologic case. Be sure to include distant examination, physical examination, dermatologic examination, diagnostics, differential diagnoses, and plan.	1 2 3
	Discuss the importance of obtaining a thorough history and explain SHED-C	1 2
	Know the correct spelling of pruritus and explain the benefits of obtaining an itch score when working up a pruritic patient.	1
Equine and LA Dermatology	Recognize pathological conditions of the equine skin and determine whether they are medical or surgical	1 2
	Choose appropriate additional diagnostic tests to get a final diagnosis in a horse with a skin condition	3
	Develop a treatment and management plan for the different equine skin conditions	1 2 3
	Demonstrate a systematic approach to dermatologic case investigations in food animal species	1 2
	Describe pertinent signalment and herd history information when investigating dermatology case	1

	Differentiate and define normal skin coat physical exam findings from abnormal dermatologic	1 2
	Discuss and Identify common differentials and presentations of dermatology diseases in livestock production	1
Neurology Introduction Section	Utilize and recognize appropriate terminology	1 2 3 4 5 6
	Identify a patient's problem based on one word or phrase	1 4 6
	Describe the functions and locations of upper and lower motor neurons	1 2 6
	Compare and contrast motor function, postural reactions, muscle tone and reflexes and be able to localize a lesion	1 2 3 6
	Compare UMN vs. LMN bladder	1 2 3 4 6
	Describe the basic mechanisms of action of urotherapeutics used for UMN bladder	1 6
	List the functions of the brainstem.	1 2 6
	List the clinical signs of brainstem dysfunction.	1 6
	List the cranial nerves, including origin and function(s).	1 2 3 6
	List the ways vision is assessed on a neurologic examination.	1 2 6
	Using PLRs as a guide, neurolocalize blindness	1 2 6
	List the four cardinal signs of Horner's syndrome in small animals	1 6
	Describe the functions of the cerebellum.	1 6
	List the clinical signs of cerebellar syndrome.	1 6
	Describe the functions of the vestibular system	1 6
	Compare and contrast head tilt, falling, nystagmus, and postural reactions to localize vestibular disease	1 2 3 6
	List the components (and corresponding functions) of the forebrain.	1 2 6
	List the constellation of clinical signs for forebrain disease.	1 6
	List the clinical signs associated with myopathic syndrome.	1 6
	List the clinical signs associated with junctionopathies/diffuse lower motor neuron disease.	1 6
List the clinical signs associated with motor neuropathy vs. sensory neuropathy	1 6	
Equine Neurology	Be able to perform a thorough neurological exam in the horse including cranial nerve examination, assessment of autonomic function, and a dynamic neurologic exam (gait analysis + assessment of proprioceptive deficits)	1 2 3 6

	Choose appropriate diagnostic tests to obtain a final diagnosis in a horse with a neurologic condition	1 2 3 6
Fluid Therapy Section SA, EQ, and FA	Review physiology basics of fluid compartments, Starlings' forces, and homeostatic mechanisms to be able to determine fluid therapy needs of a given patient in a variety of species	1 2 3 4 5 6
	Determine if your patient needs shock vs. dehydration fluid therapy in a variety of species	1 4 5
	Calculate shock doses in a variety of species	4 5
	Calculate dehydration fluids via the MDO method in a variety of species	1 2 4 5
	Formulate a fluid therapy plan for patients, including route of fluid delivery, type of fluids, rate of fluid delivery, and over what time in a variety of species	1 2 4 5
	Compare and contrast crystalloids vs. colloids and the indications for use in a variety of species	4 5
	Compare and contrast a variety of crystalloid fluid types and the indications for use in a variety of species	4 5 6
	Compare and contrast the different routes of fluid therapy and the indications for use in a variety of species	4 5
	Describe appropriate catheter selection and placement in a variety of species	4 5
	Describe how to monitor a patient receiving fluid therapy in a variety of species	4 5 6
	Describe common electrolyte abnormalities including diagnosis and treatment plans in a variety of species	4 5 6
	Review acid/base balance and interpret a variety of venous and arterial blood gas case examples	4 5
	Calculate and interpret anion gap	4 5
	Gastrointestinal Section SA, FA and Equine	Review gastrointestinal anatomy and physiology as it relates to clinical signs in a variety of species
Interrogate owners about specific GI clinical signs, including differentiating vomiting from regurgitation, and differentiating small intestinal vs. large intestinal diarrhea, and use these clinical signs to identify the anatomic region of focus in a variety of species		1 2
Based on clinical signs (dysphagia, regurgitation, vomiting, diarrhea), and anatomic localization of the signs, be able to formulate a problem list, differential diagnoses, and diagnostic plan in a variety of species		1 2 3

	Place diagnostics in priority order based on how common or rare the differential diagnoses are in a variety of species	2 3 4
	Explain the etiology and pathophysiology for common causes of colic in the horse	1 2 4
	Describe history and risk factors commonly associated with colic in the horse	1
Equine Liver Section	Explain the etiology and pathophysiology of common equine liver diseases	1 2 3
	Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for suspect liver dysfunction	2 3 4
	Interpret liver specific diagnostic test results	
	Diagnose cases of Theiler's disease (serum sickness), Tyzzer's disease, aflatoxicosis, bacterial cholangiohepatitis, cholelithiasis, chronic active hepatitis, hyperlipemia/hepatic lipidosis and pyrrolizidine alkaloid/clover toxicity based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	1 2 3 4 6
	Construct a therapeutic and management plan for horses with aforementioned diseases	1 2 3 4 5 6
	Discuss the prognosis of horses suffering from liver disease	1 2 3
SA Liver Section	Utilize history, clinical signs, physical exam findings, and blood work to categorize liver patients: acute vs. chronic, hepatocellular vs. cholestatic, subclinical vs. clinical	2 3 4 5 6
	Construct a VITAMIN-D differential list based on liver disease categorization, and make a diagnostic plan for that patient	1 2 3 4 6
	Categorize icteric patients into pre-hepatic, hepatic, and post-hepatic, and make a diagnostic plan to differentiate these causes	1 2 3 4 6
	Identify the limitations of the liver diagnostic tests	3
Emergency and Critical Care Section	Recognize the clinical signs of shock	1 2 4
	Identify the different categories and explain the pathophysiology behind them	1 2 4
	Use the categories to direct treatments	1 2 4 5
	Describe a goal-directed therapy approach to treatment	4 5
LA Emergencies	Determine when euthanasia may be warranted Demonstrate a systematic approach when addressing an emergency in a large animal	1 4
		1 4

	Define what types of conditions constitute “emergencies” in large animals	4
Renal Section	Distinguish lower urinary tract signs from upper urinary tract signs, using patient history, interrogation of owners, clinical signs, and physical exam findings	1
	Differentiate pre-renal azotemia, renal azotemia, and post-renal azotemia	1 2 3 4
	Identify differentiating characteristics of acute kidney injury vs. chronic kidney disease, and develop differential diagnoses list and diagnostic plan for each	1 2 3 4
	Using laboratory abnormalities, identify the subtypes of renal disease: glomerular and tubular diseases	2 3
	Construct a diagnostic plan for renal and urinary diseases	2,3
	Compare and contrast PU/PD and pollakiuria	7
Endocrine section SA and EQ	Review and explain the anatomy and physiology/pathophysiology of the major endocrine organs	1
	Compare and contrast different endocrine diagnostic tests, understand how to perform them and using epidemiology concepts select an appropriate test in dogs, cats, and horses	1 3
	Using presenting complaints, clinical signs, history, and PE findings develop a differential diagnosis/rule out list and select appropriate testing to diagnose Diabetes mellitus, hyperthyroidism, hyperadrenocorticism, PPID and Equine metabolic syndrome.	1 2 3 4 6
Respiratory system SA and EQ	Review anatomy and physiology and discuss the diagnostic tests to choose for a given anatomical area in a variety of species	1 2 3 4
	Using presenting complaints, clinical signs, history PE so select appropriate diagnostic tests and be able to diagnose foreign bodies, fungal infections, neoplasia and nasopharyngeal polyps, laryngeal paralysis, brachycephalic airway syndrome, collapsing trachea, infectious and inflammatory parenchymal diseases, and guttural pouch disease	1 2 3 4 5 6
	Compare and contrast airway sampling techniques for a variety of species and be able to select the appropriate choice for a given case example	1 2 3
	Distinguish between hypoxemia and hypoxia	2
	Explain the A-a gradient	3

	Calculate the PaO ₂ for a given inspired oxygen concentration	3
Food Animal Production	Discuss the importance of FA production and the social and economic impact	1
	Discuss food safety and biosecurity issues	1
	Compare and contrast dairy and beef production. Discuss pork, poultry and small ruminant production and the different strategies that are utilized	1
	Review the major breeds in dairy, beef, pork, poultry and small ruminant production and industry standards and statistics	1
Cardiology Section	Review pertinent anatomy and physiology and apply it to case examples	1 2 4
	Describe common clinical signs of cardiac disease and explain the physiology/pathophysiology	1 2 4
	Evaluate the heart's priorities and utilize this to explain CHF	1 2 4
	Discuss and recognize the clinical signs of CHF	1 4
	Compare and contrast the major diagnostic tests available for cardiac patients and know when to select appropriate choices	2 3 4
	Describe common murmurs and be able to grade them	1
	Describe the importance of systemic blood pressure monitoring for a variety of diseases	1 2
	Compare and contrast systemic hypertension with pulmonary hypertension	1 2
	Describe common arrhythmias present in a variety of species	1 3 4
	Using presenting complaints, clinical signs, history, and PE finding to select appropriate diagnostic tests and be able to diagnose CHF, MVD, HCM, DCM, systemic hypertension, pulmonary hypertension, atrial vs. ventricular arrhythmias, ventricular tachycardia, atrial fibrillation, and heart blocks	1 2 3 4
	Compare and contrast syncope and seizures	1 4 6
	Compare and contrast obtaining an ECG's in small animals' vs equines	3
	Describe the MEA and discuss the implications for a given patient	3
Biosecurity Section	Define biosecurity	2
	Explain the importance of biosecurity in disease control	2

	Review ways diseases might be spread to you, your family, small animal clinic situations, animals on a farm/stable and at exhibitions	1 2 3
	Describe measures to prevent disease spread to you, your family, small animal clinic situations, animals on a farm/stable and at exhibitions	1 2 3
Theriogenology Section	<p>Review clinical reproductive anatomy and physiology of cattle and compare it briefly with those of sheep, goats, and pigs</p> <p>Identify reproductive abnormalities based on history and clinical signs</p> <p>Formulate diagnostic and treatment/prevention plans</p> <p>Design appropriate breeding plans</p> <p>Review equine clinical reproductive anatomy and physiology of horses</p> <p>Identify reproductive abnormalities based on history and clinical signs</p> <p>Formulate diagnostic and treatment/prevention plans</p> <p>Design appropriate breeding plans</p> <p>Review SA clinical reproductive anatomy and physiology of dogs and compare it briefly with those of cats</p> <p>Identify reproductive abnormalities based on history and clinical signs</p> <p>Formulate diagnostic and treatment/prevention plans</p> <p>Design appropriate breeding plans</p>	1 2 3
Lameness/Musculoskeletal Section	<p>154. Identify possible species-specific causes of lameness</p> <p>155. Describe how to localize a lameness</p> <p>156. Identify appropriate diagnostic tests to identify the cause of lameness</p>	1 2 3



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

Large Animal Medicine and Surgery

Equine Internal Medicine (3 credits)

LAMS 505 TERM 6

Fall 2020

I. Course Directors

Catherine Werners-Butler DVM, PhD, DECEIM Professor (Chair)

Email: cwerners@sgu.edu

Office hours scheduled through Zoom: (Tuesday week 2: 11-12 AST, Wednesday week 5: 11-12am AST and Wednesday week 8: 1:30-2:30pm AST)

Nicki Wise DVM, PhD, DACVIM Professor (Assistant Dean of Clinical Placement)

Email: lwise1@sgu.edu

Office hours scheduled through Zoom: (Wednesday week 11 & 13: 11-12am AST)

Other faculty:

Arno Werners DVM, PhD, DECVPT Professor

Email: awerners@sgu.edu

- II. **Course location:** Online teaching through Zoom / Panopto / Sakai (assignments, quizzes and forum)
- III. **Prerequisite and/or co-requisite courses:** Current sixth term SVM student
- IV. **Required resources:** The required reading for each section will collectively come from:
- 1) Lecture video's and slides (on Sakai).
 - 2) **Large Animal Internal Medicine**, Bradford P. Smith, 5th edition - pertinent page numbers will be provided.
 - 3) Material covered in previous courses (example: anatomy, physiology, LAMS 501, 502, 503, 516, 519) is considered appropriate material for examinations.
- V. **Recommended resources:** Supplemental reading for specific equine diseases may come from Equine Internal Medicine, Reed, Bayly, & Sellon, 3rd edition and Equine Infectious Diseases, Sellon & Long 2nd edition.
- VI. **Special accommodation**
- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
 - b. Information can be found at mycampus.sgu.edu/group/saas
- VII. **Other requirements:** internet access & zoom account
- VIII. **Course rationale:** This course is designed to familiarize the 6th term SGU student with the etiology, pathophysiology, epidemiology, clinical presentation, diagnostic evaluation, and treatment of commonly observed equine diseases. Emphasis will be placed on the clinical approach of evaluation, diagnosis, and treatment of the equine patient, as well as up-to-date therapeutic opportunities available to equine veterinarians as detailed in the current scientific literature. Mastery of material presented in this course will prepare the student for clinical rotations of the senior year and for the NAVLE board exam.

IX. **Course-level outcomes:** Upon successful completion of this course, students will be able to:

- Understand the etiology and pathophysiology for common adult and neonatal equine medical diseases for ALL of the major organ systems
- Use presenting complaints, history, physical exam findings, and clinical signs to create differential lists and choose appropriate diagnostic tests in the equine patient
- Interpret diagnostic test results in the equine patient
- Recognize emergency presentations and how to approach the resolution of these issues
- Formulate an appropriate treatment regimen for the equine patient including fluid therapy, nutritional needs and preventative care.
- Discuss the prognosis of common equine diseases

X. **Lesson Level Outcomes:** See Appendix XXI

XI. **Alignment of Course Learning Objectives with Program Learning Objectives/Competencies:** See Appendix XXI

XII. **Course Schedule**

All lectures will be provided in an asynchronous fashion. The schedule is meant as a guide for weekly average time investment in this course.

The final exam is a proctored exam which has to be taken on the scheduled day. An **approved excuse** needs to be provided before the exam will take place when there is a known conflict for that specific day (refer to point XVIII).

Dates	Week	Lecture credit hours/week	Monday	Tuesday	Wednesday	Thursday	Friday
17 Aug - 21 Aug	1	LAMS 505 : 3h		Course Intro/PE	Start Colic module	Colic module continued	
24 Aug - 28 Aug	2	LAMS 505 : 3h		Colic module continued	Colic module continued	Colic module continued	
31 Aug - 4 Sept	3	LAMS 505 : 3h		Colic module continued	Colic module continued	Colic module continued	
7 Sept - 11 Sept	4	LAMS 505 : 3h		Clinical Pharmacology intro	Clinical pharmacology colic	Endotox	Colic module assessment
14 Sept - 18 Sept	5	LAMS 505 : 3h		Respiratory module 1	Respiratory module 2	Respiratory module 3	
21 Sept - 25 Sept	6	LAMS 505 : 3h	Deadline Colic assessment	Fluid therapy	Nutrition	Endocrine	
28 Sept - 2nd Oct	7	LAMS 505 : 3h		Laminitis	Diagnostics	Neurology 1	
5th Oct - 9th Oct	8	LAMS 505 : 3h		Neurology 2	Neurology 3	assignment time	
12 Oct - 16 Oct	9	LAMS 505 : 3h		Infectious dz 1	Infectious dz 2	assignment time	
19 Oct - 23 Oct	10	LAMS 505 : 3h		Cardiology 1	Cardiology 2	assignment time	
26 Oct - 30 Oct	11	LAMS 505 : 3h		Muscle 1	Muscle 2	Liver 1	
2 Nov - 6 Nov	12	LAMS 505 : 3h		Liver 2	Urinary 1	Urinary 2	
9 Nov - 13 Nov	13	LAMS 505 : 3h		Neonatology 1	Neonatology 2	Neonatology 3	
16 Nov - 20 Nov	14	LAMS 505 : 3h		Hemolymphatic 1	Hemolymph 2	Dermatology 1	
23 Nov - 27 Nov	15	LAMS 505 : 3h		Dermatology 2	Ophthalmology	TBA: zoom open question hour when desired	
30 Nov - 4 Dec FINAL	FINAL WEEK 16		ANPH 520 final				LAMS 515 final
7 Dec - 11 Dec	FINAL WEEK 17		LAMS 505 final				LAMS 545 final
14 Dec - 18 Dec	CAPPS WEEK 18						

XIII. **Assignments, grading and assessment policy**

Grading Policy: The final grade for this course reflects 8 exam scores. There will be 1 quiz worth 10%, 4 assignments each worth 10%, 2 assignments each worth 5% and a proctored final exam worth 40% of the grade.

G-I Colic quiz: open date: September 11th – due date September 21st

Assignments: open date September 14th – due date November 27th

Final exam: December 7th (a specific time will be provided).

Below is the grading scale for this course:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

XIV. **Recommended study strategies:** If necessary, the course instructors can be contacted on an individual basis to assist students with their study strategies.

XV. **Instructor's expectations of the student:** The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and examination policies

XVI. **Professionalism statement:**
Please exhibit professional behavior at all times. Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of

the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that it sees fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missed examinations and/or failure of submission of assignments:

Students who fail to attend or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext.

4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. **ExamSoft Policy:**

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day.
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examssoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - I. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - II. [The examsoft student perspective video 30mins](#)
 - III. [The Examsoft/ExamID FAQ](#)
 - IV. [Examsoft information page](#)
 - V. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (slides, handouts, pictures and videos) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI. APPENDIX: PLO, CLO, LLO Mapping:

Mapping CLOs to PLOs and AVMA Competencies

Course level outcomes:

1. Explain the etiology and pathophysiology for common equine medical diseases for all the major organ systems
2. Utilize presenting complaints, history, physical exam findings, and clinical signs to create differential lists and to select appropriate diagnostic tests in the equine patient
3. Interpret diagnostic test results in the equine patient
4. Evaluate emergency cases and develop a plan for resolution of these issues
5. Formulate an appropriate treatment regimen for the equine patient including fluid therapy and preventative care.
6. Discuss the prognosis of common equine diseases

Lecture Level Outcomes Mapped to Course Level Outcomes (CLOs):

Lecture /lab name and number	Your lecture/lab Learning Outcomes:	CLO #
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<p>1. Physical Exam</p>	<p>1 -Know how to perform a thorough equine physical examination in a safe way</p> <p>2 -Identify the locations for intramuscular injection and venipuncture in the horse</p> <p>3 - Identify the specific differences in an equine PE compared to a small animal PE</p>	<p>2</p> <p>5</p> <p>2</p>
<p>2. Equine Diagnostics</p>	<p>1-Interpret abnormalities in routine equine laboratory tests</p>	<p>3</p>
	<p>2- Differentiate cases of acute versus chronic inflammatory diseases based on laboratory data</p>	<p>3</p>
	<p>3- Describe the basic principles of immunodiagnostic testing including selecting the appropriate test and knowing its limitations</p>	<p>3</p>
	<p>4- Interpret basic immunodiagnostic and pathogen specific test results in the horse</p>	<p>3</p>
<p>3. Review equine gastro intestinal anatomy and additional diagnostic test options related to equine gastro intestinal disease (colic)</p>	<p>1 - Know the clinical anatomy of the equine gastro intestinal tract and identify the locations in the equine gastro intestinal tract that are predisposed to impactions or dislocations</p> <p>2- Recognize the clinical signs of equine colic</p> <p>3 -Understand when (and which) additional diagnostic tests are indicated in a colic case including fecal exam, urine analysis, rectal palpation, bloodwork, diagnostic</p>	<p>1</p> <p>2</p> <p>2</p>

	<p>imaging, biopsies and absorption tests.</p> <p>4- Interpret the test results and realize that certain additional tests have potential risks (for the patient and/or clinician)</p>	3
4. Fluid Therapy	<p>1 Develop a fluid plan for an individual equine patient based on physical examination findings and bloodwork distinguishing between hypovolemia and dehydration</p> <p>2 Know the indications for fluid therapy and the limitations of fluid therapy in horses</p> <p>3 Recognize the differences in equine fluid therapy compared to small animal fluid therapy with regards to fluid administration routes, fluid choice and fluid losses through sweating.</p>	<p>4,5</p> <p>5</p> <p>2,3</p>
5. Equine nutrition	<p>1 Explain the relation of equine nutrition and nutritional related conditions in the horse with regards to the anatomy and function of the equine gastro intestinal tract including enzymatic digestion (of non-structural carbohydrates, fat and protein in the fore gut), hind gut fermentation (of structural carbohydrates (fiber)) and the vitamin + mineral dynamics.</p> <p>2- Revise a food label and formulate a correct ration for the</p>	<p>1,2</p> <p>5</p>

	<p>individual horse taking performance level, age and nutritional related predisposed conditions into account</p> <p>3-Understand that acute changes in the equine diet are a major cause of colic</p>	2
<p>6. Equine Gastro Intestinal Tract: esophageal conditions</p>	<p>1-Identify common pathological conditions of the equine esophagus (including choke and hypomotility) and determine whether they are medical or surgical</p> <p>2-Provide treatment options for medical conditions involving the equine esophagus including emergencies</p> <p>3-Provide information as to the prognosis and survival rate of the different conditions that can affect the esophagus</p>	<p>1, 2</p> <p>4,5</p> <p>6</p>
<p>7. Equine Gastro Intestinal Tract: stomach conditions</p>	<p>1-Understand the difference in the pathophysiology of Equine Gastric Ulcer Syndrome (EGUS) in adult horses and neonatal foals</p> <p>2-Recognize the clinical signs of EGUS and know how to diagnose the different forms of EGUS (Equine Squamous Gastric Ulcer Disease: ESGUD + Equine Glandular Gastric Ulcer Disease: EGGUD) including emergency cases</p> <p>3-Determine the risk factors for the development of EGUS and Identify treatment options for EGUS</p>	<p>1,2</p> <p>2,3,4</p> <p>5</p>

<p>8. Equine Gastro Intestinal Tract: small intestinal conditions</p>	<p>1-Explain the pathophysiology of equine inflammatory bowel disease and S-I enteritis.</p> <p>2-Identify the different forms of equine inflammatory bowel disease based on the utilization of signalment, history, clinical signs, a thorough PE and diagnostic test results</p> <p>3-Provide a prognosis and formulate a treatment plan for the different forms of inflammatory bowel disease and S-I enteritis</p> <p>4-Identify pathological obstructive conditions of the equine small intestinal tract and determine whether they are medical or surgical</p> <p>5-Provide medical treatment options for colic cases involving small intestinal obstruction / strangulation including: nasogastric intubation, administering medication (dewormers, nsaid's, antimicrobials, parasympaticolytica, prokinetic medication, fluid, electrolytes....)</p> <p>6- Provide information as to the prognosis and survival rate of the different S-I obstructions/strangulations</p>	<p>1</p> <p>2,3</p> <p>4,5</p> <p>2,3,4</p> <p>5</p> <p>3,4,6</p>
<p>9. Equine large intestinal conditions (diarrhea and obstructions/strangulations)</p>	<p>1-Identify pathological conditions of the equine large intestinal tract including left dorsal displacement, right dorsal displacement, left ventral colon impaction, colon torsion, pedunculated lipoma of the</p>	<p>2,3</p>

	<p>small colon, sand impaction, right dorsal colitis, salmonellosis, clostridiosis, cyathostominosis, intussusception of ileum in cecum, cecum impaction</p> <p>2-Determine whether the colic caused by one of the conditions mentioned above is medical or surgical based on clinical signs, blood work results and belly tap results.</p> <p>3-Know the risk factors for the different large intestinal conditions</p> <p>4-Provide treatment options for medical and surgical conditions of the large intestine mentioned above</p> <p>5-Provide information as to the prognosis and survival rate of the different L-I conditions mentioned above</p>	<p>3,4</p> <p>2</p> <p>5</p> <p>6</p>
<p>10. Equine post operative care</p>	<p>1-Recognise post-operative complications including thrombophlebitis, laminitis, peritonitis, post-operative ileus, ventral midline incision infection, colic, fever through thorough monitoring of the patient using repeated physical exams, bloodwork and diagnostic imaging</p> <p>2- Formulate a treatment plan for the post-operative patient including antimicrobial administration, nsaid's, fluid and diet.</p>	<p>2,3,4</p> <p>5</p>

<p>11. Equine Dermatology</p>	<p>1-Explain the etiology and pathophysiology of common equine dermatological conditions including equine sarcoid, melanoma, squamous cell carcinoma, dermatophilosis, dermatophytosis, hyperelastosis cutis, nodular necrobiosis, papilomatosis, folliculitis, pastern dermatitis, cellulitis/lymphangitis, abscesses (caused by streptococcus equi, Corynebacterium pseudotuberculosis, clostridium spp, multi resistant staphylococcus aureus), lice, mite and tick infestations, habronemiasis, onchocerciasis, insect hypersensitivity, alopecia areata, burns, decubitus lesions and contact dermatitis.</p> <p>2-Recognize pathological conditions of the equine skin and determine whether they are medical or surgical</p> <p>3-Choose appropriate additional diagnostic tests in order to get a final diagnosis in a horse with a skin condition</p> <p>4-Recommend treatment and management options for the different equine skin conditions</p> <p>5-Discuss the prognosis of horses suffering from the aforementioned diseases</p>	<p>1</p> <p>2</p> <p>3</p> <p>5</p> <p>6</p>
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12. Equine Neurology

1-Explain the etiology and pathophysiology of common equine neurologic diseases including rabies, equine protozoal myeloencephalitis, alpha virus encephalitis, west nile virus, equine herpes myeloencephalitis, leucoencephalomalacia, botulism, tetanus, cervical stenotic myelopathy, temporohyoid osteoarthropathy, rectus capitus avulsion, equine motor neuron disease, equine polyneuropathy and equine grass sickness.

1

2-Formulate an appropriate diagnostic testing plan and differential list for a horse presenting with clinical signs of neurologic disease

2,3

2

3-Perform a thorough neurological exam in the horse including cranial nerve examination, assessment of autonomic function, and a dynamic neurologic exam (gait analysis + assessment of proprioceptive deficits)

2,3

5

4-Diagnose cases of common equine neurologic diseases based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results

6

5-Develop a therapeutic and management plan for horses with aforementioned diseases

6-Discuss the prognosis of horses suffering from the aforementioned diseases

<p>13. Endotoxemia</p>	<p>1-Integrate knowledge of the pathophysiology of endotoxaemia and drug targets to create treatment plans for horses with endotoxaemia</p> <p>2-Compare and contrast advantages and disadvantages of drugs used in equine endotoxaemia</p> <p>3-Clarify the clinical signs associated with equine endotoxaemia</p>	<p>1,5</p>
<p>14. Equine clinical pharmacology</p>	<p>1-Integrate knowledge on pathophysiology of common equine diseases to create treatment plans</p> <p>2-Evaluate treatment plans based on the therapeutic concept including Good Veterinary Practice and Antimicrobial Stewardship</p> <p>3-Compare and contrast advantages and disadvantages of different treatment modalities</p>	<p>1,5</p> <p>5</p> <p>5</p>
<p>15. Laminitis</p>	<p>1- Describe the pathophysiology of all forms of laminitis</p> <p>2- Recognize the risk factors and clinical signs of laminitis</p> <p>3- Evaluate diagnostic tests utilized in cases of laminitis</p> <p>4- Develop a therapeutic plan for the various presentations of laminitis including pain management</p> <p>5- Discuss the prognosis of laminitic horses</p>	<p>1</p> <p>2</p> <p>3</p> <p>4,5</p> <p>6</p>

	6- Prepare a plan for laminitis prevention in the at risk horse	5
16. Endocrinology	1- Describe the major hormone imbalances/pathophysiology that occurs with pituitary pars intermedia dysfunction (PPID) and equine metabolic syndrome (EMS)	1
	2- Differentiate between the signalment and clinical signs of PPID and EMS	2
	3- Formulate a diagnostic testing plan for horses suspected of having PPID and/or EMS	2
	4- Interpret diagnostic testing results for PPID and EMS	3
	5- Diagnose cases of hypothyroidism (congenital and acquired), anhidrosis and nutritional secondary hyperparathyroidism based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	1,2,3
	6- Develop a therapeutic and management plan for horses with PPID and EMS	5
	7- Discuss the prognosis of horses diagnosed with an endocrinopathy	6
17. Hepatobiliary	1- Explain the etiology and pathophysiology of common equine liver diseases	1
	2- Formulate an appropriate diagnostic testing plan and differential list for a horse	2

	presenting for suspect liver dysfunction	
	3- Interpret liver specific diagnostic test results	3
	4- Diagnose cases of: Theiler's disease (serum sickness), Tyzzer's disease, aflatoxicosis, bacterial cholangiohepatitis, cholelithiasis, chronic active hepatitis, hyperlipemia/hepatic lipidosis and pyrrolizidine alkaloid/clover toxicity based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4
	5- Develop a therapeutic and management plan for horses with aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from liver disease	6
18. Urinary	1-Explain the etiology and pathophysiology of common equine urinary tract diseases	1
	2- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for suspect urinary tract dysfunction	2
	3- Interpret urinalysis results from a horse	3
	4- Diagnose cases of: acute renal failure, chronic renal failure, NSAID toxicity, urolithiasis and incontinence based on the presenting complaints, relevant historical information, physical	2,3,4

	exam findings and diagnostic test results	
	5- Develop a therapeutic and management plan for horses with aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from urinary tract disease	6
19. Muscle	1-Explain the etiology and pathophysiology of common equine skeletal muscle diseases	1
	2- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for a muscle disorder	2
	3- Interpret muscle specific diagnostic test results	3
	4- Assess cases of: exertional rhabdomyolysis, polysaccharide storage myopathy, recurrent exertional rhabdomyolysis, hyperkalemic periodic paralysis, nutritional myodegeneration, clostridial myositis, and ionophore toxicity based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4
	5- Develop a therapeutic and management plan for horses with aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from a myopathy	6
20. Hematologic	1-Explain the etiology and pathophysiology of common equine hemolymphatic disorders	1

	2- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for anemia, a clotting disorder or lymphosarcoma	2
	3- Interpret specific diagnostic test results for the aforementioned complaints	3
	4- Diagnose cases of: blood loss (acute versus chronic), red maple leaf toxicity, anemia of chronic disease, iron deficiency anemia, moldy sweet clover toxicity, IMTP, DIC, snake envenomation and lymphosarcoma based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4
	5- Develop a therapeutic and management plan for horses with aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from the aforementioned diseases	6
21. Infectious Disease	1-Analyze farm biosecurity and your role in management of cases of infectious disease	5
	2-Explain the etiology and pathophysiology of common equine infectious diseases including equine infectious anemia, equine piroplasmosis, equine viral arteritis, equine granulocytic ehrlichiosis, lyme disease, leptospirosis, Corynebacterium pseudotuberculosis (pigeon fever) and vesicular stomatitis virus.	1

	3- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for vasculitis or the aforementioned equine diseases	2
	4- Interpret specific diagnostic test results for the aforementioned diseases	3
	5- Diagnose cases of common equine infectious diseases based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3
	6- Develop a therapeutic and management plan for horses with aforementioned diseases	5
	7- Discuss the prognosis of horses suffering from the aforementioned diseases	6
22. Ophthalmology	1- Develop a plan for a comprehensive ophthalmologic exam in the equine patient including nerve blocks and topical medications	2
	2- Explain the etiology and pathophysiology of common equine diseases of the eye	1
	3- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for an ophthalmologic condition	2
	4- Interpret ophthalmologic diagnostic test results	3

	5- Diagnose cases of bacterial and fungal keratitis, equine recurrent uveitis, ocular habrenomiasis, onchocerciasis and common ocular neoplasia including squamous cell carcinoma, sarcoids and melanoma based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3
	6- Develop a therapeutic and management plan for horses with aforementioned diseases	5
	7- Discuss the prognosis of horses suffering from the aforementioned diseases	6
23. Cardiology	1-Explain the etiology and pathophysiology of common equine cardiac disorders	1
	2- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for suspect cardiac disease	2
	3- Interpret cardiac specific test results from a horse	3
	4- Diagnose cases of: atrial fibrillation, ventricular tachycardia. Ventricular septal defect, tetralogy of fallot, patent ductus arteriosus, degenerative valvular disease, endocarditis, pericarditis and myocardial disease based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4

	5- Develop a therapeutic and management plan for horses with aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from cardiac disease	6
24. Respiratory	1- Explain the etiology and pathophysiology of common equine respiratory disorders	1
	2- Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for suspect respiratory disease	2
	3- Interpret respiratory specific test results from a horse	3
	4- Diagnose cases of: sinusitis, guttural pouch empyema & mycosis, <i>Rhodococcus equi</i> infection, bacterial/fungal pneumonia (pleuropneumonia), Equine Herpes Virus-1 & 4, Equine Influenza Virus, Strep. equi infection("Strangles"), RAO, IAD and EIPH based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4
	5- Develop a preventative, therapeutic and management plan for horses with the aforementioned diseases	4,5
	6- Discuss the prognosis of horses suffering from respiratory disease	6
	7- Develop a vaccination program to combat common respiratory pathogens	5
25. Neonatology		

1- Differentiate and interpret normal and abnormal physical exam findings in the equine neonate as compared to the adult	1,2
2- Explain the etiology and pathophysiology of common equine neonatal disorders	1
3- Formulate an appropriate diagnostic testing plan and differential list for a foal presenting with weakness, not suckling, seizures, respiratory distress, colic, a distended abdomen, dysuria, diarrhea, enlarged umbilicus or lameness.	2
4- Diagnose cases of: prematurity/dysmaturity, sepsis, failure of passive transfer, HIE (“dummy foal syndrome”), fractured ribs, meconium impaction, SCID & neonatal isoerythrolysis based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	2,3,4
5-Develop a preventative, therapeutic and management plan for foals with the aforementioned diseases	5
6- Discuss the prognosis of foals suffering from the aforementioned conditions	6

Course Level Learning Outcomes SGU SVM Program Outcomes RCVS Outcomes

Explain the etiology and pathophysiology for common equine medical diseases for all the major organ systems	A1, 2, 3, 4, 7, 8, 9, 10, 11	2, 16, 24, 40, 42, 43, 47
Utilize presenting complaints, history, physical exam findings, and clinical signs to create differential lists and to select appropriate diagnostic tests in the equine patient	A1, 2, 3, 4, 6, 7, 8, 10, 11	21, 22, 24, 42, 43
Interpret diagnostic test results in the equine patient	A1, 2, 3, 6	22, 24
Evaluate emergency cases and develop a plan for resolution of these issues	A3, 4, 5, 6, 7	20, 42, 42
Formulate an appropriate treatment regimen for the equine patient including fluid therapy and preventative care.	A5, 6, 8, 9, 10	21, 27, 37, 46



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
Livestock Medicine II (3 Credits)
LAMS 515 TERM 6
Fall 2020

I. Course faculty and staff information

Course director

Dr. Stacey Byers, DVM, MS, DACVIM(LA), *Associate Professor*
sbyers1@sgu.edu or WhatsApp: 473-421-1050

Office Location: My kitchen table 😊 and maybe Cassia 1st floor

Office Hours: Zoom (see schedule or on request) and Forums/Q&A

Other faculty members

Dr. Inga Karasek, DVM, *Assistant Professor*, ikarasek1@sgu.edu

Staff members

Mrs. Frances Emmanuel, Executive Secretary, LAMS/SAMS Department,
femmanuel@sgu.edu

Mrs. Ruth Thornhill, Secretary, LAMS/SAMS Department, rthornhill@sgu.edu

II. Course location

Online – see Sakai course for details

III. Prerequisite and/or co-requisite courses

Current sixth term SVM student

IV. Required resources

- Working computer with camera, microphone, and internet access.
- Notes, lecture slides, Panopto recordings (see Sakai).
- Material covered in LAMS 544 (Livestock Medicine I) and previous courses are considered appropriate material for examinations.

V. Recommended resources

- Supplemental reading will be posted on Sakai.
- Useful livestock-oriented texts:
Large Animal Internal Medicine, 6th Edition, Smith BP, Van Metre DC, Pusterla N.
Diseases of Swine, Zimmerman JJ, Karriker LA, Ramirez A, Schwartz KJ, Stevenson GW.
Goat Medicine, Smith MC and Sherman DM.
Llama and Alpaca Care, Cebra C, Anderson D, Tibary A, Van Saun R, Johnson L.
Medicine and Surgery of Camelids, Fowler ME and Bravo PW.
Sheep and Goat Medicine, Pugh DG and Baird AN.
Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs, and Goats, Radostits OM, Gay CC, Hinchcliff KW, Constable PD.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Not applicable

VIII. Course rationale

The principles of diagnosis, treatment, and prevention of diseases in livestock (ruminants, camelids, and swine), are taught utilizing a lecture format with integrated case discussions. Individual and herd medicine and the role of the veterinarian in promotion of a healthy food supply are addressed.

Mastery of material presented in this course will prepare the student for clinical rotations of the senior year and for the NAVLE board exam. This course will continue to build on the livestock topics presented in earlier courses.

IX. Course level outcomes

Upon successful completion of this course, the student will be able to:

- A. Explain the etiology and pathophysiology for livestock animal diseases.
- B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.
- C. Determine the appropriate diagnostic tests and interpret the results.
- D. Recognize emergency presentations and determine appropriate management strategies.
- E. Formulate appropriate treatment and prevention/control strategies for diseases in individuals and herds. Integrate knowledge of legislation regarding appropriate use of therapeutic agents in food producing animals.
- F. Identify disease processes and clinical presentations that have a public health significance, including zoonoses and/or those diseases that are reportable to a designated authority.

X. Lesson level outcomes

See Appendix 1

XI. Alignment of course level outcomes with program level outcomes

See Appendix 2

XII. Course schedule

See Appendix 1

XIII. Grading and assessment policy, and grading rubrics

Grades for this course will be based on review questions, assignments, a quiz, and a comprehensive final. The review questions are 1/week, open book, and located in the Weekly Lesson tab. **This question MUST be answered in order to access the material for the week.** The assignments are open book and open time as long as

completed by the due date. The 2 swine quizzes will be closed book and have a limited time for completion (however this material will not be included on the final exam 😊). Final exam material will come from the notes and recorded lectures. There will be 1-2 questions per topic (see the schedule for details).

Zoom cases and formative assessments are optional but highly recommended to assist in clinical reasoning, reviewing assignments, assimilating the materials, and engaging with the class and instructors.

Topics, dates, and points are:

Assessment	Opens	Due Date	Points
One review question in Weekly Lessons	Every Mon 8 am	Before accessing weekly materials	15
Review assignment	Mon Aug 17	Tue Sept 1, 8 am AST	10
Vaccine case assignment	Mon Sept 7	Tues Sept 22, 8 am AST	10
Respiratory assignment	Mon Sept 14	Tues Sept 29, 8 am AST	7
Neurology assignment	Mon Oct 5	Tues Oct 20, 8 am AST	7
Swine quiz (2 parts, 9 pts each, 20 min each)	Fri Nov 6	Tues Nov 17, 8 am AST	18
Final Exam		Mon Dec 7, time TBD	68

The grading scale for this course is:

>89.5%	A
84.50-89.49	B+
79.50-84.49	B
74.50-79.49	C+
69.50-74.49	C
64.50-69.49	D+
59.50-64.49	D
<59.49	F

XIV. Recommended study strategies

It is recommended to look at the weekly plan (see Weekly Lessons in Sakai). A tasks checklist and links to all the materials for the week will be provided. Study strategies include watching the Panopto videos, participating in the Zoom sessions/office hours and the Q&A discussions, reading the long notes where provided, and answering the study questions. Formative assessments will be provided and should be used. These are ungraded but will help with developing critical reasoning skills and preparing for the final.

This course covers a variety of subjects related to livestock medicine; therefore, it does skip around body systems which can be confusing if you do not keep up with studying the materials. Cases will be used to integrate information from various topics.

Zoom office hours will be held on Wednesdays. Additional individual or group office hours can be made if needed. If a student feels they are falling behind or their

grades are inadequate, they should arrange a meeting with their academic advisor as well as someone from the DES office.

For the grading of examinations, the slides and notes, lecture handouts, and the statements made during lecture will be considered correct. Your correction of the notes and information provided in lecture is encouraged. However, information found which contradicts these sources must be brought to the attention of the instructor prior to an examination. The source will be evaluated and if indicated, corrections made (to the entire class). Do not expect to receive credit for information that contradicts these sources, unless this procedure is followed.

XV. Instructor's expectations of the student

You are expected to keep up with the weekly tasks and participate or watch the Zoom cases, office hours, and review sessions. **If you are having difficulty with the subject matter, are unsure of terminology, etc. please post in the Q&A, email me, ask a classmate, or even check the internet.** Reading comments after the end of term about lack of understanding of livestock terminology is too late to help you out.

XVI. Professionalism statement

Please respect the fact that not all students have the same experience and may ask questions that seem obvious to you. Do not make fun of students and instructors.

XVII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or quiz or submit an assignment by the deadline without a valid reason (see student manual: SGU SVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the quiz or assignment.

Students who have technical issues during the examination or quiz MUST inform the Course Director (sbyers1@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination or quiz. Failure to do so immediately will result

in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (slides, handouts, pictures and videos) provided to students at St. George's University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

APPENDIX 1: Schedule and Lesson Level Outcomes

Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
1	17-Aug	<p>Introduction</p> <ol style="list-style-type: none"> 1. Explain the differences for a herd vs individual history and the importance of each. 2. Explain the components and importance of the signalment. 3. Explain the components of a complete PE. <p>Bovine Review</p> <ol style="list-style-type: none"> 1. Compare and contrast beef and dairy cattle attributes, behavior, breeds, BCS, and production cycle. <p>Small Ruminants Review</p> <ol style="list-style-type: none"> 1. Compare and contrast the species and breeds for behavior, handling, nutrition, husbandry, BCS, aging, and herd health management. 	Review opens		10	4
2	24-Aug	<p>Camelids Review</p> <ol style="list-style-type: none"> 1. Compare and contrast camelids and ruminants behavior, handling, BCS, husbandry, and herd health management. 				2
3	31-Aug	<p>Parasites</p> <ol style="list-style-type: none"> 1. Review the common internal and external parasites affecting livestock species and the clinical signs, pathophysiology, and zoonotic risks. 2. Select appropriate treatment and control strategies. 	Review closes	Parasite Case		3

Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
4	7-Sep	<p>Therapeutics</p> <ol style="list-style-type: none"> 1. Determine the most appropriate medication for a situation. 2. Determine the appropriate dose, duration, route, and withdrawal times. 3. Become familiar with trade and generic drug names, banned drugs, and extralabel usage. <p>Euthanasia</p> <ol style="list-style-type: none"> 1. Review the AVMA and AAEP guidelines for euthanasia. 2. Determine the appropriate euthanasia method based on the situation, species, personnel, disposal, and safety. <p>Vaccines</p> <ol style="list-style-type: none"> 1. Review the common vaccines, usage, label and extralabel used. 2. Design a vaccination protocol for a herd/flock. 3. Explain the risks and protocols for MLV and bacterin vaccines, and where to report adverse reactions. 	Vaccines opens	Vaccine Case	10	3 3 3
5	14-Sep	<p>Respiratory Tract</p> <ol style="list-style-type: none"> 1. Describe the etiology, risk factors, and agents involved in bovine respiratory disease complex. 2. Explain the clinical signs of upper respiratory tract and lower respiratory tract diseases and larynx. 3. Explain the diagnostic tests and results for respiratory diseases. 4. Describe the various control and treatment strategies for respiratory disease and associated economic considerations. 	Respiratory opens		7	10

Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
6	21-Sep	<p>Respiratory Tract</p> <p>5. Explain the development and clinical signs of pulmonary hypertension in cattle and caudal vena cava thrombosis.</p> <p>6. Explain the etiology, risk factors, clinical signs for atypical interstitial pneumonia, verminous pneumonia and tuberculosis.</p>	Vaccines closes	Vaccine Cases		
7	28-Sep	<p>Endocrinology</p> <p>1. Describe the etiology, clinical signs, diagnosis, treatment, and control mechanisms for calcium, magnesium, and potassium endocrinopathies and imbalances.</p> <p>Hemolymphatics</p> <p>1. Describe the causes and clinical signs seen with acute and chronic anemia in livestock species.</p> <p>2. Explain the etiology, transmission, clinical signs, treatment, and control methods for infectious and non-infectious causes of hemolytic anemia.</p> <p>3. Identify the etiology, clinical signs, diagnosis, and management of anthrax in livestock.</p> <p>4. Compare and contrast sporadic lymphosarcoma from enzootic LSA (BLV) in cattle and LSA in small ruminants and camelids.</p>	Respiratory closes	Respiratory Case		3 6

Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
8	5-Oct	Neurology 1. Describe how to perform neurological examination on livestock. 2. Explain the clinical signs and common associated diseases based on neurological lesion locations. 3. Explain the etiology, clinical signs, diagnostics, treatment, and prevention strategies for cortical, cerebellar, brainstem, spinal cord, and peripheral neurologic diseases.	Neurology opens		7	10
9	12-Oct	Neurology 3. Explain the etiology, clinical signs, diagnostics, treatment, and prevention strategies for cortical, cerebellar, brainstem, spinal cord, and peripheral neurologic diseases.				
10	19-Oct	Mammary 1. Describe the anatomy, physiology, and immunology of the mammary gland and milk production of various livestock species. 2. Compare and contrast signs, diagnosis, agents, and treatment/prevention of the various types of mastitis. 3. Explain the etiology, clinical signs, and management of non-infectious udder and milk abnormalities.	Neurology closes	Neurology Case		6

Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
11	26-Oct	Swine 1. Explain the terminology and identification systems used in the swine industry. 2. Describe the production phases 3. Describe the reproduction cycle, normal and abnormal parturition, and causes for piglets losses in the farrowing phase. 4. Describe normal and abnormal PE, behavior, restraint, and treatment methods for various ages, sizes in commercial and potbelly pigs. 5. Explain the etiology, clinical signs, diagnosis, treatment, and control of periparturient and infectious swine diseases.				
12	2-Nov	Swine 1. Explain the etiology, clinical signs, diagnostic, treatment, and control methods for swine diarrhea. 2. 1. Explain the etiology, clinical signs, diagnostic, treatment, and control methods for swine respiratory disease. 3. Describe the etiology, clinical signs, diagnosis and control of ASF/CSF, circovirus, erysipelas, FMD, and skin diseases. 4. Explain which swine diseases are zoonotic or reportable.	Swine quizzes opens	PBP Case	18	
13	9-Nov	Liver 1. Describe the etiology, clinical signs, diagnostics, treatment, and control of infectious and non-infectious liver disease in livestock. 2. Describe the pathophysiology of liver abscesses and parasites, treatment, control, and potential sequela of each. 3. Describe the pathophysiology, clinical signs, diagnosis, treatment, and prevention of ketosis and fatty liver syndrome.				6

3Week	Date	Topics and LLOs	Assignment closes Tues 8 am AST	Zoom * Wed 1-2 pm AST	Points	Final Exam Points
14	16-Nov	Multisystemic 1. Explain the clinical signs found in acute, persistent and mucosal BVDV. 2. Select the appropriate diagnostic tests and explain the results. Explain how the results can be used for control or management of the disease.	Swine quizzes close	Liver Case		9
15	23-Nov	Multisystemic 3. Explain pathogenesis, symptoms, treatment, and control of leptospirosis, salmonellosis, Histophilus, and Mycoplasma infections.		Case and final review		
16	30-Nov	Final Monday Dec 7				68

APPENDIX 2: Course level outcomes and alignment of course learning outcomes with program learning outcomes (PLO)

Upon successful completion of this course, students will be able to:

Course Learning Outcomes	Program Learning Outcomes (PLO)
A. Explain the etiology and pathophysiology for livestock animal diseases.	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p>
B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.	<p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p>
C. Determine the appropriate diagnostic tests and interpret the results to rule in or rule out differential diagnoses to make a diagnosis.	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p>
D. Recognize emergency presentations and determine appropriate management strategies.	<p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents</p>

	<p>and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p>
<p>E. Formulate appropriate treatment and prevention regimens for individual and herd level issues. Integrate knowledge of legislation regarding appropriate use of therapeutic agents in food producing animals.</p>	<p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.</p> <p>PLO 21 Create comprehensive treatment plans. Includes prognosis</p> <p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 24 Analyze, design and execute appropriate plans for medical case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p>
<p>F. Identify disease processes and clinical presentations that have a public health significance, including zoonoses and/or those diseases that are reportable to a designated authority.</p>	<p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p>

	<p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p>
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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

LARGE ANIMAL SURGERY I SYLLABUS (2 Credits)

LAMS 516 TERM 5

FALL 2020

I. Course Faculty and Staff Information

Dr Heidi Janicke, VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA

Associate Professor in Large Animal Surgery

Office: Cassia Building (SGU campus map: # 17)

Tel: 444 - 4175 ext 3306

Email: hjanicke@sgu.edu

Office Hours: by appointment

II. Course location

MyCourses: 2020-08-LAMS516-V-0-Large Animal Surgery I

All synchronous (Zoom) and asynchronous (Panopto) lectures, additional Resources, Tests & Quizzes, Assignments, Checklists, etc. will be available through the Lessons tab on the LAMS 516 MyCourses site. Please use the checklists to ensure you have covered all the core material.

III. Pre-requisite and/or co-requisite courses

Current 5th term SVM student

- ANPH 506/503 Veterinary Anatomy I/II
- ANPH 512/513 Veterinary Physiology I/II
- SAMS 501/502 Radiology I/II
- LAMS 502 Veterinary Clinical Orientation
- LAMS 501 Veterinary Physical Diagnosis II
- SAMS 513 Diagnostic Imaging

IV. Required resources

Unfortunately, there is no one single text that encompasses all of the material covered in this course. The published long notes, lecture handouts and additional reading provided on MyCourses as well as information delivered in lectures and in your previous courses (see above) will provide basic information.

V. Recommended resources

Reference texts that provide additional information, images and discussion include:

- Auer & Stick: Equine Surgery
- Blowey: Cattle Lameness and Hoofcare: An illustrated guide
- Fubini & Ducharme: Farm Animal Surgery
- Knottenbelt: Handbook of Equine Wound Management
- McIlwraith & Turner: Techniques in Large Animal Surgery

Online dictionaries of equine terms that you might find helpful are:

- <https://www.thehorse.com/tools/glossary>
- <https://aaep.org/sites/default/files/Documents/EDCCGlossaryofTerms.pdf>

A large amount of information is available at this site: <http://www.vin.com>. You need to register, but there is no cost to veterinary students.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at <https://mycampus.sgu.edu/group/saas>

VII. Other requirements

Laptop or desktop, TurningPoint app on device, internet access, quiet working space

VIII. Course rationale

This is part 1 of the 2 part Large Animal Surgery course series. It aims to introduce students to surgical conditions, including trauma, encountered in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species in terms of pathogenesis, diagnosis, treatment, prognosis and management. Emphasis will be placed on the clinical approach to evaluate, diagnose and treat the patient, as well as up-to-date therapeutic opportunities and prognosis where available. Clinical reasoning will be honed using case-based scenarios, which in addition will encourage better in-depth learning of the material. Mastery of material presented in this course will prepare the student for 4th year clinical rotations, the NAVLE board exam, and veterinary practice after graduation.

IX. Course-learning outcomes

Upon successful completion of this course, the student will be able to

1. Recognize challenges specific to large animal surgery.
2. Identify the aetiology and pathogenesis of surgical conditions of the major organ systems in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species.
3. Recognize the clinical signs of surgical conditions of the major organ systems in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species.
4. Determine appropriate techniques for diagnosis of surgical conditions of the major organ systems in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species.
5. Determine treatment and management plans for surgical conditions of the major organ systems in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species.
6. Provide a prognosis for individual cases of surgical conditions of the major organ systems in the livestock animal (bovine, porcine, ovine, caprine and camelids) and equine species.

X. Lesson-learning outcomes

Principles of large animal surgery (equine, bovine, porcine, ovine, caprine and camelids)

1. Recognize the challenges specific to large animal surgery
2. Identify appropriate suture materials and patterns for use in large animals
3. Determine appropriate analgesic and anaesthetic techniques for surgery in large animals

Abdominal surgery

1. Review the clinical anatomy of the umbilicus and associated structures
2. Differentiate between causes of umbilical masses and identify the appropriate surgical treatment of each
3. Identify surgical conditions of the bovine gastrointestinal tract
4. Determine appropriate surgical approaches to bovine gastrointestinal conditions

Livestock miscellaneous conditions (bovine, porcine, ovine, caprine and camelids)

1. Review the clinical anatomy of the teat and safe handling/ examination of the mammary glands
2. Determine appropriate analgesia/ anaesthesia for surgery of the teat
3. Identify surgical conditions of the teats and describe simple surgical procedures of the teat
4. Determine appropriate analgesia/ anaesthesia for surgery of the eye and horn
5. Identify surgical conditions of the eye and describe simple surgical procedures of the eye
6. Determine the appropriate method of dehorning, depending on the signalment of the individual animal
7. Appreciate reasons for and determine the appropriate method of tail docking, depending on the signalment of the individual animal
8. Identify rectal prolapse in pigs and describe corrective procedures

- Determine the appropriate method of canine tooth removal in llamas.

Livestock (bovine, porcine, ovine, caprine and camelids) and equine urogenital tract surgeries

- Review the clinical anatomy of the urogenital tract in livestock animals and equines
- Appreciate the indications for castration in the different species
- Appreciate pre-operative considerations in the different species and determine appropriate restraint and analgesia/ anaesthesia
- Determine the appropriate castration method, depending on the signalment of the individual animal
- Identify complications of castration
- Determine the appropriate method of treatment for castration complications.
- Determine the appropriate surgical treatment for teaser bulls and recognise their advantages and limitations
- Identify pathological conditions of the urogenital tract in livestock animals and equines
- Determine the appropriate surgical treatment for these conditions and recognise their advantages and limitations

Livestock and equine integument (wound management, cutaneous conditions)

- Identify the appropriate method of diagnosing, treating and repairing different types of wounds and cutaneous conditions
- Identify complications of wound repair and determine how to manage them
- Appreciate the different concepts of skin grafting and be able to identify when to use them

Livestock musculoskeletal surgery (bovine)

- Describe how to carry out a lameness examination and foot trim in cattle
- Identify pathological conditions of the musculoskeletal system in production animals
- Determine the appropriate treatment for these conditions and recognise their advantages and limitations
- Determine the appropriate method of correction of angular limb deformities in llamas

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
CLO A Recognize challenges specific to large animal surgery	<p>A. Core Medical Knowledge</p> <p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p>

	<p>B. Core Professional Attributes PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills) PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare. PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management.</p>
CLO B Identify the aetiology and pathogenesis of surgical conditions of the major organ systems in the livestock and equine species.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals. PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p>
CLO C Recognize the clinical signs of surgical conditions of the major organ systems in the livestock and equine species.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 4 Explain the relationship between disease processes and clinical signs. PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p>
CLO D Determine appropriate techniques for diagnosis of surgical conditions of the major organ systems in the livestock and equine species.	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>B. Core Professional Attributes PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>C. Core Clinical Competencies (Skills) PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
CLO E Determine treatment and management plans for surgical conditions of the major organ systems in the livestock and equine species	<p>A. Core Medical Knowledge PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.</p>

	<p>PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 21 Create comprehensive treatment plans.</p> <p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management.</p> <p>PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, and food safety, biosafety and biosecurity.</p> <p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
<p>CLO F Provide a prognosis for individual cases of surgical conditions of the major organ systems in the livestock and equine species.</p>	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Core Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, and food safety, biosafety and biosecurity.</p> <p>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p> <p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>

XII. Course Schedule

See Appendix

XIII. Grading and assessment policy, and grading rubrics

a. Grading scale

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

b. Assessment policy

There will be a Midterm and Final with 45 questions (45 points) each given in ExamSoft with ExamMonitor and ExamID. Please ensure you read the instructions in **XIX. ExamSoft policy** to ensure you are set up for the exam ahead of time.

The exam material will come from the materials available on MyCourses/Lessons. Questions will be multiple-choice with one single best answer or short answer questions.

All other exam policies are followed according to the SGU Assessment Guidelines and the Student Handbook.

In addition, there will be formative (no points) quizzes and clinical reasoning cases for self-assessment of understanding of the material and concepts. Feedback will be available immediately upon submission. These will have a deadline the following week to ensure material is being covered in a timely manner.

XIV. Recommended study strategies

A number of synchronous Zoom sessions will be case based discussions. You will have access to an abridged version of the lecture notes in advance. It is **strongly advised** to work through the appropriate material **BEFORE** the sessions using the lecture and long notes to be able to participate in the discussions and clarify any questions at the time of the session. This will reduce the amount of time you will need to revise the material at a later date.

It may be useful to bring your reading materials available to add information during the discussions. In addition, please have the TurningPoint app downloaded on your device to be able to actively participate in the sessions.

The *further reading/recommended resources* (see IV/V) literature will be helpful in consolidating the subject matter, as will the resources in the ‘Additional resources’ folder in MyCourses and linked in Lessons.

Regular review of the course material is encouraged. This reduces panic the night prior to an examination, poor performance on the exams, and poor retention of information.

If a student feels they are falling behind or their grades are inadequate, they should arrange a meeting with the Course Director, their academic advisor as well as someone from the DES office.

For the grading of examinations the long notes, lecture handouts and the statements made during lecture will be considered correct.

Your correction of the notes and information provided in lecture is encouraged. However, information found which contradicts these sources must be brought to the attention of the instructor prior to an examination. The source will be evaluated and if indicated, corrections made (to the entire class). **Do not expect to receive credit for information that contradicts these sources, unless this procedure is followed.**

In addition to information provided in the long notes, handouts and in lecture, students are expected to have command of the information provided in previous courses and from recommended reading resources.

XV. Instructor’s expectations of the student

The student is expected to attend the case study sessions prepared by having read and worked through the required material before class.

You will benefit the most from these sessions by actively participating. The virtual classroom is a safe environment and questions are not only welcome, but encouraged. If you are unsure of something you can guarantee you will not be the only one, so please use the chat to present your questions.

XVI. Professionalism statement

The virtual classroom is designated a safe environment. Please respect the fact that not all students have the same experience and may ask questions that seem obvious to you. Do not make fun of students either in or after class.

Participation in the discussions will benefit your learning experience, please make use of this opportunity.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance,

engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed (see **XVIII**).

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination **MUST** inform the Course Director (hjanicke@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but **NOT** being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day.
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to contact the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner if located in Grenada or organize an alternative device.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy (if applicable):

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

Course Schedule

Week	Dates	Topics (Panopto)	Zoom (optional, Tuesday 12:30-1:30 or Wednesday 11:00 -12.00)	Assessment (closes on Monday)
1	17 Aug – 21 Aug	Intro to LAS I Principles of LAS		Formative quiz 1
2	24 Aug – 28 Aug	Teat conditions Dehorning		Formative quiz 2
3	31 Aug – 4 Sept	Miscellaneous conditions (eye, tail docking, rectal prolapse, canine tooth removal)	LAMS 516/544 eye case - Wednesday 2 nd Sept 11am	**VEA** Formative quiz 3 Quiz 1 closes 31 Aug
4	7 Sept – 11 Sept	Castration considerations Equine castration	LAMS 516 office hours – Tuesday 8 th Sept 12:30pm	Quiz 2 closes 7 Sept
5	14 Sept – 18 Sept	Ruminant, pig and camelid castration Castration complications (pre-operative)		Formative quiz 4 Quiz 3 closes 14 Sept

6	21 Sept – 25 Sept	Castration complications (post-operative) Livestock UGT – teaser bull surgery		Formative quiz 5
7	28 Sept – 2 Oct	Livestock UGT – urolithiasis Livestock UGT – surgery of the penis and prepuce	LAMS 516 Q&A for exams – Tuesday 27 th Oct 12:30pm LAMS 516/544 Livestock male UGT case – Wednesday 30 th Oct 11am	Formative quiz 6 Quiz 4 closes 28 Sept Quiz 5 closes 5 Oct
8	5 Oct – 9 Oct	EXAM WEEK		MIDTERM Monday 5th October (45 questions) Quiz 5 closes 5 Oct
9	12 Oct – 16 Oct	Equine male UGT Equine female UGT 1	LAMS 516 office hours – Tuesday 13 th Oct 12:30pm	Formative quiz 7 Quiz 6 closes 12 Oct
10	19 Oct – 23 Oct	Equine female UGT 2 Livestock female UGT 1		Formative quiz 8
11	26 Oct – 30 Oct	Livestock female UGT 2		Formative quiz 9 Quiz 7 closes 26 Oct
12	2 Nov – 6 Nov	Livestock MSK	LAMS 516 Livestock female UGT cases – Tuesday 3 rd Nov 12:30pm	Formative quiz 10 Quiz 8 closes 2 Nov
13	9 Nov – 13 Nov	Livestock GIT	LAMS 516 Livestock MSK/GIT cases – Tuesday 10 th Nov 12:30 pm LAMS 516/544 Livestock GIT case – Wednesday 11 th Nov 11am	Formative quiz 11 Quiz 9 closes 13 Nov
14	16 Nov – 20 Nov	Conditions of the integument 1		Quiz 10 closes 16 Nov
15	23 Nov – 27 Nov	Conditions of the integument 2	LAMS 516 Conditions of the integument - Tuesday 24 th Nov 12:30pm	Formative quiz 12 Quiz 11 closes 23 Nov
16	30 Nov – 4 Dec		LAMS 516 Q&A for exam – Tuesday 1 st Dec 12:30pm	Quiz 12 closes 7 Dec
17	7 Dec – 11 Dec	EXAM WEEK		FINAL Tuesday 8th December (45 questions)



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY
THERIOGENOLOGY SYLLABUS (4 credits)
LAMS 519 TERM 5
FALL 2020

I. Course Faculty and Staff Information

Course Director:

Dr. Firdous Khan, BVSc, MVSc, DVSc, Diplomate ACT

Associate Professor, Department of Large Animal Medicine and Surgery

Office Location: Large Animal Resource Facility (LARF)

Email: fkhan8@sgu.edu; Phone: 444-4175 ext. 3343

Office Hours: On Zoom (Thursdays, 12:00 Noon to 1:00 PM Grenada Time)

II. Course location

Online ([LAMS 519 course website](#) on MyCourses)

III. Prerequisite and/or co-requisite courses

- ANPH 501 Veterinary Histology and Embryology
- ANPH 503 Veterinary Anatomy II
- ANPH 513 Veterinary Physiology II
- PTHB 503 Veterinary Bacteriology/Mycology
- LAMS 502 Veterinary Clinical Orientation
- ANPH 505 Veterinary Pharmacology II
- LAMS 501 Veterinary Physical Diagnosis II
- LAMS 503 Introduction to Clinical Medicine
- PTHB 507 Veterinary Pathology II

IV. Required resources

Study material posted on MyCourses (lecture slides in resources, Panopto and Zoom recordings, journal articles, lab resources), laptop with functional microphone and camera, and internet access

V. Recommended resources

Recommended textbooks:

- Pathways to Pregnancy and Parturition – P.L. Senger (ISBN 0-9657648-1-8)
- Current Therapy in Large Animal Theriogenology (2nd Ed) – R.S. Youngquist & W.R. Threlfall (ISBN 0-7216-9323-7)
- Veterinary Reproduction and Obstetrics (9th Ed) – D.E. Noakes, T.J. Parkinson & G.C.W. England (ISBN 978-0-7020-2887-8)
- Canine and Feline Theriogenology – S.D. Johnston, M.V. Root Kustritz & P.N.S. Olsen (ISBN 0-7216-5607-2)
- BSAVA Manual of Canine and Feline Reproduction and Neonatology – G.C.W. England & A. von Heimendahl (ISBN 1-905319-19-0)
- Current therapy in equine reproduction – J.C. Samper, J.E. Pycock & A.O. McKinnon (ISBN 0-7216-0252-5)
- Manual of Equine Reproduction (3rd Ed) Steven Brinsko et al. (ISBN-13: 978-0-323-06482-8)
- Equine Reproductive Procedures (1st Ed) J. Dascanio & P. McCue (ISBN 978-0-470-96039-4)
- Equine Reproduction (2nd Ed) – A.O. McKinnon et al. (ISBN 978-0-8138-1971-6)

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

This course aims to equip students with an integrated and holistic view of all aspects of reproduction as it relates to cows, horses, small ruminants, pigs, dogs and cats.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

- Discuss and illustrate the normal reproductive cycles of domestic animal species
- Apply the knowledge of reproductive physiology and endocrinology to control or manage domestic animal reproduction

- Identify reproductive abnormalities and formulate therapeutic or preventative management strategies
- Discuss various reproductive techniques employed in management of reproduction or control of infertility

X. Lesson-level outcomes

Lectures	
Title	Learning outcomes
Bovine	
Reproductive anatomy and physiology review	1. Describe the different organs of the bovine reproductive system and state their function(s) and clinical relevance
	2. Explain the physiology underlying normal bovine estrous cycle
	3. Define puberty and list the factors affecting the onset of puberty
Estrus synchronization and artificial insemination	4. Explain the mechanism of action of common estrus synchronization protocols used in cattle
	5. Compare and contrast different estrus synchronization protocols and evaluate their suitability for use in different situations by applying knowledge of reproductive physiology
	6. Describe the procedure of artificial insemination and state the correct site of semen deposition and the optimal time of insemination
Pregnancy and parturition	7. Discuss the major events and regulation of bovine pregnancy
	8. Analyze information about history, clinical findings from transrectal palpation and/or ultrasonography, and laboratory findings to diagnose pregnancy and differentiate it from other conditions (e.g. pyometra, mucometra, mummification, maceration etc.)
	9. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	10. Choose a method for induction of parturition/termination of pregnancy appropriate to the stage of gestation
Gestational abnormalities	11. Explain the pathogenesis of important gestational abnormalities (mummification, maceration, hydrops, vaginal prolapse)
	12. Differentiate between the important gestational abnormalities based on information about history and clinical findings
	13. List the treatment(s) and state the prognosis for each of the abnormalities
Obstetrics and dystocia	14. Classify the common causes of dystocia in the cow
	15. Analyze information about the birth canal and fetal viability and disposition to select the most appropriate obstetrical method
	16. Identify common obstetrical instruments and state their use
The puerperium	17. Describe the events that occur during the puerperal period and determine how they can affect reproductive efficiency
	18. Distinguish between different postpartum abnormalities and select the most appropriate method of treatment

Failure of pregnancy	19. List the infectious and non-infectious causes of failure of pregnancy in the cow
	20. Explain how to investigate and treat infertility or pregnancy failures in a herd
Assisted reproductive techniques	21. List the common assisted reproductive techniques used in the cow
	22. Illustrate how the common assisted reproductive techniques are employed for improving reproductive efficiency or herd productivity
Male reproduction	23. State how to perform a breeding soundness evaluation in a bull
	24. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Equine	
Comparative anatomy and physiology	25. List the anatomical and physiological differences from cattle and explain how they affect reproductive management in this species
Breeding management	26. Discuss breeding soundness evaluation in a mare
	27. List and explain the methods used for hastening the onset of breeding season in mares
	28. Describe the different breeding systems used in mares
Pregnancy and parturition	29. Discuss the major events and regulation of equine pregnancy
	30. State how to diagnose pregnancy in a mare with special emphasis on twin pregnancy diagnosis and management
	31. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	32. Describe the examination of fetal membranes postpartum and discuss the implications of abnormal findings
Obstetrics and dystocia	33. Classify the common causes of dystocia in the mare
	34. Analyze information about the birth canal and fetal viability and disposition to select the most appropriate obstetrical method
	35. Discuss the important conditions/reproductive problems associated with parturition in the mare
Failure of pregnancy	36. List the infectious and non-infectious causes of pregnancy failure in the mare
	37. Analyze history and clinical findings to provide a diagnosis of common gestational problems and choose the most appropriate treatment
	38. Describe how to diagnose and treat infertility in the mare
Assisted reproductive techniques	39. List the common assisted reproductive techniques used in equine reproduction
	40. Illustrate how the common assisted reproductive techniques are employed for improving reproductive efficiency or control of infertility
Male reproduction	41. State how to perform a breeding soundness evaluation in a stallion
	42. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Canine	
Comparative anatomy and physiology	43. List the anatomical and physiological differences from cattle and explain how they affect reproductive management in this species

	44. Describe how to monitor a bitch for ovulation and state the optimal time of breeding
	45. Identify normal and abnormal estrous cycles based on the provided history and clinical findings
Pregnancy and parturition	46. Discuss the major events and regulation of canine pregnancy
	47. State how to diagnose pregnancy and estimate the litter size in a bitch
	48. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	49. Explain how to determine the expected date of whelping and the appropriate time for an elective cesarean section
Obstetrics and dystocia	50. List the common causes of dystocia in the bitch
	51. Select the most appropriate obstetrical method based on the provided history and clinical findings
	52. Identify the common postpartum problems in a bitch and state the most appropriate treatment
Female infertility	53. List the common causes of infertility in the bitch
	54. Analyze the provided history and clinical findings to identify the cause of infertility
	55. State the methods for treating infertility including the use of assisted reproductive techniques
Contraception/Control of reproduction	56. List and explain the methods (surgical and non-surgical) to prevent, postpone or suppress reproduction in the bitch
	57. State the methods used to prevent or terminate unwanted pregnancy in the bitch
Male reproduction	58. State how to perform a breeding soundness evaluation in the dog
	59. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Small ruminant reproduction	60. List the comparative anatomical and physiological features of small ruminants (using bovine for comparison) and explain how the differences impact their reproductive management
	61. Discuss the methods used in reproductive management of small ruminants
	62. State how to diagnose and manage the common reproductive abnormalities in small ruminants
Porcine reproduction	63. List the comparative anatomical and physiological features of pigs and explain how the differences impact their reproductive management
	64. Discuss the methods used in reproductive management of pigs
	65. State how to diagnose and manage the common reproductive abnormalities in pigs
Feline reproduction	66. List the comparative anatomical and physiological features of cats (using canine for comparison) and explain how the differences impact their reproductive management
	67. Discuss breeding management and control of reproduction in cats
	68. State how to diagnose and manage the common reproductive abnormalities in the cat
Exotics	69. Discuss the basic anatomical and physiological aspects of reproduction in selected exotic species

	70. List the most common reproductive abnormalities and discuss their management
Labs	
Bovine transrectal palpation and ultrasonography	71. List the preparatory steps and precautions that need to be taken before and during transrectal examination in the cow
	72. Describe how to safely perform transrectal palpation for pregnancy diagnosis in a cow
	73. List the definitive and suggestive signs of bovine pregnancy
Bull breeding soundness evaluation	74. List the essential components of a bull breeding soundness evaluation (BSE)
	75. Describe how to safely perform BSE in a bull
	76. Interpret the findings of the BSE to classify the bull as a satisfactory, questionable or unsatisfactory breeder.
Obstetrics	77. Identify the common obstetric equipment and state their use
	78. Assess the presentation, position and posture of the fetus
	79. Describe how to determine fetal viability using different reflexes
	80. Describe how to perform epidural anesthesia in a cow
Mare breeding soundness evaluation	81. List the components of a mare breeding soundness evaluation (BSE)
	82. State how to safely perform BSE in a mare
	83. Interpret the findings of a mare BSE
Canine reproduction	84. Describe how to collect and evaluate semen in a dog
	85. Describe how to perform vaginal cytology in a bitch
	86. Evaluate vaginal cytology pictures to determine the stage of estrous cycle in a bitch

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SVM program level outcome
CLO1: Discuss and illustrate the normal reproductive cycles of domestic animal species	<p>A. Core Medical Knowledge Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. Evaluate and analyze normal versus abnormal animal behavior.</p> <p>B. Core Professional Attributes Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p>
CLO2: Apply the knowledge of reproductive physiology and endocrinology to control or manage domestic animal reproduction	<p>A. Core Medical Knowledge Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. Recall, understand, and adequately utilize knowledge of and apply principles of</p>

	<p>therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>B. Core Professional Attributes Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills) Analyze, design and execute appropriate plans for medical case management. Design and execute plans for health promotion, disease prevention, and food safety. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
<p>CLO3: Identify reproductive abnormalities and formulate therapeutic or preventative management strategies</p>	<p>A. Core Medical Knowledge Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases. Explain the relationship between disease processes and clinical signs. Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>B. Core Professional Attributes Demonstrate, evaluate, and model effective communication with clients, the</p>

	<p>general public, professional colleagues and responsible authorities. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. C. Core Clinical Competencies (Skills) Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create comprehensive treatment plans.</p>
<p>CLO4: Discuss various reproductive techniques employed in management of reproduction or control of infertility</p>	<p>A. Core Medical Knowledge Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines. B. Core Professional Attributes Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. C. Core Clinical Competencies (Skills) Analyze, design and execute appropriate plans for medical case management. Design and execute plans for health promotion, disease prevention, and food safety.</p>

XII. Course Schedule

Lecturer: Dr. Firdous Khan

Week 1 (17th August to 21st August)

Bovine female clinical reproductive anatomy and physiology lecture

Bovine follicular dynamics and endocrinology lecture

Bovine estrus synchronization and artificial insemination lecture

Transrectal palpation and ultrasonography lab

Zoom office hour: Thursday, 20th August, 12:00 Noon to 1:00 PM Grenada Time

Week 2 (24th August to 28th August)

Bovine pregnancy and placentation lecture

Bovine pregnancy diagnosis lecture

Bovine gestational disorders lecture

Transrectal palpation and ultrasonography lab quiz (**due on 28th August at 5:00 PM Grenada Time**)

Zoom office hour: Thursday, 27th August, 12:00 Noon to 1:00 PM Grenada Time

Week 3 (31st August to 4th September)

Bovine parturition lecture

Bovine dystocia lecture

Bovine postpartum problems lecture

Bovine obstetrics lab

Zoom office hour: Thursday, 3rd September, 12:00 Noon to 1:00 PM Grenada Time

Week 4 (7th September to 11th September)

Bovine abortion lecture

Bovine infertility lecture

Bovine assisted reproductive techniques lecture

Bovine obstetrics lab quiz (**due on 11th September at 5:00 PM Grenada Time**)

Zoom office hour: Thursday, 10th September, 12:00 Noon to 1:00 PM Grenada Time

Week 5 (14th September to 18th September)

Bovine male reproductive physiology and breeding soundness evaluation

Bovine male infertility lecture

Bovine male breeding soundness evaluation lab

Zoom office hour: Thursday, 17th September, 12:00 Noon to 1:00 PM Grenada Time

Week 6 (21st September to 25th September)

Small ruminant reproduction I lecture

Small ruminant reproduction II lecture

Small ruminant reproduction III lecture

Bovine male breeding soundness evaluation lab quiz (**due on 25th September at 5:00 PM Grenada Time**)

Zoom office hour: Thursday, 24th September, 12:00 Noon to 1:00 PM Grenada Time

Week 7 (28th September to 2nd October)

Porcine reproduction I lecture

Porcine reproduction II lecture

Equine female clinical reproductive anatomy and physiology

Zoom office hour: Thursday, 1st October, 12:00 Noon to 1:00 PM Grenada Time

Week 8 (5th October to 9th October)

LAMS 519 Midterm Exam on 9th October

Week 9 (12th October to 16th October)

Equine estrous cycle manipulation lecture

Equine breeding soundness evaluation lecture

Equine breeding management lecture

Equine female breeding soundness evaluation lab

Zoom office hour: Thursday, 15th October, 12:00 Noon to 1:00 PM Grenada Time

Week 10 (19th October to 23rd October)

Equine pregnancy and placentation lecture

Equine pregnancy diagnosis lecture

Equine infectious pregnancy losses lecture

Equine female breeding soundness evaluation lab quiz (**due on 23rd October at 5:00 PM Grenada Time**)

Zoom office hour: Thursday, 22nd October, 12:00 Noon to 1:00 PM Grenada Time

Week 11 (26th October to 30th October)

Equine non-infectious pregnancy losses lecture

Equine parturition and dystocia lecture

Equine postpartum problems lecture

Zoom office hour: Thursday, 29th October, 12:00 Noon to 1:00 PM Grenada Time

Week 12 (2nd November to 6th November)

Equine infertility lecture

Equine assisted reproductive techniques lecture

Equine male reproductive physiology and breeding soundness evaluation lecture

Zoom office hour: Thursday, 5th November, 12:00 Noon to 1:00 PM Grenada Time

Week 13 (9th November to 13th November)

Equine male infertility lecture

Canine female reproductive anatomy and physiology lecture

Canine breeding management lecture

Canine reproduction lab

Zoom office hour: Thursday, 12th November, 12:00 Noon to 1:00 PM Grenada Time

Week 14 (16th November to 20th November)

Canine pregnancy and parturition lecture

Canine obstetrics lecture

Canine gestational and postpartum problems lecture

Canine reproduction lab quiz (**due on 20th November at 5:00 PM Grenada Time**)

Zoom office hour: Thursday, 19th November, 12:00 Noon to 1:00 PM Grenada Time

Week 15 (23rd November to 27th November)

Canine control of reproduction lecture

Canine female infertility I lecture

Canine infertility II lecture

Zoom office hour: Thursday, 26th November, 12:00 Noon to 1:00 PM Grenada Time

Week 16 (30th November to 4th December)

Canine male breeding soundness evaluation and infertility lecture

Feline reproduction lecture

Exotic reproduction lecture

Zoom office hour: Thursday, 3rd December, 12:00 Noon to 1:00 PM Grenada Time

Week 17 (7th December to 11th December)

LAMS 519 Final Exam on 11th December

XIII. Grading and assessment policy, and grading rubrics

Grading scale

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

The following summative assessments will be conducted during the course:

Assessment	Percent of the total grade
5 lab quizzes	10%
Midterm	30%
Final cumulative exam	60%

The exam questions will be based on the learning material posted on MyCourses, including lecture recordings and Zoom discussion sessions.

For the midterm and final exams, questions will be in the multiple-choice format with one correct answer.

Lab quizzes will be posted on MyCourses (Tests & Quizzes) with links within the Lessons tool. These quizzes will be based on the resources posted for each lab.

XIV. Recommended study strategies

- Timely completion of weekly learning activities
- Active participation in Zoom office hour sessions
- Using LLOs and formative quizzes within each lecture to guide your learning

XV. Instructor's expectations of the student

Students are expected to complete the online learning activities in a timely manner. Weekly checklists will be provided in lessons to help keep track of learning activities and assessments. Active participation in Zoom office hours is highly recommended.

XVI. Professionalism statement

Students are expected to abide by the University Code of Conduct outlined in the student manual.

“Students attending St. George’s University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community.

Learning experiences at St. George’s University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.”

XVII. Attendance/Participation Policy

Students are expected to virtually attend and engage with online content. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students’ lack of attendance, engagement, and participation may adversely affect their academic status.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (fkhan8@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.

- a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
- b. [The examsoft student perspective video 30mins](#)
- c. [The Examsoft/ExamID FAQ](#)
- d. [Examsoft information page](#)
- e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

2020-08-LAMS533-V-0-Profess Veterinary Development-(11925) >
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Syllabus

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ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Large Animal Medicine and Surgery

Professional Veterinary Development (2 credits)

LAMS 533 TERM 6

Spring 2020

I. Course Director

Nicki Wise DVM, PhD, DACVIM

Email: lwise1@sgu.edu

Off island this term but email anytime!

Other faculty/lecturers/coordinators:

Joanne Buckland PhD

Email: jbuckland@sgu.edu

Heather Douglas DVM, MBA

Email: doctordouglas@douglasanimalhospital.com

Karen Warnette DVM – AVMA PLIT

Email: karen.warnette@avmaplit.com

[Diane Beltrani -- Director Financial Aid SGU](#)

Email: dbeltrani@sgu.edu

[Adria Rodriguez DVM](#)

[Email: airodriguez@sgu.edu](mailto:airodriguez@sgu.edu)

[Keshia John, Simulation Technician/Communication Lab Coordinator](#)

[Email: kjohn5@sgu.edu](mailto:kjohn5@sgu.edu)

- II. **Course location:** Panopto, Zoom, Sakai Lessons/Assignments/Tests and Quizzes
- III. **Prerequisite and/or co-requisite courses:** Current sixth term SVM student
- IV. **Required resources:** This course does not have a required or recommended textbook. All recommended resources will be provided electronically on Sakai or in class.
- V. **Recommended resources:** None
- VI. **Special accommodation**
 - a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
 - b. Information can be found at mycampus.sgu.edu/group/saas
- VII. **Other requirements:** None
- VIII. **Course rationale:** This 6th term course is designed to re-emphasize the essential American Veterinary Medical Association (AVMA) "non-technical" competencies and professional attributes presented during Term 1 as well as to introduce additional concepts and tools that will allow the students to enter their clinical year and their career prepared for many of the significant challenges that veterinarians face on a daily basis. The skills introduced in this course are essential in order to develop into a competent and successful veterinarian.
- IX. **Course-level objectives:** Upon successful completion of this course, students will be able to:
 - 1. Demonstrate effective clinical communication skills
 - 2. Evaluate colleagues and offer effective feedback
 - 3. Summarize their personal and professional financial responsibilities and options for loan repayment
 - 4. Explain the legal and ethical issues facing veterinarians and be equipped to deal with such issues
 - 5. Design a simulated veterinary business plan with attention to practice and personnel management
 - 6. Review the non-technical competencies related to communication, teamwork, self awareness and servant leadership in the context of entering their clinical year and career
 - 7. Discuss the importance of wellness and mental health for veterinarians

X. Lesson Level Outcomes:

At the conclusion of the sections listed below, the student will be able to:

Client Communication:

- Demonstrate knowledge of communication skills described in the Calgary Cambridge Guide and how to apply these skills in a variety of settings
- Complete an effective client interview focusing on:
 - Forming a rapport with the client and generating a contract for their animal's care
 - Gaining the information necessary to form an accurate diagnostic plan
 - Recognize and react to verbal and non-verbal cues from the client
 - Providing general information in an accurate and supportive way to the client
- Participate in small group interactions including giving and receiving constructive and specific feedback from their coaches, peers and simulated clients.
- Develop self assessment techniques and be able to reflect on the interviews and what can be done to improve their communication skills

Veterinary Business Practices:

- Interviewing and salary negotiation
- Licensing
- Develop career SMART goals (Specific, Measurable, Attainable, Realistic, Time-Based)
- Learn how to establish fees and understand the basic finances behind running a practice
- Understand the veterinarian's role in management

Other Lectures:

- Understand ethical and legal implications facing veterinarians
- Prepare for their 4th clinical year including rotation and externship selection, the NAVLE and accreditation procedures
- Review aspects of personal financial literacy including loan repayment and budgeting
- Understand how to prepare for job interviews and other professional interactions
- Review the concept of effective feedback and review guidelines for giving and receiving it
- Define resiliency and recall and apply the necessary steps to develop and improve resiliency in their personal and professional lives.
- Identify and recognize societal cues that may affect their mental health in their personal and professional lives.
- Strengthen their social awareness and create healthy boundaries which, together with resiliency, will foster a safe, healthy, and growth mindset .
- Identify and use resources which will help them thrive mentally, emotionally, and spiritually after graduation.

XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies: See Appendix XXI

XII. Course Schedule

Changes in this schedule may occur at the course director's discretion, students will be notified at the earliest convenience. See schedule in sakai under resources and as a table at the end of this document.

XIV. Assignments, grading and assessment policy

The course will consist of a mix of lectures, interactive zoom sessions and one communication lab.

This course is graded pass/fail based on **attendance and assignments described below.**

Assignments/Lab: Students must submit the following assignments on time in order to pass the course and attend one communication session.

1. **Feedback/Mindset Assignment:** After watching the feedback panopto lecture and the TED Talk, please submit the reflective journal assignment - details found in sakai assignments. **DUE DATE October 1, 2020**
2. **Business Assignments:** To complete the business module, you must complete the following assignments. More details will be provided by Dr. Douglas. **DUE DATE October 11, 2020**
 - a. CV Review and Cover letter - Review your CV and make final changes to prepare for applying for your first job or internship. Create a cover letter that emphasizes how you will be a valuable team member and what you can offer to the practice.
 - b. Salary Calculator - Use the salary calculator on the AVMA website to determine what your approximate salary should be based on geography and interests. <https://bit.ly/2ZGsHs3>
 - c. SMART Goals - Create a SMART goal for applying for your first position. It must be Specific, Measurable, Attainable, Relevant and Time-Bound.
 - d. Contract Negotiation - Evaluate the contract provided. Propose changes to the contract and describe how you would negotiate with the practice owner to obtain those changes.
 - e. Write 5 interview questions and record your responses as if you were being interviewed for a position. Submit video recorded responses. Limit to 5 minutes.
3. **Wellness Assignments:** Before the third zoom session, you are expected to complete the following: **DUE DATE October 18, 2020**
 - a. Complete both the QPR/Kognito Training Certificates
 - b. Complete the Mental Wellbeing in Vet Med assignment – details to be provided by Dr. Rodriguez.
4. **Communication Lab:** This term, you will virtually attend **ONE** - 4 hour communication session on Fridays from 1pm-5pm AST. The date you sign up for is your choice, but you must complete one lab from Weeks 4 – 15. *A google document will be circulated to facilitate sign up.*
 - You will be guided through these communication simulations by a faculty member on zoom.
 - Each student will conduct 2 interviews at each session (time permitting) – the other member(s) of the group will observe and offer feedback after the interview using the Calgary Cambridge Guide (as you did during Term 5).

- More details on this will be provided by Dr. Wise
- There is no assignment associated with this exercise but attendance of ONE lab is **mandatory** to pass the course.

XIII. **Instructor’s expectations of the student:** The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment policies

XIV. **Recommended study strategies:** Not applicable

XV. **Professionalism statement:**

Please exhibit professional behavior at all times. Respond to emails from faculty within 24 hours.

XVI. **Attendance policy:** Attendance is required for ONE communication lab session. If you cannot attend the session you signed up for, notify Dr. Wise immediately.

XVII. **Policy regarding missing exams or failure to submit assignments:** Failure to submit the assignments will result in course failure.

XVIII. **Copyright policy** The materials (slides, handouts, pictures and videos) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XIX. **APPENDIX: PLO, CLO, LLO Mapping:**

Mapping CLOs to PLOs and Competencies

1. Demonstrate effective clinical communication skills
2. Evaluate colleagues and offer effective feedback
3. Summarize their personal and professional financial responsibilities and options for loan repayment
4. Explain the legal and ethical issues facing veterinarians and be equipped to deal with such issues
5. Design a simulated veterinary business plan with attention to practice and personnel management
6. Review the non-technical competencies related to communication, teamwork, self awareness and servant leadership in the context of entering their clinical year and career
7. Discuss the importance of wellness and mental health for veterinarians

	Lecture/lab Learning Outcomes:	CLOs
1. Client Communication Simulations	1- Demonstrate knowledge of communication skills described in the Calgary Cambridge Guide and	1,6

	how to apply these skills in a variety of settings	
	2- Complete an effective client interview	1,6
	3- Form a rapport with the client and generate a contract for their animal's care	1
	4- Obtain the information necessary to form an accurate diagnostic plan	1
	5- Recognize and react to verbal and non-verbal cues from the client	1
	6- Provide general information in an accurate and supportive way to the client	1,6
	7- Giving and receive constructive and specific feedback from their coaches, peers and simulated clients.	1,2,6
	8- Develop self assessment techniques and be able to reflect on the interviews and what can be done to improve their communication skills	1,2
2. Veterinary Business Practices	1- Create a resume and cover letter	5
	2- Negotiate a salary	5
	3- Develop SMART goals (Specific, Measurable, Attainable, Realistic, Time-Based)	5
	4- Create a business plan	5
	5- Create a mission, vision, and value statement	5

	6- Practice establish fees and understand the basic finances behind running a practice	5
	7- Understand the veterinarian's role in management	5, 6
	8- Develop hospital regulatory plans for OSHA, DEA, Hazardous Waste, and Radiology	5
	9- Develop a marketing plan	5
	10- Develop a hiring strategy	5
3. Job Interview Preparation	1- Discuss the basics concepts of professional etiquette in reference to externships and job interviews	6
	2- Understand how to prepare for a job interview	6
	3- Review commonly asked interview questions and how to answer them	6
	4- Discuss the appropriate follow up procedure after the interview	6
4. Giving and receiving effective feedback	1- Discuss the importance of feedback within a healthy veterinary team	2,6
	2- Review guidelines for receiving feedback in an effective manner	2,6
	3-Review guidelines for giving both ongoing and formal feedback	2,6
5. AVMA PLIT – Veterinary Liability & Malpractice	1-Review the terminology and types of claims that are brought against veterinarians	4

	2-Explore cases of malpractice and negligence	4
	3- Discuss the importance of proper record keeping, documentation and informed consent	4
	4- Understand how veterinary students and veterinarians can protect themselves from litigation	4
6. Financial Literacy	1- Review all aspects of personal financial literacy including preparing a budget	3
	2- Review clinical year financial aid information	3
	3- Discuss available loan repayment options	3
	4- Develop a loan repayment strategy	3
7. Mental Well Being in Veterinary Medicine	1- Discuss the state of mental well-being in the average veterinarian	7
	2- Review the literature related to depression, anxiety and suicidal ideation in veterinarians	
	3- Discuss the concepts of perfectionism and compassion fatigue	
	4- Review strategies to improve personal and professional wellness	
8. The Clinical Year Survival Guide	1- Review details of clinical rotations including scheduling, patient care and evaluations	6,7
	2- Review the process of a NAVLE application, state licensure and applying for internships	
	3-Understand the daily responsibilities of a 4 th year veterinary student	

4-Review the importance of teamwork and communication during clinical year
--

Course Level Learning Outcomes**SGU SVM Program Outcomes****RCVS**

Demonstrate effective clinical communication skills	B1, 2, 8 C8	5, 14, 15, 48
Evaluate colleagues and offer effective feedback	B1	15
Summarize their personal and professional financial responsibilities and options for loan repayment	B7	8
Explain the legal and ethical issues facing veterinarians and be equipped to deal with such issues	B2	2, 49
Design a simulated veterinary business plan with attention to practice and personnel management	B7	3, 15, 48
Review the non-technical competencies related to communication, teamwork, self awareness and servant leadership in the context of entering their clinical year and career	B2, 3, 5, 6	12, 13
Discuss the importance of wellness and mental health for veterinarians	B5, 6	8, 12, 13

SCHEDULE:*LAMS 533 Fall 2020 Weekly Schedule*

Week	Dates	Lectures/Content	Faculty	Format/Assignments
1	17-		Dr. Nicki	2 hour live Zoom on August 18th

	21 Aug	4 th Year Survival Guide (2)	Wise	
2	24 - 28 Aug	Receiving Feedback & Growth Mindset	Dr. Nicki Wise	Panopto lecture (1), TedTalk + Assignment Due 10/1
3	31 Aug - 4 Sept	NAVLE Prep	Dr. Joanne Buckland	Panopto (2)
4	7 - 11 Sept	Business of Vet Med	Dr. Heather Douglas	Panopto (1) + 2 Assignments
5	14 - 18 Sept	Business of Vet Med – SMART goals and salary calculator	Dr. Heather Douglas	Panopto (1) + Assignment
6	21 - 25 Sept	Business of Vet Med - Contract Negotiations	Dr. Heather Douglas	Panopto (2) + 2 Assignments All business assignments due 10/11
7	28 Sept - 2nd Oct	No content		
8	5- 9 Oct	Wellbeing in Veterinary Medicine: Your Wheel of Life/Wellness Wheel	Dr. Adria Rodriguez	Zoom lecture (1hr October 7th) Assignment-QPR/Kognito Training Certificates Due 10/18
9	12 - 16 Oct	Mindfulness and Self- Compassion in Veterinary Medicine	Dr. Adria Rodriguez	Zoom lecture (1 hr – October 14th) Assignment- Mental Wellbeing in Vet Med Due 10/18
10	19 - 23 Oct	The Impact of Societal Expectations and Finding Support after SGU	Dr. Adria Rodriguez	Zoom Lecture (1 hr – October 21st)
11	26 - 30 Oct	No Content		

12	2 - 6 Nov	Financial Literacy	Diane Beltrani	Panopto (2)
13	9 - 13 Nov	Loan Repayment Webinar	Doctors without quarters	Live Zoom Webinar (2) November 9 Time TBD
14	16 - 20 Nov	AVMA PLIT – Veterinary Liability	Dr. Karen Wernette	Panopto (3)
15/16	23 Nov – 4 Dec	No Content		

PLUS: COMMUNICATION LABS Weeks 4-13 Fridays from 1-5pm AST

+ [Add attachments](#)



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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Large Animal Medicine and Surgery

Special Topics in Equine Practice Syllabus (1 credit)

LAMS 537 (Term 6)

Fall Term (2020)

I. Course Faculty and Staff Information

Dr. Inga Karasek, BSc. DVM, Assistant Professor

Email: ikarasek1@sgu.edu

Phone ext. 3829

Office Hours: by appointment via Zoom

Dr. Firdous A. Khan, BVSc, MVSc, DVSc, Diplomate ACT, Associate Professor

fkhan8@sgu.edu

Dr. Heidi Janicke VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA, Associate Professor

hjanicke@sgu.edu

Dr. Catherine Werners-Butler DVM, PhD, MRCVS, Dipl. ECEIM, Dipl. RNVA, Professor

cwerners@sgu.edu

II. Course location

Online: Sakai used predominantly (lectures via Panopto, weekly lectures/assignments detailed in weekly Lessons).

III. Prerequisite and/or co-requisite courses

Current sixth term SVM student.

IV. Required resources

Functional laptop with microphone and video capabilities.

The required reading for each section will collectively come from:

- Lecture slides /articles (on Sakai-Resources) and discussions on Forums
- **Large Animal Internal Medicine**, Bradford P. Smith, 5th edition
- Material covered in previous courses (example: anatomy, physiology, LAMS 501, 502, 503, 516, and 519)

V. Recommended resources

Supplemental reading for specific equine diseases may come from Equine Internal Medicine, Reed, Bayly, & Sellon, 4th edition, Diagnosis and Management of Lameness in the Horse, Ross & Dyson, 2nd edition or newer. LAMS 516-Large Animal Surgery notes/lecture material. Equine Surgery Auer and Stick, 3rd edition or newer

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

A keen interest to seek out information on the various equine topics that will be addressed.

VIII. Course rationale

This course is a selective course in the veterinary curriculum. It was originally designed to give those students with an interest in equine medicine more hands-on experience. This term this course will offer further didactic equine material using an online format, which will complement and expand on what has been taught in previous courses before fourth year clinical rotations.

Course-level outcomes

Upon successful completion of this course, students will be able to:

1. Understand and describe the common lameness tests; palpation, provocative tests, hoof testers and perineural anesthesia
2. Use presenting complaint, history, physical exam findings, and clinical signs to create differential lists and choose appropriate diagnostic tests in the equine patient
3. Be familiar with how to perform a dental floatation, and interpret digital radiographs
4. Understand what appropriate stabilization techniques for fracture management are and choose appropriate strategies depending on the fracture type/location
5. Describe how to perform a basic colic, neurological, ophthalmological, and dermatological examination, including the use of appropriate sedation, blocks and specific tests relevant to each problem
6. Understand the theory and use of complementary therapies
7. Appreciate normal/abnormal equine behaviour and low stress training techniques
8. Generate a plan for the management of large animals in a natural disaster

IX. Lesson-level outcomes

See Table 1. at the end of the syllabus

X. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Table 2. at the end of the syllabus

XI. Course Schedule

Posted at the end of the syllabus

XII. Grading and assessment policy, and grading rubrics

Examinations: There will be 1 exam for this course, a comprehensive final exam, worth 40% of the final grade in the course. Exam material will come from required readings, lectures and Forum discussions.

- Final Comprehensive Exam (40 points)
40 MCQs on Exam Soft- December 3rd
- Class participation – (10 points) Assessed based on Forum discussion weekly (question on material will be posed once weekly on Forums, 100 % participate = 10, 90 %= 9 etc.)- 6 pm, November 27th
- Journal article review – (10 points)-details in addendum-6 pm, November 27th
- 3 Sakai quizzes each worth 5% of the grade (15 points)
 - Ophthalmology-6 pm, October 23rd
 - Pregnancy diagnosis and gestational aging-6pm, November 6th
 - Equine colic-6 pm, November 20th
- “Hurricane plan for SGU LARF herd” Assignment on Sakai (5 points)-rubric posted with assignment- 6 pm, October 30th
- Equine medical forms/protocols (20 points) (4 each worth 5 points; Vaccination protocol, Acupuncture form, Neurological form, Dentistry record)-rubric provided with the forms on Sakai (Resources)

- Vaccination protocol-6pm, August 28th
- Acupuncture form-6 pm, September 4th
- Neurological form-6pm, October 2nd
- Dentistry form-6pm, November 13th

Grading Policy: The final grade for this course reflects the exam scores. Below is the grading scale for this course:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

XIII. Recommended study strategies

Review available resources provided after each class. Assigned readings will be given.

XIV. Instructor’s expectations of the student

The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and examination policies.

XV. Professionalism statement

Please always exhibit professional behavior. Make note of due dates for online assignments and quizzes and ensure these are adhered to. Check announcements and emails regularly. Email communication to faculty and peers should be courteous and well thought out.

XVI. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered.

Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Weekly Forums participation is required to result in a 100% score in class participation (worth 10 points overall).

XVII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (s) (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 1-473-439-2000 ext. 3338) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XVIII. ExamSoft policy

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2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Exemplify on their laptop prior to exam day. Once Exemplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
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7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [An Examsoft/ExamID quick guide for students](#) (Please note that the current Exemplify version is **2.3.8**)
 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XIX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices

Table 1:

Lecture/ Lab	Description of Outcomes
1	Equine Behaviour & Welfare and Low-stress training techniques ✓ Describe a positive reinforcement training technique ✓ Describe a negative reinforcement training technique

	<ul style="list-style-type: none"> ✓ Demonstrate a positive training technique with an animal at home, cat, dog, horse etc. (Upload video.)
2	<p>Equine vaccinations</p> <ul style="list-style-type: none"> ✓ Review the core vaccines for horses ✓ Understand the use of additional vaccinations depending on risk factors ✓ Design a vaccination protocol for specific equine patients
3	<p>Acupuncture lecture</p> <ul style="list-style-type: none"> ✓ Complete an Eastern history when shown the patient ✓ Note the results of a body scan when shown a video of the procedure ✓ Complete an Eastern medicine acupuncture form based on the observations made of the patient
4	<p>Lameness videos; common forelimb and hind limb cases</p> <ul style="list-style-type: none"> ✓ Identify the affected limb of a dynamic lameness ✓ Assign an AAEP lameness score ✓ Interpret flexion testing ✓ Describe the process for completing a lameness exam
5	<p>Equine dermatology lecture</p> <ul style="list-style-type: none"> ✓ Obtain a history pertaining to a dermatological lesion when presented with an equine patient ✓ Select an appropriate diagnostic test to perform ✓ Suggest a treatment protocol when given a diagnosis
6	<p>Lameness case-carpal disease</p> <ul style="list-style-type: none"> ✓ Demonstrate mastery of carpal anatomy ✓ Knowledge of correct positioning of the patient for carpal imaging ✓ Diagnostic carpal radiographs interpreted correctly
7	<p>Neurological examination in horses</p> <ul style="list-style-type: none"> ✓ Describe how to perform a cranial nerve exam ✓ Complete a neurological form for a patient based on observing a video of the patient being examined
8	<p>Fracture stabilization in the field</p> <ul style="list-style-type: none"> ✓ Choose the appropriate stabilization technique for the fracture assigned ✓ Calculate the appropriate sedation dose, antibiotic dose and NSAID dose given the medications, weight and dosages ✓ Calculate a shock dose of fluids for an adult horse and a foal

9	<p>Lecture on current parasitology control options in horses</p> <ul style="list-style-type: none"> ✓ Each student able to identify anthelmintics that continue to work ✓ Each student able to describe two other means of controlling parasite levels in pasture
10	<p>Ophthalmology lecture</p> <ul style="list-style-type: none"> ✓ Observe technique for correct diagnostic testing and ocular blocks ✓ Digitally image an animal eye (fundus) using a Smartphone ✓ Understand the importance of ocular blocks and the ocular tests demonstrated for a variety of ocular conditions
11	<p>Equine Rescue Session & Disaster Preparedness</p> <ul style="list-style-type: none"> ✓ Formulate a hurricane plan for the LARF herd ✓ Identify 3 weaknesses on the LARF that might pose a danger during a storm.
12	<p>Pregnancy diagnosis in the mare and estimating gestational age of the foal</p> <ul style="list-style-type: none"> ✓ Identify US findings of a pregnant mare ✓ Understand the principles of aging a fetus ✓ Have a basic understanding of trans-abdominal ultrasound for pregnancy diagnosis.
13	<p>Dentistry lecture</p> <ul style="list-style-type: none"> ✓ Document dental findings on dental form provided ✓ Calculate appropriate sedation dose for the patient ✓ Age the patient based on images of teeth
14	<p>Colic cases</p> <ul style="list-style-type: none"> ✓ Calculate dosages of sedation and anti-spasmodics for a colic patient ✓ Calculate fluid rate for a colic patient ✓ Correctly differentiate a surgical colic from a medical colic based on information provided
15	<p>Podiatry class</p> <ul style="list-style-type: none"> ✓ Review correct hoof anatomy and common conformational issues ✓ Recognize a balanced foot/correct trim when presented with a variety of horses' hooves

Table 2:

Course Level Outcome#	SGU SVM Program Learning Outcome
	A. Core Medical Knowledge
1	PLO 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2, 3, 5	PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
2	PLO 03 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.
3,5, 6	PLO 06 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.
7	PLO 07 Evaluate and analyze normal versus abnormal animal behavior.
7	PLO 08 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.
	B. Core Professional Attributes
8	PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
8	PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.
	C. Core Clinical Competencies (Skills)
1,2	PLO 20 Execute a comprehensive patient diagnostic plan (differential diagnosis list) and demonstrate problem solving skills to arrive at a diagnosis.
1	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.
4,5	PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management.

Class Schedule

Week #1 Aug 17-21	Equine Behaviour & Welfare and Low stress training techniques
Week #2 Aug 24-28	Equine vaccinations
Week #3 Aug 31-Sept 4	Acupuncture lecture
Week #4 Sept 7-11	Lameness videos; common forelimb and hind limb cases
Week #5 Sept 14-18	Equine dermatology lecture
Week #6 Sept 21-25	Lameness case-carpal disease
Week #7 Sept 28-Oct 2	Neurological examination in horses
Week #8 Oct 5-9	Fracture stabilization in the field
Week #9 Oct 12-16	Lecture on current parasitology control options in horses
Week #10 Oct 19-23	Ophthalmology lecture
Week #11 Oct 26-30	Equine Rescue in the Field & Disaster Preparedness
Week #12 Nov 2-6	Pregnancy diagnosis in the mare and estimating gestational age of the foal
Week #13 Nov 9-13	Dentistry lecture
Week #14 Nov 16-20	Colic cases
Week #15 Nov 23-27	Podiatry class

Week #16 Nov 30-Dec 11	Final Exam - Date to be announced- Possibility of Wednesday, December 3rd.
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Addendum

Journal Article Review- 6 pm, November 27th

No more than 3 paragraphs summarizing a recent peer-reviewed journal article (2008-2020) on one of the following topics:

- Acupuncture use in horses-

E.g. for lameness, anhidrosis, back soreness

- Equine colic-

E.g. case reports, survivability post- surgery, effect of age on prognosis

- Apical infections/common dental problems in horses or donkeys
- Shoeing/trimming options for laminitic horses
- Vaccination protocols in the face of a viral outbreak (EEE, WNV, EHV-1 etc.)
- Treatment protocols in cases of natural disaster-e.g. wildfires

This can be submitted electronically via Word/PDF document attachment to ikarasek1@sgu.edu. The article title, journal name, volume and issue number as well as the date published & author(s) name to be given.

Rubric:

Recent Article (2008-2020)	2 pt.
Peer-reviewed journal (JAVMA, Equine Veterinary Journal, Veterinary Clinics of North America, Equine Veterinary Education etc.)	2 pt.
Relevance to topics given	2 pt.
Concise and accurate review	2 pt.
Discussion of importance to equine veterinary medicine	2 pt.

Small Animal Nutrition



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

Large Animal Medicine and Surgery Department

Basic Small Animal Nutrition (1 credit)

LAMS 540 Term 1

Fall 2020

I. Course Faculty and Staff information

Course director:

Dr. Catherine Werners-Butler Professor DVM, PhD, MRCVS, Dipl. ECEIM

Email: cwerners@sgu.edu

Contact via email and/or zoom office hours

Visiting Professor:

Dr. Cailin Heinze VMD, MS, DACVN

Chief Academic officer Mark Morris Institute

Please contact via Course Director: cwerners@sgu.edu

Staff members:

Ms Ruth Thornhill SVM Secretary

Email: RThornhill@sgu.edu

Ext: 3474

Ms Frances Emmanuel SVM Administrative Assistant

Email: FEmmanuel@sgu.edu

Ext: 3109

II. Course location

Sakai resources: Lessons / quizzes / assignments / forum

Mark Morris institute modules (a link for access will be provided in Sakai)

Zoom sessions (synchronous and asynchronous)

III. Prerequisite and/or co-requisite courses

Admission into the SVM program. Current registered Term 1 SVM student

IV. Required resources

Mark Morris modules (a link will be provided before the start of the course)

V. Recommended resources

Links to recommended sources for background information on small animal nutrition will be provided in Sakai

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Internet access & zoom account

VIII. Course rationale (catalogue course description)

This course is designed to familiarize the 1st term student with the different aspects of basic animal nutrition focused on small animal nutrition. Emphasis is placed on basic knowledge about how animals obtain, process and use feed and nutrients. This course is designed to give students a broad understanding of how nutrition is related to animal

health, production and performance of different companion animal species. Each of the nutrition concepts will be discussed in relation to its importance to overall health. The online practical/lab component of this course will help students to provide hands on skills and apply nutritional information into feeding the different species of companion animals.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Perform a nutritional assessment and identify nutrition risk factors for companion small animals based on a detailed diet history and accurately performing a body condition scoring / muscle scoring
2. Describe the main nutritional/physiological differences between dogs and cats and also their similarities
3. Calculate energy requirements and feeding amounts for healthy dogs and cats of all life stages, including large breed puppies. Be able to give recommendations on appropriate treating (% of calories, types, etc)
4. Evaluate commercial pet foods based on label information, manufacturer’s website, marketing materials, peer-reviewed literature when available
5. Identify the pros and cons of raw and home-cooked diets.
6. Identify risk factors for obesity and create a plan for both obesity prevention and treatment (i.e. weight loss plan) including an appropriate diet
7. Address common myths about pet food - grain-free, natural, by-products
8. Describe how pet food is regulated - what organizations are involved and which aspects they are responsible for?

X. Lesson-level outcomes:

Lecture /lab name and number	Your lecture/lab Learning Outcomes:	CLO #
1. General nutritional concepts for large and small animals	<p>1 – Understand the importance of food and food producing animals in society</p> <p>2- that different species have different nutritional requirements</p>	

<p>1. Nutritional assessment for small animal species</p>	<p>1- Identify and describe the steps involved in performing a nutritional assessment</p> <p>2- Compare and contrast muscle and body condition scoring</p> <p>3- List common dietary and patient risk factors that indicate a need for further evaluation</p> <p>4- Obtain a detailed diet history from a pet owner</p> <p>5- Describe the components of a good nutrition recommendation</p>	<p>1</p> <p>2</p> <p>2, 5, 6</p> <p>1</p> <p>2, 3</p>
<p>1. Introduction to Pet Foods & Feeding Pets</p>	<p>1- Compare and contrast forms of pet food – dry, wet, semi-moist, treats</p> <p>2- Categorize pet foods into common marketing classifications</p>	<p>4</p> <p>4</p>
<p>1. Pet Food Labels</p>	<p>1 Explain what AAFCO is and how it works</p> <p>2 Compare and contrast the role of the FDA vs AAFCO in pet food regulation</p> <p>3 Examine a pet food label and identify the major parts of the label and describe the importance of each</p> <p>4 Compare and contrast the different methods of determination of nutritional adequacy</p> <p>5 Describe the aspects of a pet food label that provide information on the nutritional quality or appropriateness of the diet versus those that are largely or completely marketing</p>	<p>8</p> <p>8</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p>

	<p>6 Define common pet food marketing terms and describe how these terms relate to the nutritional properties of a diet</p> <p>7 List the nutrients included in a guaranteed analysis and describe the limitations of the guaranteed analysis as a source of nutritional information</p>	
1. Pet Food Math	<p>1 Be able to describe the difference between nutrients being provided on an as-fed, as-packaged, dry matter, or energy basis</p> <p>2 Be able to interconvert nutrients between as-fed, as-packaged, dry matter, and energy basis (g/1000 kcal)</p>	<p>3</p> <p>3</p>
1. Alternative Diets	<p>1- Argue for and against the use of homecooked diets for healthy and for pets with health concerns</p> <p>2- List the factors that can contribute to nutritional adequacy concerns in homecooked diets</p> <p>3- Perform a preliminary assessment of homemade diet recipes based on the provided checklist</p> <p>4- Explain the major risks of feeding raw diets to a friend or colleague</p> <p>5- Differentiate between known and anecdotal attributes of raw diets</p>	<p>5</p> <p>5</p> <p>5</p> <p>5</p> <p>5</p>
1. Feeding healthy dogs and cats	<p>1- Select an appropriate diet for a pet of any lifestage</p> <p>2- Estimate energy needs for any pet</p> <p>3- Calculate a feeding dose for a</p>	<p>1, 2, 3</p> <p>3</p> <p>3</p>

	<p>specific pet using a given diet</p> <p>4- Compare and contrast the nutritional needs and physiology of dogs and cats</p> <p>5- Explain differences in nutrient needs for small breed vs large breed puppies</p> <p>6- Discuss the differences in nutritional needs between growth, reproduction, maintenance, and aged life stages</p>	<p>2</p> <p>1, 3</p> <p>2,3</p>
1. Dietary Supplements & Fatty Acids	<p>1- Explain how dietary supplements are regulated and potential concerns with their use</p> <p>2- Be able to discuss the pros and cons of commonly recommend joint supplements</p>	<p>7</p> <p>3,7</p>
1. Obesity	<p>1- List 3 serious health concerns associated with overweight/obesity for dogs and for cats</p> <p>2- List 3 risk factors for obesity for dogs and for cats</p> <p>3- Compare and contrast options for determining ideal body weight</p> <p>4- Compare OTC “weight management” diets to therapeutic weight loss diets</p> <p>5- Formulate a weight loss plan for a cat or dog to include initial calorie goal, diet, treats, amounts to feed of each, weight loss goals, and follow-up plan</p>	<p>6</p> <p>6</p> <p>1,6</p> <p>6</p> <p>6</p>
1. Pet Food Label Lab	<p>1- Locate and evaluate nutritional adequacy information on a pet food label</p> <p>2- Recognize products that have</p>	<p>4</p> <p>4,8</p> <p>8</p>

	the VOHC seal and be able to explain the differences between these products and other products without the seal that are marketed for dental benefits	3 4 4
	3- Utilize the AAFCO manual to look up pet food ingredients, label regulations, and protocols for determining nutritional adequacy.	
	4- Calculate the cost of feeding of a specific food for a specific pet	
	5- Describe common marketing categories and provide an example of a well-known diet that would fall into each category	
	6- Evaluate commercial diets for their suitability for a specific pet	

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Updates provided by the Visiting Professor will be posted as soon as possible. Updated learning lecture outcomes will be presented by the Visiting Professor at the beginning of each lecture and posted on Sakai.

XII. Course Schedule

	Activity/Topic	Format	Time on Task (hrs)
Week 9	General introduction to animal nutrition	Live & recorded	1
Week 9	Nutritional Assessment	E-module	1
Week 10	Intro to Feeding Pets	E-module	0,75
Week 10	Interpreting Pet Food Labels	E-module	1,25
Week 11	Selecting pet food/Q&A lecture	Live & recorded	1
Week 12	Online pet food label lab	Student assignment	2

Week 12		Live Zoom (attendance required)	
	Discussion of pet food lab		1
Week 13	Alternative Diets	E-module	1
Week 13	Pet Food Math lecture	Live & recorded	1
Week 14	Feeding Healthy Dogs & Cats	E-module	2
Week 15	Dietary supplements	Live & recorded	1
Week 15	Obesity	E-module	1
Week 16		Live Zoom (attendance required)	
	Case examples & Q&A		1

XIII. Grading and assessment policy, and grading rubrics

Examinations:

Your final grade will be made up of the following:

Participation in the modules and 2 mandatory live zoom sessions: 30%

Nutrition Lab assignment: 10%

Final exam: 60%

The exam material will come from E-modules / lecture slides and online “in-class” discussions. There will be approximately 2-3 questions from each lecture. The final exam date is listed below. Any deviation from the schedule will be announced on Sakai.

•Final Comprehensive Exam (60% of grade) Wednesday December 9th 11-12:15pm

Excuses from examinations will be accepted only with the use of the online “Medical Excuse” policy. Please consult the SVM Dean of Students office for additional information regarding acceptable excuses. Make-up examinations may be essay or short answer using ExamSoft.

Grading Policy: The final grade for this course reflects 2 scores. Below is the grading scale for this course:

>89.5%	A
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84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

XIV. Recommended study strategies

Prepare for the lectures by looking at the reading resources and participation in the E-modules. If after the lecture/s, you are still having difficulties with material or resources, please contact the course director immediately

XV. Instructor's expectations of the student

The student is expected to participate in the E-modules and zoom sessions. Students are encouraged to reach out for assistance timeously, if they find the course material challenging. The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and examination policies

XVI. Professionalism statement

Please exhibit professional behavior at all times. Please address any complaints either through your class representative or to the Course Director directly. Turn cell phones off or silence them during lectures

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School..

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - . [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - a. [The examsoft student perspective video 30mins](#)
 - b. [The Examsoft/ExamID FAQ](#)
 - c. [Examsoft information page](#)
 - d. [The general Reminders/Guidelines](#)

XX. Copyright policy (if applicable):

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ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
PROFESSIONAL DEVELOPMENT I (2cr)
LAMS 541 (Term 1)
FALL 2020

I. Course Faculty and Staff Information

Dr. Kerri Nigito, DVM

Course Director

Instructor, Department of Large Animal Medicine and Surgery

nigker1@sgu.edu

Office hours by appointment on Zoom. Please email anytime with questions or concerns.

Other lecturers/faculty:

Dr. Nicki Wise

Email: lnwise1@sgu.edu

Dr. Anne Corrigan

Email: acorrigan@sgu.edu

Dr. Austin Kirwan

Email: barnlodge@aol.com

Dr. Peter Slinger DES

Email: pslinger@sgu.edu

Dr. Adria Rodriguez

Email: airodriguez@sgu.edu

Dr. Paul Fields

Email: pfields@sgu.edu

Dr. Heidi Janicke

Email: hjanicke@sgu.edu

Dr. Cheryl Cox-Macpherson

Email: ccox@sgu.edu

Dr. Heather Douglas

Email:

doctordouglas@douglasanimalhospital.com

Dr. Satish Bidaisee

Email: sbidaisee@sgu.edu

Administrative Staff:

Ms. Keshia John

Email: kjohn5@sgu.edu

II. Course location

Online via synchronous Zoom sessions and asynchronous Panopto recordings

Online Sakai Site for resources, recordings, and assignments.

III. Prerequisite and/or co-requisite courses

- a. Current first term SVM student

IV. Required resources

- a. A functional computer with microphone and camera.

V. Recommended resources

- a. None

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

- a. None

VIII. Course rationale

- a. This course is the first of 6 courses within the curriculum focused on professional development. Through experiential learning methods including a 2-day workshop, students will be exposed to the concepts of non-technical attributes such as teamwork, communication, self and social awareness, and self-care that are vital to their success as a student and veterinarian. Specific coursework related to study skills, ethics, financial literacy and evidence-based medicine is included. This course provides the foundation for their time at SGU; developing a sense of community within their class as they grow together into young professionals.

IX. Course-level outcomes

- a. Upon completion of this course, students will be able to:
 - i. Discuss the fundamentals of the six domains of professional development
 - ii. Recognize the professional attributes of a successful veterinarian including attitude, appearance, respect, responsibility, self-awareness and social awareness, tolerance, and self-management.

X. Lesson-level outcomes

Lesson	Outcomes
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PAWS 2-day seminar	<ol style="list-style-type: none"> 1. Discuss the importance of and be able to recognize professional attributes of a successful veterinarian including attitude, appearance, respect, responsibility, self-awareness and social awareness, tolerance, and self-management. 2. Recognize the importance of team building and communication skills for a successful career in veterinary medicine. 4. Recognize the appropriate and inappropriate uses of social media for a professional career. 5. Compare and contrast effective and ineffective methods of conflict management within the context of challenging situations that may arise during veterinary school. 6. Recognize the various student support services at SGU and be able to effectively utilize these resources. These services include the Department of Educational Services and Psychological Services.
Domain 1: Professionalism lecture series	<ol style="list-style-type: none"> 1. Recognize the importance of externships and the role they play in advancing one's veterinary career. 2. Recognize the importance of mentorship, identify the characteristics of an effective mentor, and determine how to find an appropriate mentor for your career. 3. Recognize and discuss appropriate professional etiquette for interaction with faculty and potential employers. 4. Identify leaning strategies and study plans that will foster good time management and academic success. 5. Compose a "Class Code of Conduct" that is agreed upon and accepted by all students in the Term 1 class. 6. Recognize the importance of clinical communication for a successful career in veterinary medicine.
Domain 2: Wellness lecture series and faculty mentor group meeting	<ol style="list-style-type: none"> 1. Discuss common mental health issues (depression, suicide, bullying) plaguing veterinarians and be equipped with the tools necessary to help themselves and others should the need arise. 2. Recognize the skills that are necessary to cope with stress and test anxiety through a variety of methods. 3. Identify the various student support networks at SGU and discuss ways to seek help when difficult situations arise. 4. Compose a self-care regimen for discussion in small group.
Domain 3: Ethics and Welfare lecture series	<ol style="list-style-type: none"> 1. Appreciate the concept of ethics and moral action. 2. Discuss the nature of the person and nonhuman animals.

	<ol style="list-style-type: none"> 3. Describe the philosophy behind discovering the truth and birth of the professions and how this relates to societal responsibility. 4. Discuss the dynamics of a team, components, hierarchy and servant leadership. 5. Recognize and apply professionally informed consent in the 5-step process.
<p>Domain 5: Financial Literacy lecture series</p>	<ol style="list-style-type: none"> 1. Determine and apply the skills necessary for financial literacy as it pertains to reduction of student loan debt and personal responsibility. 2. Create a personal budget. 3. Understand the available opportunities for obtaining employment during breaks from school. 4. Understand the scholarship opportunities available to SGU students.
<p>Domain 6: Evidence-Based Veterinary Medicine</p>	<ol style="list-style-type: none"> 1. Explain the concept and importance of EBVM. 2. Be aware of the research opportunities at SVM SGU. 3. Know where to find the information and requirements to expand their research experience. 4. Give key examples of research projects (bat, aquatic animals, antimicrobial resistance research, public health) 5. Introduce dual degree, VSRI & IVSP programs (how many positions are available, application process, etc). 6. Describe the steps in the Research Method. 7. Distinguish between a Research question and a hypothesis; understand the role of the null hypothesis 8. Define a confidence interval and describe its purpose. 9. Describe data with measures of shape, center, and spread. 10. Calculate sample sizes and confidence intervals for tests of proportions and tests of means. 11. Choose appropriate statistical tests for testing proportions and means. 12. Describe the significance of public trust in science and scientific research; and discuss associated responsibilities of veterinary students, faculty, clinicians, and researchers. 13. Define the responsibilities of an IACUC, mechanisms through which IACUCs fulfill these responsibilities, and sources of guidance for IACUC members. 14. Identify and access ethics guidance regarding animal use in teaching and research, assess the credibility and relevance of that guidance, and apply it to case scenarios. 15. Develop skills essential to obtaining IACUC and IRB approval for animal use in teaching or research.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	Program Level Outcome
<p>Discuss the fundamentals of the six domains of professional development</p>	<p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. PLO 16 Demonstrate and model adaptability and resilience. PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p>
<p>Recognize the professional attributes of a successful veterinarian including attitude, appearance, respect, responsibility, self-awareness and social awareness, tolerance, and self-management</p>	<p>B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. PLO 16 Demonstrate and model adaptability and resilience.</p>

	<p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p>
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XII. Course Schedule

Faculty mentor group meetings will be scheduled based on Faculty availability in weeks 4-15 during the term. A schedule will be provided as a supplement on Sakai/Mycourses in the beginning of the term once faculty mentors are selected and assigned to faculty mentor groups.

Date / Hour	Lecture topic	Faculty	Assignment
Week 1- August 17-23			
Live Zoom Session Monday, August 17 th 1:00pm-3:00pm AST	PAWS Workshop Online & Asynchronous	PAWS Facilitators and Faculty	
Live Zoom Session Tuesday, August 18 th 1:00pm-3:00pm AST	PAWS Workshop Online & Asynchronous	PAWS Facilitators and Faculty	
Week 2 - August 24-30			
	Study Skills: Smart Start	Dr. Peter Slinger	
Live Zoom Session Thursday August 27 th 11:00am-12:00pm AST	Wellbeing in Veterinary Medicine	Dr. Adria Rodriguez	
Week 3 August 31- September 6			

	Personal Budgeting	Dr. Heather Douglas	
	Finance and Loans	Dr. Heather Douglas	
Week 4 - September 7- 13			
Live Zoom Session Thursday September 10 th 11:00am-12:00pm AST	Coping with Stress- Focus on Online Transition	Dr. Joanne Buckland	
	Job Opportunities During Breaks	Dr. Heather Douglas	
Week 5 - September 14 - 20			
	Scholarships & Grants	Dr. Heather Douglas	
Live Zoom Session Thursday September 17 th 11:00am-12:00pm AST	Your Veterinary Career	Dr. Kerri Nigito	Externship Assignment: Research 3 externship opportunities and why they would be helpful for your career Due: Tuesday, September 29th, 2020 by 11:00pm AST
Week 6 - September 21-27			
Live Zoom Session Thursday September 24 th 11:00am-12:00pm AST	Professional Etiquette and Code of Conduct	Dr. Kerri Nigito	Class Code of Conduct: Working in a shared document as a class develop a set of guidelines to follow and post on your class Facebook page Due: Tuesday, October 13th, 2020 by 11:00pm AST
Week 7 - September 28- October 4			
Live Zoom Session Thursday October 1 st 11:00am-12:00pm AST	Approach to Second Half of the Term	Dr. Peter Slinger	
Week 8 – Midterms - October 5 - 11			
Week 9 - October 12- 18			

Live Zoom Session Thursday October 15 th 1:30pm-3:30pm AST	Introduction to Ethics	Dr. Austin Kirwan	
Week 10 - October 19- 25			
Live Zoom Session Thursday October 22 nd 1:30pm-3:30pm AST	Animals in Society & The Role of the Vet	Dr. Austin Kirwan	
Week 11 - October 26-November 1			
Live Zoom Session Thursday October 29 th 11:00am-12:00pm AST	Intro to EBVM & Research at SGU	Dr. Heidi Janicke & Dr. Sonia Cheetham-Brow	
	Research Possibilities in PH	Dr. Satesh Bidaisee	Forum activity: COVID-19 and VPH Due: Tuesday, November 3rd by 11:00pm AST
Week 12 - November 2-8			
	Research Methods	Dr. Paul Fields	In class activity: Qualitative and quantitative research questions Due: Tuesday, November 10th by 11:00pm AST on Sakai
	Responsible Conduct of Research in Veterinary Medicine	Dr. Cheryl Cox- Macpherson	
Week 13 - November 9-15			
	Scientific Inquiry	Dr. Paul Fields	In class activity: Go through the steps of the inquiry process with one of your research questions Due: Tuesday, November 17th by 11:00pm AST on Sakai
Live Zoom Session Thursday, November 12 11:00am-12:00pm AST	Wellness Check In – Focus on Support	Dr. Adria Rodriguez	None

XIII. Grading and assessment policy, and grading rubrics

- a. The course will be graded Pass/Fail. A grade of passing will be determined by:
 - i. Successful completion of 2 assignments (see below)
 - ii. Mandatory attendance at the Faculty mentor meeting
 - iii. Mandatory engagement in the course content which includes:
 1. Attendance of all synchronous Zoom sessions
 2. Review of all asynchronous recorded seminars
 3. Completion of “in-class” assignments and activities.
 4. Completion of weekly lesson checklists.
 - iv. No unexcused absences are allowed. Any absences or technical difficulties must be immediately addressed by emailing the course director (Dr. Kerri Nigito nigker1@sgu.edu). Failure to attend mandatory meetings, lectures, and/or engage in course content will result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

Course Assignments:

1. **Externship Assignment:** Identify three potential Summer Externship opportunities that would be beneficial for your career goals. For each opportunity, include a 1-2 paragraph summary that highlights the type of mentors you would like to work with and the specific experiences that you would like to gain. Briefly describe how this opportunity will advance your career. Graded pass/fail based on a rubric encompassing the important components of the assignment. This assignment will be covered in more detail during the seminar “Your Veterinary Career” on September 24th. **The Due Date for this assignment is Tuesday, September 29th** . Assignments must be uploaded as a **single PDF document** in My Courses (Sakai) before the due date expires.

2. **Professional Development Group Meeting/Self Care Regimen Assignment:** Students meet with their assigned group and faculty mentor to discuss wellbeing in our profession and how to develop a regimen for self-care/wellness. Students will then submit their proposed self-care regimen encompassing emotional, spiritual, social and physical aspects to their faculty mentor. **The Due Date for this assignment will be determined by your assigned faculty mentor.**

A passing grade is determined by attending the mandatory meeting and completing the assignment. Due to the variability that will naturally be present in such an assignment, a rubric cannot be used. If the group interaction or assignment quality is inadequate and indicates the need for faculty intervention or remediation, this will be discussed with the course director to find an appropriate solution. Failure to meet these minimum standards will require one-on-one remediation with the course director and/or the faculty mentor before being allowed to progress to Term 2. Remediation will be tailored to the deficiency and the individual.

XIV. Recommended study strategies

- a. Remain engaged throughout the course to benefit from the various active learning activities.

XV. Instructor's expectations of the student

- a. The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment submission.
- b. The student is expected to communicate with the Course director professionally and in a timely manner in the event of technical difficulties, inability to attend lectures or hand in assignments on time for any reason.

XVI. Professionalism statement

- a. Please exhibit professional and respectful behavior at all times to colleagues, faculty and staff. Turn cell phones off or silence them during lectures. Please be on time and engaged in course content.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Attendance is mandatory for all Term 1 students during the PAWS Workshop, all professionalism lectures and the professional group meetings. One unexcused absence will result in course failure and the student may be placed on non-academic probation by the CAPPS committee. Students are also expected to be on time; arrival after attendance has been taken, or leaving before the end of class will count as an absence. Any student unable to adhere to the attendance policies of this course is mandated to complete the online "Medical Excuse Submission" form PRIOR to missing the required activity. Failure to complete the "Medical Excuse Submission" form will result in an unexcused absence. Please communicate with the Course Director (Dr. Kerri Nigito nigker1@sgu.edu) immediately in the event of an unexpected absence due to extenuating circumstances.

Mandatory engagement and participation expectations:

- i. Mandatory attendance at the Faculty mentor meeting

- ii. Mandatory engagement in the course content which includes:
 1. Attendance of all synchronous Zoom sessions
 2. Review of all asynchronous recorded seminars
 3. Completion of all “in-class” assignments and activities.
 4. Completion of weekly lesson checklists.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

Failure to submit any assignment or submit an assignment late will result in **course failure AND the student may be placed on non-academic probation by the CAPPS committee.**

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been

successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Exemplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices (if applicable):

Course Schedule

CLOs

LLOs

PLO to CLO mapping

Rubrics



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
PROFESSIONAL DEVELOPMENT II SYLLABUS (2 credits)
LAMS 542 TERM 2
FALL 2020

I. Course Faculty and Staff Information

Course Director:

Adria Rodriguez, DVM, MSc, CVA, CVCH, MS TCVM
Associate Professor, Small Animal Medicine and Surgery
Wellbeing, Diversity and Inclusion Officer, SVM
Email: AIRodriguez@sgu.edu
Office Hours: By appointment

Course Faculty:

Domain 1: Personal Development (PD) - Dr. Brian Butler (bbutler@sgu.edu)
Domain 2: Wellness (W) - Dr. Adria Rodriguez (airodriguez@sgu.edu)
Domain 3: Ethics and Welfare (EW) - Dr. Austin Kirwan (akirwan@sgu.edu)
Domain 4: Communication (C) -Dr. Nicki Wise (lnwise1@sgu.edu)
Domain 5: Business and Financial Literacy (BFL) - Dr. Heather Douglas
(hdouglas@sgu.edu)
Domain 6: Evidence-Based Veterinary Medicine (EBVM) - Dr. Heidi Janicke
(hjanicke@sgu.edu)

Collaborating Faculty:

Dr. Joanne Buckland (jbucklan@sgu.edu)
Ms. Heather Brathwaite (hbrathwaite@sgu.edu)
Ms. Jill Paterson (jpaterso@sgu.edu)

Course Assistant: Ms. Keshia John (kjohn5@sgu.edu)

Faculty Mentors

II. Course location: ONLINE Live Zoom Seminars
ONLINE Sakai *Weekly Requirements*

III. Prerequisite and/or co-requisite courses:

Current Term 2 Student
LAMS 541: Professional Development I

IV. Required resources:

Software requirements: Sakai, Zoom, Panopto, Turning Point Mobile, Google Drive, Google Slides, Socrative

V. Recommended resources:

Text: *The Art of Veterinary Practice Management*, 2nd ed., 2014; M. Opperman

VI. Special accommodation

A. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

B. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Equipment: Desktop or laptop computer, and/or tablet or other smart mobile device; functional camera, speakers and microphone
Reliable internet connection

VIII. Course rationale

This course is the second of six courses within the curriculum focused on professional development. Through experiential learning methods, students will be exposed to topics and skills related to personal development, self-care, ethics and animal welfare, communication skills, business and financial literacy, and evidence based veterinary medicine.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to discuss and model the fundamentals and skills covered in the six professional development domains: personal development, wellness, ethics and welfare, communication, business and financial literacy, and evidence-based veterinary medicine.

X. Lesson-level outcomes

Domain 1- Personal Development:

1. Compose a professional letter of intent that may be used to communicate with potential externship clinics, mentors and/or employers in your desired field
2. Construct professional curriculum vitae that may be used for future applications and will be maintained and updated throughout your career
3. Discuss non-traditional careers in veterinary medicine including specialization

Domain 2-Wellness:

1. Define the meaning of the practice of mindfulness
2. Describe the benefits of practicing mindfulness
3. Apply mindfulness principles to personal and professional life
4. Define self-compassion
5. Describe the benefits of applying self-compassion
6. Apply self-compassion to personal life and in a professional setting
7. Define QPR
8. Apply QPR/Kognito Principles by: Recognizing the warning signs of suicide - Knowing how to offer hope -Knowing how to get help and save a life
9. Apply prevention, intervention, and postvention in a crisis.

Domain 3-Ethics and Welfare:

1. Differentiate between clinical care and research.
2. Discuss the role of clinical research and trials and compare human and veterinary research limitations.
3. Evaluate the function of journal clubs in practice and how to peer review a paper with an open mind.
4. Describe the components of EBVM and the interface between clinical skills/availability, research and owner preferences.
5. Evaluate the value of each component and make judgements informing sound clinical care to ensure animal welfare.
6. Introduce the concept of lifelong learning and how this is a professional responsibility.
7. Determine opportunities for learning, how they will be highlighted, identified, and recorded.
8. Appraise the learning required by regulatory bodies in the jurisdiction they are going to practice and record and report them as required.
9. Identify who you communicate with nonverbally.
10. Develop the links of between stake holders in nonverbal communication, e.g. Professional bodies, insurers, clients, patients, etc.

11. Understand the consequences of incorrect or lack of communication, i.e. RCVS v. Mulvey (2018).
12. Diagnose the pathology of a communication breakdown and introduce how to remediate poor communication.
13. Manage and develop clinical governance systems in the light of best and poor practice of nonverbal communication.
14. Determine how money is accounted for in a business.
15. Analyze practice accounts to determine how one can ethically manage money while ensuring animal welfare.

Domain 4-Communication:

1. Be introduced to the basics of clinical communication with the Calgary Cambridge Guide.
2. Identify appropriate non-verbal communication skills.
3. Discuss the key components of initiating a client interaction and negotiating the agenda.
4. Define feedback and review guidelines for giving and receiving it effectively.
5. Complete an effective client interview focusing on: a. Initiating the session and negotiating the agenda b. Recognizing and reacting to verbal and non-verbal cues from the client
6. Practice giving feedback to their peers.
7. Practice receiving feedback from their faculty coaches, peers and simulated clients.
8. Engage in self-assessment techniques by reflecting on the interviews and determining what improvements can be made.

Domain 5-Business and Financial Literacy:

1. Understand basic financial terminology and theory applicable to owning and/or working in a veterinary practice.
2. Perform a self-assessment of the personal budget and discuss areas for improvement.

Domain 6-Evidence-Based Veterinary Medicine:

1. Review resources, tools and methods available in searching for veterinary medical information.
2. Review ways to obtain articles in full text.
3. Identify the significance and key components of a literature review.
4. Identify the importance and function of style guides.
5. Recognize the importance of professional writing in research.
6. Produce clear, concise, unbiased, academic/scientific writing.
7. Identify different types of scientific writing.
8. Identify key points for organizing poster and oral presentation.
9. Recognize elements of an abstract.

10. Review and evaluate abstracts.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	Program Level Outcome
Discuss the fundamentals of the six domains of professional development	B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. PLO 16 Demonstrate and model adaptability and resilience. PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.

XII. Course Schedule

See Appendix: LAMS 542 Seminar and Assignment Schedule

XIII. Grading and assessment policy, and grading rubrics

- A. The course will be graded Pass/Fail. A grade of passing will be determined by:
 - i. Successful completion of 4 assignments (see below)
 - ii. Mandatory attendance-Faculty mentor meeting
 - iii. Mandatory engagement in the course content which includes:
 - 1. Attendance of all synchronous Zoom sessions
 - 2. Review of all asynchronous recorded seminars

3. Completion of “in-class” assignments and activities.
4. Completion of weekly requirements checklists.

Unexcused absences are not allowed. Any absences or technical difficulties must be immediately addressed by emailing the course director (Dr. Adria Rodriguez at airodriguez@sgu.edu). Failure to attend mandatory meetings, lectures, and/or engage in course content without following the appropriate reporting/excused absence protocols outlined in Section XIII may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

B. Course Assignments: Listed below are descriptions of the assignments to be encountered in the course. COMPLETE assignment and rubric (if applicable) information will be found in Sakai when the assignment opens. Students will be advised when an assignment opens.

1. Domain 1 PD: CV and Letter of Intent Workshop
(**DUE DATE: Week 11-Sunday, November 1, 11:59pm AST**)

All students will participate in this 2-hour seminar focused on the development of a curriculum vita **via Zoom on Tuesday October 13th at 11:00am AST**. In addition, each student will also prepare a professional Letter of Intent, which can be used to seek externship positions, or be modified to apply to other career opportunities. During the 2-hour seminar students will be provided with instruction and also given class time to work on their CVs and Letters. Following this workshop, students must upload their CV in Sakai Assignments as a single PDF file. The assignment is listed in Sakai as: Domain 1 PD: CV Workshop Assignment. Each student’s respective Professionalism Group Mentor will review assignments, and each student will receive feedback from their mentor before the end of the term.

2. Domain 2 W: QPR/Kognito Certificate
(**DUE DATE: Week 4-Sunday, September 13, 11:59pm AST**)

All students will complete the QPR and Kognito training. Upon successful completion, students will upload their certificates in Sakai.

3. Domain 3 EW: Ethics and Welfare Scenario Review and Discussion
(**DUE DATE: Week 7 Sunday October 4th 11:59 pm AST**)

All students will review 2 veterinary ethics/welfare scenario videos and answer the relevant questions in Sakai. Assignments will be reviewed by the faculty mentors who will give students the necessary feedback.

4. Domain 4 C: Communication Skills Video Review and Peer Assessments
(DUE DATE: Week 14 Sunday November 22 11:59pm AST)
 - a. All students will review 2 videos and will observe interactions for different communications skills used/not used. Students will complete a set of questions in Sakai.
 - b. All students will record themselves as directed in the assignment in Sakai. Students will be matched with a partner and the two will assess and provide feedback to each other as directed in the assignment.

5. Domain 6 EBVM: Developing a Clinical Question, Identifying PICO elements and Answering a Clinical Question (3 different DUE DATES, see below)

This is a 3-part assignment and all details will be found on Sakai. An assignment video will be provided to be reviewed before starting the assignment as an aid for completing it successfully. Below is a brief synopsis and the due dates for each part:

- a. Part A: Form a group of two students and decide on a clinical scenario from the assignment brief. Enter your group and chosen scenario into the Excel document.
DUE DATE: Week 6 Sunday Sept 27 11:59 pm AST
- b. Part B: Using the information from the PD I & II EBVM lectures, assignment brief, and rubric fill in the worksheet by developing a PICO question and performing a search. Identify 3 relevant papers and chose the most relevant paper for Part C.
DUE DATE: Week 7 Sunday Oct 4 11:59pm AST
- c. Part C: Using the information from the PD I & II EBVM lectures, assignment brief and rubric, fill in the worksheet appraising the introduction and methods of the chosen paper (Part B).
DUE DATE: Week 12 Sunday Nov 8 11:59pm AST

XIV. Recommended study strategies

Course content will be release week by week. Students must visit the weekly requirements tab in Sakai to ensure they complete all the necessary requirements and use the checklist to aid in staying on track. Once all live and Panopto seminars are viewed and the different activities and assignments are completed, the student will have successfully attained the intended knowledge and will have achieved the course

learning outcome.

XV. Instructor's expectations of the student

- a. The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment submission.
- b. The student is expected to communicate with the Course director professionally and in a timely manner in the event of technical difficulties, inability to attend lectures or hand in assignments on time for any reason.
- c. Do not check off boxes on the weekly requirement checklists if you have not completed a task.

XVI. Professionalism statement

Always exhibit professional and respectful behavior towards colleagues, faculty and staff. Please be on time and engaged in course content as directed. Student's may be required to turn on their cameras during live sessions. Please be mindful of this regarding attire and surroundings. If you are asked to turn on your camera and you are not able to, please email your lecturer in advance prior to the live session.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Zoom Synchronous Seminar Attendance policy: Attendance is mandatory. If a student has received an excused absence or there are external circumstances which are communicated to the course director in a timely manner, students will be required to view the video of the lecture within a week of the session.

Panopto Asynchronous Activities Engagement Policy: Every requirement in the Weekly Requirements and checkbox of the week's checklist for the week **MUST** be completed by Sunday 11:59pm AST of that week. **Do not check off boxes if you have not completed a task.**

XVIII. Policy regarding failure of submission of assignments

Students who fail to submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the assignment.

Students who have technical issues during assignment submission MUST inform the Course Director (Dr. Adria Rodriguez airodriguez@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible for a remediation.

Scheduling of remediations is at the discretion of the School.

Failure to submit any assignment or late submission of an assignment may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

XX. Copyright policy:

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Appendices:

LAMS 542 Seminar Schedule (All times in AST)

LAMS 542 Assignment Schedule (All times in AST)

LAMS 542 Seminar Schedule– Fall 2020 (23 hours)

Week/Date/Time	Seminar Topic	Faculty	Modality
Week 1 Aug 17-21 Tuesday Aug 18 (11-12)	Welcome/Course Introduction/Logistics	Dr. Adria Rodriguez	Zoom (1 hour)
Week 2 Aug 24-28 Tuesday Aug 25 (11-1)	Mindfulness and Self-Compassion in Veterinary Medicine	Dr. Adria Rodriguez	Zoom (2 hours)
Week 3 (Aug 31-Sept 4)	Introduction to Communication Initiating the Client Interview	Dr. Nicki Wise	Panopto (1 hour)
	Giving Feedback		Panopto (1 hour)
Week 4 (Sept 7-11) Tuesday Sept 8 (11-1)	Ethics in Scientific Research and Writing/ Ethics in EBVM and Learning in Practice	Dr. Austin Kirwan	Zoom (2 hours)
Week 5 (Sept 14-18) Tuesday Sept 15 (11-1)	Developing an Ethical Professional Approach to Life-long Learning	Dr. Austin Kirwan	Zoom (2 hours)
	The ethics of money		
Week 6 (Sept 21-25) Tuesday Sept 22 (11-1)	Informatics for Veterinary Medicine	Ms. Suzanne Paparo	Zoom (1 hour)
Week 6 (Sept 21-25)	Literature Review and Reference Management	Ms. Jill Paterson	Panopto (1 hour)
Week 7 (Sept 28-Oct 2)	Scientific Writing	Ms. Heather Brathwaite	Panopto (1 hour)
Week 7 (Sept 28-Oct 2)	Presenting Research	Ms. Jill Paterson	Panopto (1 hour)
Week 8 (Oct 5-9) MIDTERMS			
Week 9 (Oct 12-16) Tuesday Oct 13 (11-1)	CV and Letter of Intent Workshop	Dr. Brian Butler	Zoom (2 hours)
Week 10 (Oct 19-23)	ESCAPE Debt-Leave ROOM for Personal and Professional Growth	Dr. Heather Douglas	Panopto (1 hour)
Week 10 (Oct 19-23)	Practice Culture-Environmental Analysis of a Healthy Workplace	Dr. Heather Douglas	Panopto (1 hour)
Week 11 (Oct 26-30)	Budgeting (Again!)-Saving, Spending, and Self-Awareness	Dr. Heather Douglas	Panopto (1 hour)
Week 12 (Nov 2-6)	Crafting Your Life Simulation and Debriefing	Dr. Heather Douglas	Panopto (1 hour)
Week 13 (Nov 9-13) Tuesday Nov 10 (11-1)	Navigating towards Internship and Residency	Dr. Brian Butler	Zoom (2 hours)
Week 14 (Nov 16-20) Tuesday Nov 17 (11-1)	Non-Traditional Career Paths in Veterinary Medicine	Dr. Brian Butler	Zoom (2 hours)

LAMS 542 Assignment/Self Study Schedule– Fall 2020 (7 hours)

Due Date/ Sunday of Week #	Assignment/Mentor Meeting	Responsible Faculty
Week 4 Sunday September 13, 11:59pm AST (2 hours)	QPR/Kognito Training	Dr. Adria Rodriguez
Part A-Teams: Week 6 Sunday Sept 27 11:59 pm AST Part B-PICO Week 7 Sunday Oct 4 11:59pm AST Part C Database Search Week 12 Sunday Nov 8 11:59pm AST (3 hours total)	Creating and Answering a Clinical Question/PICO	Dr. Heidi Janicke
Week 7 Sunday October 4 11:59pm AST (3 hours)	Ethics Case Scenarios	Dr. Austin Kirwan/Mentors
Week 11 Sunday November 1st 11:59pm AST (2 hours)	CV/Letter of Intent	Dr. Brian Butler/Mentors
Week 14 Sunday November 22nd 11:59pm AST (4 hours)	Communication	Dr. Nicki Wise



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
PROFESSIONAL DEVELOPMENT III SYLLABUS (2 credits)
LAMS 543 TERM 3
FALL 2020

I. Course Faculty and Staff Information

Co-Course Directors:

Adria Rodriguez, DVM, MSc, CVA, CVCH, MS TCVM
Associate Professor, Small Animal Medicine and Surgery
Wellbeing, Diversity and Inclusion Officer, SVM
Email: AIRodriguez@sgu.edu
Office Hours: By appointment

Austin Kirwan, M.A., M.B.A., B.V.SC., M.R.C.V.S.
Veterinary Surgeon and Medical Ethicist and Assistant Dean for UK Clinical Affairs
Email: AKirwan@sgu.edu
Office Hours: By Appointment

Course Faculty:

Domain 1: Personal Development (PD) - Dr. Brian Butler (bbutler@sgu.edu)
Domain 2: Wellness (W) - Dr. Adria Rodriguez (airodriguez@sgu.edu)
Domain 3: Ethics and Welfare (EW) - Dr. Austin Kirwan (akirwan@sgu.edu)
Domain 4: Communication (C) -Dr. Nicki Wise (lwise1@sgu.edu)
Domain 5: Business and Financial Literacy (BFL) - Dr. Heather Douglas
(hdouglas@sgu.edu)
Domain 6: Evidence-Based Veterinary Medicine (EBVM) - Dr. Heidi Janicke
(hjanicke@sgu.edu)

Course Assistant: Ms. Keshia John (kjohn5@sgu.edu)

Faculty Mentors

II. Course location: ONLINE Live Zoom Seminars
ONLINE Sakai *Weekly Requirements*

III. Prerequisite and/or co-requisite courses:

Current Term 3 Student
LAMS 542: Professional Development II

IV. Required resources:

Software requirements: Sakai, Zoom, Panopto, Turning Point Mobile, Google Drive, Google Slides, Socrative

V. Recommended resources: N/A

VI. Special accommodation

A. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

B. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Equipment: Desktop or laptop computer, and/or tablet or other smart mobile device; functional camera, speakers and microphone
Reliable internet connection

VIII. Course rationale

This course is the third of six courses within the curriculum focused on professional development. Through experiential learning methods, students will be exposed to topics and skills related to personal development, self-care, ethics and animal welfare, communication skills, business and financial literacy.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to discuss and model the fundamentals and skills covered in the six professional development domains: personal development, wellness, ethics and welfare, communication, business and financial literacy.

X. Lesson-level outcomes

Domain 1-Personal Development:

1. Define and understand emotional intelligence and its four components: self-awareness, self-management, social awareness and relationship management.
2. Describe and model the effective practice of emotional intelligence and how it relates to enhancing the individual's overall wellbeing in their personal and professional lives
3. Practice enhancing one's emotional intelligence through veterinary scenarios and role play
4. Review the MBTI personality types
5. Determine one's own MBTI profile and the strengths and opportunities for each profile type
6. Discuss how being tolerant of other personality profiles is essential for successful teamwork

Domain 2-Wellness:

1. Describe the perfectionism complex
2. Understand the benefits and challenges of perfectionism
3. Understand the link between perfectionism, anxiety and other mental disorders
4. Reflect on personal experiences and identify traits of perfectionism in themselves
5. Create a plan to cope and control any identified traits of perfectionism
6. Describe imposter syndrome
7. Describe the 5 types of imposter syndrome and the challenges imposter syndrome presents, such as links to anxiety and other mental disorders
8. Reflect on personal experiences and identify symptoms in themselves
9. Create a plan to cope and control any identified traits of imposter syndrome
10. Know the history and elements of eCPR
11. Understand the benefits of practicing eCPR
12. Practice and apply the basics of eCPR
13. Understand the certification process

Domain 3-Ethics and Welfare:

1. Recognize when welfare has been compromised and in medical practice judge and apply proportionate and disproportionate treatment.
2. Design treatment protocols which are in the best interest of welfare.
3. Compare and contrast euthanasia, disthansia and benemortasia and how they relate to welfare, legal and professional responsibilities and judge when such pathways should and should not be used.
4. List the 5 freedoms, carry out a welfare assessment and create action plans to restore welfare.
5. Apply a welfare decision tree to practical situations and reflect on its efficacy.

6. Summarize an understanding of professional conduct and regulatory practice and apply this to professional practice.
7. Summarize the rights and responsibilities of employment law and comparisons made between the USA and UK making a judgement on what is ethical.
8. Recognize the need and finding support networks for professional practice and generating a professional survival strategy.

Domain 4-Communication:

1. Determine a strategy for handling a medical error
2. Identify the communication skills necessary to discuss medical errors
3. Discuss commonly encountered "difficult" communication scenarios and practice how to address them
4. Discuss how veterinarians protect themselves from commonly encountered medical and communication errors

Domain 5-Business and Financial Literacy:

1. Perform a self-assessment of the personal budget and detect areas for improvement
2. Communicate and negotiate to best advocate for needs within a practice while showing utmost respect towards the existing ownership/ownership team.
3. Discuss the attributes of an effective team member within a veterinary practice/setting.
4. Discuss what shapes the "culture" of a practice and what role the new veterinarian plays in that culture

Domain 6-Evidence-Based Veterinary Medicine:

(New) Discuss how personal and professional wellbeing is enhanced by practicing evidence-based veterinary medicine.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	Program Level Outcome
Discuss the fundamentals of the six domains of professional development	<p>B. Core Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client</p>

	<p>relations, such as, honesty, respect, integrity and empathy</p> <p>PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.</p> <p>PLO 16 Demonstrate and model adaptability and resilience.</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p>
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XII. Course Schedule

See Appendix: LAMS 543 Seminar, Assignment, and Group Mentor Meeting Schedule (Group meetings will be finalized once mentor availability is confirmed. Potential dates are listed in the schedule)

XIII. Grading and assessment policy, and grading rubrics Grading scale: Pass or Fail

- A. The course will be graded Pass/Fail. A grade of passing will be determined by:
 - i. Successful completion of 4 assignments (see below)
 - ii. Mandatory attendance-Faculty mentor meeting
 - iii. Mandatory engagement in the course content which includes:
 - 1. Attendance of all synchronous Zoom sessions
 - 2. Review of all asynchronous recorded seminars
 - 3. Completion of “in-class” assignments and activities.
 - 4. Completion of weekly requirements checklists.
 - iv. Unexcused absences are not allowed. Any absences or technical difficulties must be immediately addressed by emailing co-course directors (Dr. Adria Rodriguez at airodriguez@sgu.edu and Dr. Austin Kirwan at akirwan@sgu.edu). Failure to attend mandatory meetings, lectures, and/or engage in course content without following the appropriate reporting/excused absence protocols outlined in Section XIII

may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

B. Course Assignments: Listed below are descriptions of the assignments to be encountered in the course. COMPLETE assignment and rubric (if applicable) information will be found in Sakai when the assignment opens. Students will be advised when an assignment opens.

1. Domain 2 W: Reflective Journaling-Perfectionism and Imposter Syndrome **(DUE DATE: Week 7-Sunday, October 2nd, 11:59pm AST)**

All students will provide reflections on the topics of perfectionism and imposter syndrome in the format and platform provided for the assignment in Sakai.

2. Domain 3 EW: Self-Study and Lecture Discussion Preparation **(DUE DATE: Sundays of Week 9, 10, 11 11:59pm AST)**

All students will review and/or complete the resources provided by Dr. Kirwan weekly in preparation for the Ethics lectures, for a total of three weeks. These resources will be provided and labelled as such within the Weekly Requirements for the week.

3. Domain 3 EW: Reflective Journaling-My current thoughts on Ethics and Welfare **(DUE DATE: Week 12-Sunday, November 8, 11:59pm AST)**

All students will provide reflections on an Ethics and Welfare topic of their choice and to which they have been exposed already during Term 1 through Term 3 in the format and platform provided for the assignment in Sakai.

4. Domain 4 C: Communication - Medical Errors **(DUE DATE: November 22 11:59pm AST)**

Students will be exposed to an interaction which will include the communication of medical errors. Students will indicate their observations in the format and platform provided in Sakai.

C. Faculty Mentor/Group Meeting:

Domain 2 Wellness Professional Development Meeting:

Students in their faculty/mentor groups will practice and apply the basics of emotional CPR in practical relevant scenarios. These basics will be provided in a seminar before the faculty mentor meetings are scheduled. Groups will meet during ONE of the proposed dates within Weeks 5, 9, 10, 11: Thursday Sept 17, Monday Oct 12, Tuesday Oct 20, Tuesday Oct 27, or Tuesday Nov 3. The times will be 1:00-5:00pm AST for all dates. The date for your group will be confirmed once we have confirmed availability from faculty mentors. Each group meets ONCE.

XIV. Recommended study strategies

Course content will be release week by week. Students must visit the weekly requirements tab in Sakai to ensure they complete all the necessary requirements and use the checklist to aid in staying on track. Once all live and Panopto seminars are viewed and the different activities and assignments are completed, the student will have successfully attained the intended knowledge and will have achieved the course learning outcome.

XV. Instructor's expectations of the student

- a. The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment submission.
- b. The student is expected to communicate with the Course director professionally and in a timely manner in the event of technical difficulties, inability to attend lectures or hand in assignments on time for any reason

XVI. Professionalism statement

Always exhibit professional and respectful behavior towards colleagues, faculty and staff. Please be on time and engaged in course content as directed. Student's may be required to turn on their cameras during live sessions. Please be mindful of this regarding attire and surroundings. In the event that our are asked to turn on your camera and you are not able to, please email your lecturer in advance prior to the live session.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Zoom Synchronous Seminar Attendance policy: Attendance is mandatory. If a student has received an excused absence or there are external circumstances which are communicated to the course director in a timely manner, students will be required to view the video of the lecture within a week of the session.

Panopto Asynchronous Activities Engagement Policy: Every requirement in the Weekly Requirements for the week **MUST** be completed by Sunday 11:59pm AST of that week. **Do not check off boxes if you have not completed a task.**

Zoom Group Mentor Meeting Attendance/Engagement Policy: Attendance is mandatory for the group mentor meeting. Excused absence guidelines need to be followed in the event you are not able to attend to avoid receiving an unsatisfactory grade in the course.

XVIII. Policy regarding failure of submission of assignments or missing mandatory course requirements

Students who fail to submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination **MUST** inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of remediations is at the discretion of the School.

Failure to submit any assignment or late submission of an assignment may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

XX. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

LAMS 543 Seminar Schedule (All times in AST)

LAMS 543 Assignment/Group Meeting Schedule (All times in AST)

LAMS 543 Seminar Schedule– Fall 2020 (22 hours)

Week/Date/ Time	Seminar Topic	Faculty	Modality
Week 1 (Aug 17-21) Monday Aug 17 (11-12)	Welcome/Course Logistics/Wellness Check In	Dr. Adria Rodriguez	Zoom (1 hour)
Week 1 (Aug 17-21)	Budgeting for the Savvy Vet Student: Saving, Spending, and Living Large	Dr. Heather Douglas	Asynchronous (1 hour)
Week 2 (Aug 24-28)	Your Best Self as a Part of the Best Team	Dr. Heather Douglas	Asynchronous (2 hours)
Week 3 (Aug 31-Sept 4)	Workplace Culture: Avoiding the Shock	Dr. Heather Douglas	Asynchronous (2 hours)
Week 4 (Sept 7-11) Monday Sept 7 (11-1)	Emotional CPR (eCPR): Connecting, emPowering and Revitalizing others in time of crisis	Dr. Adria Rodriguez	Zoom (2 hours)
Week 5 (Sept 14-18) Monday Sept 14 (11-12)	Imposter Syndrome in Vet Med	Dr. Adria Rodriguez	Zoom (1 hour)
Week 6 (Sept 21-25) Monday Sept 21 (11-1)	Perfectionism and Veterinary Medicine	Dr. Adria Rodriguez	Zoom (2 hours)
Week 7 (Sept 28-Oct 2)	MBTI	Dr. Brian Butler	Asynchronous (1 hour)
Week 9 (Oct 12-16)	Difficult Conversations: Communicating about Medical errors	Dr. Nicki Wise	Asynchronous (2 hour)
Week 10 (Oct 19-23) Monday Oct 19 (1-2)	Clinical Decision Making I	Dr. Austin Kirwan	Zoom (1 hour)
Week 11 (Oct 26-30) Monday Oct 26 (1-2)	Clinical Decision Making II	Dr. Austin Kirwan	Zoom (1 hour)
Week 12 (Nov 2-6) Monday Nov 2 (1-2)	Professional Conduct, Negligence, and Employment Law, and Support networks	Dr. Austin Kirwan	Zoom (1 hour)
Week 12 (Nov 2-6)	Fostering Wellbeing by Practicing EBVM	Dr. Heidi Janicke/ Dr. Adria Rodriguez	Asynchronous (1 hour)
Week 13 (Nov 9-13) Thursday Nov 12 (11-1)	Emotional Intelligence in Veterinary Medicine	Dr. Brian Butler	Zoom (2 hours)
Week 14 (Nov 16-20) Monday Nov 16 (12-2)	Self-Awareness in Personal Leadership	Dr. Brian Butler	Zoom (2 hours)

LAMS 543 Assignment Schedule– Fall 2020 (8 hours)

Due Date/ Sunday of Week #	Assignment/Mentor Meeting	Responsible Faculty
Week 7 Sunday Oct 2 11:59pm AST (2 hours)	Reflective Journaling: Perfectionism and Imposter Syndrome	Dr. Adria Rodriguez
Week 9 Sunday Oct 18 11:59pm AST Week 10 Sunday Oct 25 11:59pm AST Week 11 Sunday Nov 1 11:59pm AST (1-2 hours each)	Self-Study: preparation for lecture discussions	Dr. Austin Kirwan
Week 12 Sunday Nov 8 11:59pm AST (2 hours)	Reflective Journaling: What I have learned in Ethics so far	Mentors
Week 14 Sunday Nov 22 11:59pm AST (2 hours)	Communication Assignment	Dr. Nicki Wise

Professional Development Group Meeting: eCPR Workshop

Weeks 5, 9, 10, 11 Thursday Sept 17 Monday Oct 12 Tuesday, Oct 20 Tuesday Oct 27 Tuesday Nov 3 1:00-5:00pm AST	eCPR Workshop (Zoom): 1 time slot per Group (specific group dates TBD pending mentor confirmation)	Dr. Adria Rodriguez/ Mentors
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ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
LIVESTOCK MEDICINE I (2 Credits)
LAMS 544 TERM 5
Spring 2020

I. Course faculty and staff information

Course director

Dr. Stacey Byers, DVM, MS, DACVIM(LA), *Associate Professor*
sbyers1@sgu.edu or WhatsApp 473-421-1050

Office Location: My kitchen table 😊, maybe Cassia 1st floor

Office Hours: Zoom and as requested

Other faculty members

Dr. Arno Werners, DVM, PhD, DECVPT, *Professor*, awerners@sgu.edu

Staff members

Mrs. Frances Emmanuel, Executive Secretary, LAMS/SAMS Department,
femmanuel@sgu.edu

Mrs. Ruth Thornhill, Secretary, LAMS/SAMS Department, rthornhill@sgu.edu

II. Course location

Online – see Sakai course for details

III. Prerequisite and/or co-requisite courses

Current fifth term SVM student

IV. Required resources

- Working computer with camera and microphone and internet access.
- Notes, lecture slides, Panopto recordings (see Sakai).
- Material covered in Terms 1-5 courses. These are considered appropriate materials for examinations.

V. Recommended resources

- Supplemental reading for specific large animal diseases may be posted on Sakai.
- Useful livestock-oriented texts:
Large Animal Internal Medicine, 6th Edition, Smith BP, Van Metre DC, Pusterla N.
Diseases of Swine, Zimmerman JJ, Karriker LA, Ramirez A, Schwartz KJ, Stevenson GW.
Goat Medicine, Smith MC and Sherman DM.
Llama and Alpaca Care, Cebra C, Anderson D, Tibary A, Van Saun R, Johnson L.
Medicine and Surgery of Camelids, Fowler ME and Bravo PW.
Sheep and Goat Medicine, Pugh DG and Baird AN.
Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs, and Goats, Radostits OM, Gay CC, Hinchcliff KW, Constable PD.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Not applicable

VIII. Course rationale

The principles of diagnosis, treatment, and prevention of diseases in livestock (ruminants, camelids, and swine), are taught utilizing a lecture format with integrated case discussions. Cases are used to illustrate the context and application of material presented and to promote development of problem-solving skills. Individual and herd medicine and the role of the veterinarian in promotion of a healthy food supply are addressed.

Mastery of material presented in this course will prepare the student for Livestock Medicine II, clinical rotations of the senior year, and for the NAVLE board exam. This course will continue to build on the livestock topics presented in earlier courses.

IX. Course level outcomes

Upon successful completion of this course, the student will be able to:

- A. Explain the etiology and pathophysiology for livestock animal diseases.
- B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.
- C. Determine the appropriate diagnostic tests and interpret the results.
- D. Recognize emergency presentations and determine appropriate management strategies.
- E. Formulate appropriate treatment and prevention/control strategies for diseases in individuals and herds. Integrate knowledge of legislation regarding appropriate use of therapeutic agents in food producing animals.
- F. Identify disease processes and clinical presentations that have a public health significance, including zoonoses and/or those diseases that are reportable to a designated authority.

X. Lesson level outcomes

See Appendix 1

XI. Alignment of course level outcomes with program level outcomes

See Appendix 2

XII. Course schedule

See Appendix 1

XIII. Grading and assessment policy

There will be 2 graded assignments and 2 exams for this course comprised of a midterm and a final. Zoom cases and formative assessments are optional but highly recommended to assist in clinical reasoning, assimilating the materials, and engaging with the class and instructors.

Exam material will come from the notes and recorded lectures. There will be 1-2 questions per topic for the midterm and the final exams. Exam will include case-based questions building on previous lecture topics. Exam dates and times are as follows and are listed on Sakai. Any deviation from the schedule will be announced on Sakai.

The points breakdown are as follows:

Assessment	Points
Neonatal Assignment	10
Midterm Exam	35
GIT Assignment	10
Final Exam	35

The grading scale for this course is as follows:

>89.5%	A
84.50-89.49	B+
79.50-84.49	B
74.50-79.49	C+
69.50-74.49	C
64.50-69.49	D+
59.50-64.49	D
<59.49	F

XIV. Recommended study strategies

It is recommended to look at the weekly plan (see Weekly Lessons in Sakai). A tasks checklist and links to all the materials for the week will be provided. Study strategies include watching the Panopto videos, participating in the Zoom sessions/office hours and the Q&A discussions, reading the long notes where provided, and answering the study questions. Formative assessments will be provided and should be used. These are ungraded but will help with developing critical reasoning skills and preparing for the midterm and final.

This course covers a variety of subjects related to livestock medicine; therefore, it does skip around body systems which can be confusing if you do not keep up with studying the materials. Cases will be used to integrate information from various topics.

Zoom office hours will be held intermittently (see schedule or calendar). Additional individual or group office hours can be made if needed. If a student feels they are

falling behind or their grades are inadequate, they should arrange a meeting with their academic advisor as well as someone from the DES office.

For the grading of examinations, the slides and long notes, lecture handouts, and the statements made during lecture will be considered correct. Your correction of the notes and information provided in lecture is encouraged. However, information found which contradicts these sources must be brought to the attention of the instructor prior to an examination. The source will be evaluated and if indicated, corrections made (to the entire class). Do not expect to receive credit for information that contradicts these sources unless this procedure is followed.

XV. Instructor's expectations of the student

You are expected to keep up with the weekly tasks and participate or watch the Zoom cases, office hours, and review sessions before the midterm and final exams. **If you are having difficulty with the subject matter, are unsure of terminology, etc. please post in the Q&A, email me, ask a classmate, or even check the internet.** Reading comments after the end of term about lack of understanding of livestock terminology is too late to help you out.

XVI. Professionalism statement

Please respect the fact that not all students have the same experience and may ask questions that seem obvious to you. Do not make fun of students and instructors.

XVII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to appear for an examination without a valid reason (see student manual: SGU SVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination or quiz MUST inform the Course Director (sbyers1@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination or quiz. Failure to do so immediately will result

in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [An Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (slides, handouts, pictures, and videos) provided to students at St. George's University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

APPENDIX 1: Schedule and Lesson Level Outcomes

* Zoom times are optional but strongly encouraged to assist in engagement and assimilation of the materials. Zoom sessions will be recorded.

Week	Date	Topics and LLOs	Assignments	* Zoom Wed 11-12 AST
1	17-Aug	Introduction and PE Review 1. Explain the differences for a herd vs individual history and the importance of each. 2. Explain the importance of the signalment and what it includes. 3. Compare and contrast PE findings of healthy vs sick livestock species.		
2	24-Aug	Therapeutics 1. Select the appropriate therapeutic agent or vaccine for livestock diseases and disorders. 2. Determine the appropriate quantity, dosing interval, administration route and location, and withdrawal times. 3. Apply the principles of AMDUCA, FARAD, ELDU, and the prohibited and voluntarily restricted drugs to therapeutic treatment scenarios.		
3	31-Aug	Ophthalmology 1. Explain normal and abnormal ocular findings. 2. Develop an appropriate differential diagnosis list. 3. Select appropriate diagnostic tests for a variety of husbandry situations and explain test results. 4. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation. Cardiology 1. Describe the clinical signs of CV disease. 2. Develop an appropriate differential diagnosis list. 3. Explain the diagnostic tests and results. 4. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.		Case w/Surgery
4	7-Sep	Neonatology 1. Explain clinical signs and physical examination findings in normal and high-risk neonates. 2. Describe how to diagnose, treat, and prevent failure of passive transfer of maternal antibodies. 3. Explain the diagnostic and treatment options for neonatal scours and sepsis.	Neonatal assignment opens Monday	
Week	Date	Topics and LLOs	Assignments	* Zoom

				Wed 11-12 AST
5	14-Sep	Neonatology 4. Develop treatment and control/prevention plans for neonatal scours and sepsis.		Office hours
6	21-Sep	Urinary Tract 1. Explain the clinical relevance of the urogenital anatomy of livestock animals. 2. Describe the risk factors, clinical signs, and pathophysiology of urolithiasis. 3. Describe the diagnostic tests, medical management, and prevention of urolithiasis.	Neonatal assignment closes Tues 8 am AST	Case/office hours
7	28-Sep	Urinary Tract 4. Describe the etiology, pathophysiology, diagnosis, treatment, and prevention of ulcerative posthitis. 5. Describe the etiology, pathophysiology, diagnosis, treatment, and prevention of upper urinary tract diseases.		Case w/Surgery
8	5-Oct	LAMS 544 Midterm Tuesday Oct 6		
9	12-Oct	Gastrointestinal Tract - Oral Cavity and Esophagus 1. Describe the clinical manifestations of GI diseases. 2. Explain the supportive care strategies in animals with GI disease. 3. Describe the clinical signs, diagnostics, and treatments of oropharyngeal and esophageal disorders and diseases. 4. Explain the etiology, management, and notification process for oral vesicular diseases. 5. Describe the clinical signs and management of oral and esophageal emergencies.		Midterm review office hours
10	19-Oct	Gastrointestinal Tract - Rumen, Reticulum, Omasum 1. Describe the physiology of the rumen and neonatal development. 2. Describe the clinical signs, treatment, and prevention of rumen developmental disorders in neonates. 3. Compare and contrast the etiology, pathophysiology, treatment, and prevention of rumen acidosis and alkalosis disorders. 4. Compare and contrast rumen bloat disorders and the treatment and prevention of bloat. 5. Describe the clinical presentation of traumatic reticuloperitonitis, potential sequelae, diagnostic, and treatment options.		

Week	Date	Topics and LLOs	Assignments	* Zoom Wed 11-12 AST
11	26-Oct	Gastrointestinal Tract - Abomasum and Vagal Syndromes 1. Explain the etiology, pathophysiology, clinical signs, diagnosis, and treatment of abomasal disease and disorders. 2. Describe the types of vagal indigestion, the underlying causes, and how to distinguish between them diagnostically and clinically.		Case
12	2-Nov	Gastrointestinal Tract - Intestines and Diarrhea 1. Explain the etiology, clinical signs, and treatment of intestinal disorders. 2. Compare and contrast the clinical signs and pathophysiology of DA's, RVA, cecal dilation, and cecal torsions. 3. Explain the etiology, diagnosis, and treatment of diarrhea in adult ruminants.	GI assignment opens on Monday	Office hours
13	9-Nov	Gastrointestinal Tract - General Medical Treatment 1. Develop medical treatment plans for abomasal disorders. 2. Develop a treatment plan for diarrhea in adult ruminants.		Case w/Surgery
14	16-Nov	Musculoskeletal System 1. Describe the etiology, pathophysiology, treatment, and prevention of foot disorders. 2. Describe the pathophysiology, management, and prognosis for recumbent animals.	GI assignment closes Tues 8 am AST	Case/office hours
15	23-Nov	Musculoskeletal System 3. Describe the etiology, pathophysiology, clinical signs, treatment, and prevention of muscular and neuromuscular disorders.		
16	30-Nov	Dermatology 1. Describe the etiology and pathophysiology of dermatological diseases. 2. Develop an appropriate differential diagnosis list based on clinical signs, signalment, and history. 3. Select appropriate diagnostic tests and explain test results. 4. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation. 5. Explain the risk for iatrogenic disease transmission and management of an outbreak.		Office hours
17	7-Dec	LAMS 544 Final Thursday Dec 10		

APPENDIX 2: Course level outcomes and alignment of course learning outcomes with program learning outcomes (PLO)

Upon successful completion of this course, students will be able to:

Course Learning Outcomes	Program Learning Outcomes (PLO)
A. Explain the etiology and pathophysiology for livestock animal diseases.	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis, and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p>
B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.	<p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis, and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p>
C. Determine the appropriate diagnostic tests and interpret the results to rule in or rule out differential diagnoses to make a diagnosis.	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p>
D. Recognize emergency presentations and determine appropriate management strategies.	<p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis, and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents</p>

	<p>and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues, and responsible authorities.</p> <p>PLO 22 Analyze, design, and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 25 Analyze, design, and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety, and biosecurity.</p>
<p>E. Formulate appropriate treatment and prevention regimens for individual and herd level issues. Integrate knowledge of legislation regarding appropriate use of therapeutic agents in food producing animals.</p>	<p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p> <p>PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.</p> <p>PLO 21 Create comprehensive treatment plans. Includes prognosis</p> <p>PLO 22 Analyze, design, and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 24 Analyze, design, and execute appropriate plans for medical case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety, and biosecurity.</p>
<p>F. Identify disease processes and clinical presentations that have a public health significance, including zoonoses and/or those diseases that are reportable to a designated authority.</p>	<p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis, and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p>

	<p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues, and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety, and biosecurity.</p>
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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

LARGE ANIMAL SURGERY II SYLLABUS (2 Credits)

LAMS 545 TERM 6

FALL 2020

I. Course Faculty and Staff Information

Dr Heidi Janicke, VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA
Associate Professor in Large Animal Surgery
Office: Cassia Building (SGU campus map: # 17)
Tel: 444 - 4175 ext 3306
Email: hjanicke@sgu.edu
Office Hours: by appointment

II. Course location

MyCourses: 2020-08-LAMS545-V-0-Large Animal Surgery II

All synchronous (Zoom) and asynchronous (Panopto) lectures, additional Resources, Tests & Quizzes, Assignments, Checklists, etc. will be available through the Lessons tab on the LAMS 545 MyCourses site. Please use the checklists to ensure you have covered all the core material.

III. Prerequisite and/or co-requisite courses

Current 6th term SVM student

- ANPH 506/503 Veterinary Anatomy I/II
- ANPH 512/513 Veterinary Physiology I/II
- SAMS 501/502 Radiology I/II
- LAMS 502 Veterinary Clinical Orientation
- LAMS 501 Veterinary Physical Diagnosis II
- SAMS 513 Diagnostic Imaging

- LAMS 516 Large Animal Surgery I

IV. Required resources

Unfortunately, there is no one single text that encompasses all of the material covered in this course. The published long notes, lecture handouts and additional reading provided on MyCourses as well as information delivered in lectures and in your previous courses (see above) will provide basic information.

V. Recommended resources

Reference texts that provide additional information, images and discussion include:

- Auer & Stick: Equine Surgery
- Adams' Lameness in Horses
- Dyson & Ross: Diagnosis and Management of Lameness in the Horse

Online dictionaries of equine terms that you might find helpful are:

- <https://www.thehorse.com/tools/glossary>
- <https://aaep.org/sites/default/files/Documents/EDCCGlossaryofTerms.pdf>

A large amount of information is available at this site: <http://www.vin.com>. You need to register, but there is no cost to veterinary students.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at <https://mycampus.sgu.edu/group/saas>

VII. Other requirements

Laptop or desktop, TurningPoint app on device, internet access, quiet working space

VIII. Course rationale

This is part 2 of the 2 part Large Animal Surgery course series. It aims to introduce students to surgical conditions, including trauma, encountered in the equine species in terms of pathogenesis, diagnosis, treatment, prognosis and management. Emphasis will be placed on the clinical approach to evaluate, diagnose and treat the patient, as well as up-to-date therapeutic opportunities and prognosis where available. Clinical reasoning will be honed using case-based scenarios, which in addition will encourage better in-depth learning of the material. Mastery of material presented in this course will prepare the student for 4th year clinical rotations, the NAVLE board exam, and veterinary practice after graduation.

IX. Course-learning outcomes

Upon successful completion of this course, the student will be able to:

1. Recognize challenges specific to equine surgery.
2. Identify the aetiology and pathogenesis of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species.
3. Recognize the clinical signs of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species.
4. Determine appropriate techniques for diagnosis of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species.
5. Determine treatment and management plans for surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species.
6. Provide a prognosis for individual cases of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species.

X. Lesson-learning outcomes

Equine gastrointestinal system

1. Review the dental anatomy of the horse and routine dentistry in the horse
2. Identify pathological conditions of teeth in the horse
3. Determine the appropriate treatment for these conditions and recognise their advantages and limitations
4. Review the clinical anatomy of the gastrointestinal tract in the horse
5. Discuss the aetiology, pathogenesis, prognosis and survival rate of different GI conditions
6. Identify the clinical signs of colic and determine appropriate examination and diagnostic techniques and treatment options
7. Discuss complications of colic surgery
8. Recognise pathological conditions of oral and gastrointestinal tract of horse and determine whether they are medical or surgical
9. Describe how to diagnose and treat simple reconstructive surgeries of the oral cavity and oesophageal obstruction and recognise possible complications
10. Provide information as to the treatment, prognosis and survival rate of the different GI conditions

Equine musculoskeletal system

1. Explain how to take a comprehensive lameness history
2. Discuss how to perform a detailed lameness examination in the horse
3. Select and interpret appropriate diagnostic techniques to identify causes of lameness in the horse
4. Review the physiology and pathology of endochondral ossification leading to developmental orthopaedic disease in the horse
5. Discuss the aetiology and pathogenesis of osteochondrosis and osteoarthritis

6. Identify the clinical signs of osteochondrosis and osteoarthritis and determine appropriate diagnostic techniques to confirm the conditions
1. Determine the appropriate treatment and prevention plan and provide a prognosis for individual cases of osteochondrosis and osteoarthritis
2. Identify musculoskeletal emergencies of the horse in field situations
3. Determine the appropriate first aid for these conditions
4. Classify fractures
5. Describe the principles of fracture repair
6. Recognise causes of failure of repair
7. Review function, structure and biomechanics of tendons and ligaments
8. Discuss the aetiology and pathogenesis of injury and repair in tendons and ligaments
9. Identify the clinical signs of tendon and ligament injury and determine appropriate techniques for diagnosis
10. Discuss the aetiology and pathogenesis of angular and flexural limb deformities in the horse
11. Identify the clinical signs of angular and flexural limb deformities in the horse and determine appropriate techniques for diagnosis
12. Determine the appropriate diagnostic plan, treatment and management for tendon and ligament injury and angular and flexural limb deformities and provide a prognosis for individual cases
13. Describe the aetiology and pathogenesis of pathological conditions of the limb and foot in the horse
14. Identify the clinical signs of pathological conditions of the limb and foot in the horse and determine appropriate techniques for diagnosis
15. Determine and implement the appropriate treatment and management plan for these conditions and provide a prognosis for individual cases

Equine respiratory tract surgery

1. Review the clinical anatomy and physical examination technique of the respiratory tract in the horse
2. Identify pathological conditions of the respiratory tract in the horse
3. Determine the appropriate surgical treatment for these conditions and recognise their advantages and limitations

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
CLO A Recognize challenges specific to equine surgery	A. Core Medical Knowledge PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines. PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.

	<p>Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>B. Core Professional Attributes</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management.</p>
CLO B Identify the aetiology and pathogenesis of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p>
CLO C Recognize the clinical signs of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p>
CLO D Determine appropriate techniques for diagnosis of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>B. Core Professional Attributes</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
CLO E Determine treatment and management plans for	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p>

<p>surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species</p>	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Core Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. PLO 15 Model lifelong continuing education and professional development. PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 21 Create comprehensive treatment plans. PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare. PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management. PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management. PLO 26 Design and execute plans for health promotion, disease prevention, and food safety, biosafety and biosecurity. PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
<p>CLO F Provide a prognosis for individual cases of surgical conditions of the respiratory, musculoskeletal and gastrointestinal organ systems in the equine species</p>	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations. PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Core Professional Attributes</p>

	<p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, and food safety, biosafety and biosecurity.</p> <p>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p> <p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
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XII. Course Schedule

See Appendix

XIII. Grading and assessment policy, and grading rubrics

a. Grading scale

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

b. Assessment policy

There will be 5 timed summative quizzes worth 45 points overall (see schedule for more details). Deadline for all quizzes will be 2 weeks after the quiz opens. If you cannot meet a deadline due to clinical (or other) constraints please ensure you communicate with the Course Director prior to the deadline to discuss an extension. All quizzes will have feedback available after the deadline.

There will be a comprehensive Final with 45 questions (45 points) given in ExamSoft with ExamMonitor. Please ensure you read the instructions in **XIX ExamSoft policy** to ensure you are set up for the exam ahead of time.

In addition, there will be formative (no points) quizzes and clinical reasoning cases for self-assessment of understanding of the material and concepts. Feedback will be immediately available upon submission. These will be available for 2 weeks to ensure material is being covered in a timely manner.

All exam material will come from the materials available on MyCourses/Lessons. Questions will be multiple-choice with one single best answer or short answer questions.

All other exam policies are followed according to the SGU Assessment Guidelines and the Student Handbook.

XIV. Recommended study strategies

A number of synchronous Zoom sessions will be case based discussions. You will have access to an abridged version of the lecture notes in advance. It is **strongly advised** to work through the appropriate material **BEFORE** the sessions using the lecture and long notes to be able to participate in the discussions and clarify any questions at the time of the session. This will reduce the amount of time you will need to revise the material at a later date.

It may be useful to bring your reading materials available to add information during the discussions. In addition, please have the TurningPoint app downloaded on your device to be able to actively participate in the sessions.

The *further reading/recommended resources* (see IV/V) literature will be helpful in consolidating the subject matter, as will the resources in the 'Additional resources' folder on MyCourses and linked in Lessons.

Regular review of the course material is encouraged. This reduces panic the night prior to an examination, poor performance on the exams, and poor retention of information.

If a student feels they are falling behind or their grades are inadequate, they should arrange a meeting with the Course Director, their academic advisor as well as someone from the DES office.

For the grading of examinations the long notes, lecture handouts and the statements made during lecture will be considered correct.

Your correction of the notes and information provided in lecture is encouraged. However, information found which contradicts these sources must be brought to the attention of the instructor prior to an examination. The source will be evaluated and if indicated, corrections made (to the entire class). **Do not expect to receive credit for information that contradicts these sources, unless this procedure is followed.**

In addition to information provided in the long notes, handouts and in lecture, students are expected to have command of the information provided in previous courses and from recommended reading resources.

XV. Instructor's expectations of the student

The student is expected to attend the case study sessions prepared by having read and worked through the required material before class.

You will benefit the most from these sessions by actively participating. The virtual classroom is a safe environment and questions are not only welcome, but encouraged. If you are unsure of something you can guarantee you will not be the only one, so please use the chat to present your questions.

XVI. Professionalism statement

The virtual classroom is designated a safe environment. Please respect the fact that not all students have the same experience and may ask questions that seem obvious to you. Do not make fun of students either in or after class.

Participation in the discussions will benefit your learning experience, please make use of this opportunity.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed (see below).

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (hjanicke@sgu.edu) and IT (tellexaminationservices@sgu.edu) OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day.
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to contact the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner if located in Grenada or organize an alternative device.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty

and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

Course Schedule

Week	Dates	Topics (Panopto, asynchronous)	Zoom (optional and synchronous)	Assessment (open on Friday of week)
1	17 Aug – 21 Aug	Intro to LAS II Equine dentistry		Quiz 1 (5 points) Dentistry
2	24 Aug – 28 Aug	The acute abdomen GIT conditions 1	Office hours – Thursday 27 th August	
3	31 Aug – 4 Sept	GIT conditions 2 GIT conditions 3	GIT cases – Friday 4 th Sept	Quiz 2 (10 points) Acute abdomen & GIT Deadline Quiz 1 – Wednesday 2nd Sept
4	7 Sept – 11 Sept	Lameness exam Diagnostic analgesia		
5	14 Sept – 18 Sept	Diagnostic imaging Principles of fracture repair		Quiz 3 (10 points) Lameness exam (incl. DA and DI) Deadline Quiz 2 – Wednesday 16th Sept
6	21 Sept – 25 Sept	Fracture first aid Osteoarthritis		
7	28 Sept – 2 Oct	Osteochondrosis Foot conditions 1		Quiz 4 (5 points) Fracture and first aid Deadline Quiz 3 – Wednesday 23rd Sept
8	5 Oct – 9 Oct	Foot conditions 2	Foot cases – Thursday 8 th Oct	
9	12 Oct – 16 Oct	Digit and distal limb conditions	Digit and distal limb cases 1 – Thursday 15 th Oct	Deadline Quiz 4 – Wednesday 7th Oct
10	19 Oct – 23 Oct	Tendon and ligament injury	Digit and distal limb cases 2 – Thursday 22 nd Oct	
11	26 Oct – 30 Oct	Angular and flexural limb deformities	Tendon and DOD cases – Thursday 29 th Oct	
12	2 Nov – 6 Nov	Upper limb conditions	Upper limb cases (FL) 1 – Thursday 5 th Nov	
13	9 Nov – 13 Nov	Respiratory conditions 1	Upper limb cases (HL) 2 – Thursday 12 th Nov	Quiz 5 (15 points) Lameness conditions
14	16 Nov – 20 Nov	Respiratory conditions 2	Respiratory cases – Thursday 19 th Nov	
15	23 Nov – 27 Nov		Q&A for exam – Thursday 26 th Nov	Deadline Quiz 5 – Wednesday 25th Nov

16	30 Nov – 4 Dec	EXAM WEEK		
17	7 Dec – 11 Dec	EXAM WEEK		FINAL cumulative Monday 7th Dec (45 questions)



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
Veterinary Practice Ownership, Leadership and Management (2 credits)
LAMS 546 TERM 6
Fall 2020

I. Course Director

Heather Douglas DVM, MBA, CVA

Email: hdouglas@sgu.edu

II. Course location: Panopto, Zoom, Sakai Lessons/Assignments

III. Prerequisite and/or co-requisite courses: Current sixth term SVM student

Required resources: Text: The Art of Veterinary Practice Management, by Mark Opperman, CVPM, et al.

ISBN-13: 978-0935078749 **ISBN-10:** 0935078746

IV. Additional recommended resources will be provided electronically on Sakai or in class.

V. Recommended resources: None

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements: None

VIII. Course rationale: The purpose of this course is to provide information and skill sets focused on starting or acquiring a veterinary practice.

IX. Course-level objectives: Upon successful completion of this course, students will be able to:

1. Evaluate business management processes needed to run a professional small business or clinic.
2. Identify challenges in starting, running, managing, servicing, or closing a small business or clinic.
3. Develop innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.
4. Explain personnel policies, practices, and programs within the context of an organizational

- culture that motivates optimal workforce performance.
5. Review the practices, policies and programs that enable the development of customer/client focused veterinary practice.
 6. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.
 7. Assess the physical, material, human, and societal environments of a small business or clinic.
 8. Determine how to better deliver a sustainable, service-oriented experience.

X. Lesson Level Outcomes:

At the conclusion of the sections listed below, the student will be able to:

1. Describe the business management processes needed to efficiently and effectively run a professional small business or clinic.
2. Identify the greatest challenges in starting, running, managing, servicing, or closing a small business or clinic, brainstorming innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.
3. Identify personnel policies, practices, and programs within the context of an organizational culture that motivates optimal workforce performance.
4. Case Study: Recognize the practices, policies and programs that enable the development of customer/client focused veterinary practice.
5. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.
6. Assess the physical, material, human, and societal environments of a small business or clinic, and determine how to better deliver a sustainable, service-oriented experience.

XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies: See Appendix XXI

XII. Course Schedule

Changes in this schedule may occur at the course director's discretion, students will be notified at the earliest convenience. See schedule in Sakai under resources and as a table at the end of this document.

XIV. Assignments, grading and assessment policy

The course will consist of a mix of lectures, interactive zoom sessions and one communication lab.

This course is graded pass/fail based on **attendance and assignments described below**. 69.5% is considered a passing grade.

Assignments/Lab: Students must submit the following assignments on time in order to pass the course and attend one communication session.

- 1) Case Analysis:** (20 points) Here, course participants will individually prepare analysis of the assigned case, answering the Study Questions provided for the respective case. The purpose of case analysis is to learn how to think, to flex and apply material, concepts and tools to “real life” scenarios, and to practice using information, facts, and analysis to support decisions and recommendations. **The case must be turned in electronically BEFORE THE CLASS SESSION so that you are fully prepared for the class discussion.** Cases are available through the SGU library or at www.hbr.org

- 2) Class Participation:**(15 points) Class participants are expected to be prepared for the discussion held in each class. Class participation points will be provided by the Instructor after each class. Comments must be substantive and factual, showing evidence that you have read the material and are applying it during the discussion. Points will not be rewarded for unsubstantiated comments or opinion, or that otherwise suggest that the participant has not read and prepared the required material. 0 points will be rewarded if the class is missed.

- 3) Final Project:** (65 points) Participants will be asked to incorporate the course learning objectives and propose a detailed business plan to discover and share best practices and critical challenges. Determine best management style, analyze the business management processes needed to efficiently and effectively run a professional small, identify the greatest challenges in starting, running, managing, servicing, or closing a small business or clinic, brainstorming innovative solutions to maximize employee, organizational, customer/client, and societal performance gains, Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice and assess the physical, material, human, and societal environments of a small business or clinic, and determine how to better deliver a sustainable, service-oriented experience clinic and determine how you would address two critical challenges that you might be faced with in a practice setting. Refer to the learning objectives of this course and conduct your analysis in terms of two areas of the business processes listed on page 2-3 of the syllabus (see numbers three through nine).

You will be expected to develop and present a formal project proposal, PowerPoint presentation and written assessment. All written assignments are to follow APA 7 format. The PowerPoint presentation is limited to twenty minutes per to allow for ten minutes of class discussion and analysis. This project will be submitted for grading in segments according to the chart on page six.

- a) Propose final project. Include and address the course objectives are guiding your project when developing the proposal. (10 points)
- b) PowerPoint Presentation to Class (20 points) due at the end of the course
- c) Final Project -Write-up, Source and Research (40 points) due by 11/8/2020 at 11:55pm AST.

XIII. Instructor's expectations of the student: The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment policies

XIV. Recommended study strategies: Not applicable

XV. Professionalism statement:

Please exhibit professional behavior at all times. Respond to emails from faculty within 24 hours.

XVI. Attendance policy: If you cannot attend class, notify Dr. Douglas immediately.

XVII. Policy regarding missing exams or failure to submit assignments: Failure to submit the assignments will result in course failure.

XVIII. Copyright policy The materials (slides, handouts, pictures and videos) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XIX. APPENDIX: PLO, CLO, LLO Mapping:

Mapping CLOs to PLOs and Competencies

1. Evaluate business management processes needed to run a professional small business or clinic
2. Identify challenges in starting, running, managing, servicing, or closing a small business or clinic
3. Develop innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.
4. Explain personnel policies, practices, and programs within the context of an organizational culture that motivates optimal workforce performance.
5. Review the practices, policies and programs that enable the development of customer/client focused veterinary practice.
6. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.
7. Assess the physical, material, human, and societal environments of a small business or clinic.
8. Determine how to better deliver a sustainable, service-oriented experience.

Lecture/lab Learning Outcomes:	CLOs
1. Demonstrate advanced knowledge of the business management processes needed to efficiently and effectively run a professional small business or clinic.	1,2,8
2. Define and prepare for the greatest challenges in starting, running, managing, servicing, or closing a small business or clinic, brainstorming innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.	2
3. Understand personnel policies, practices, and programs within the context of an organizational culture that motivates optimal workforce performance.	3,4
4. Participate in case study to recognize the practices, policies and programs that enable the development of customer/client focused veterinary practice.	5
5. Strengthen skill set in: marketing, advertising, and social media strategies, campaigns, and recognize measurements to grow an existing business or practice.	6
6. Assess the physical, material, human, and societal environments of a small business or clinic, and determine how to better deliver a sustainable, service-oriented experience.	7,8

Course Level Learning Outcomes

SGU SVM Program Outcomes

RCVS Outcomes

1. Evaluate business management processes needed to run a professional small business or clinic.	B7	2, 3, 7
2. Identify challenges in starting, running, managing, servicing, or closing a small business or clinic.	B2	3, 4
3. Develop innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.	B7	9, 14
4. Explain personnel policies, practices, and programs within the context of an organizational	B5, C8	3, 4, 7, 13

culture that motivates optimal workforce performance.		
5. Review the practices, policies and programs that enable the development of customer/client focused veterinary practice.	B2, 8	5
6. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.	B2, 7	5, 7
7. Assess the physical, material, human, and societal environments of a small business or clinic.	B7	12
8. Determine how to better deliver a sustainable, service-oriented experience.	B2, 3, 5, 6	7,9

SCHEDULE:

LAMS 546 Fall 2020 Weekly Schedule

Week	Dates	Lectures/Content	Format/Assignments
1	17- 21 Aug	Mission, Vision, and Values. Business Plan. Funding	Live Zoom Webinar 2 hour 8/21 12-2pm
2	24 - 28 Aug	Business Administration Team, Equipment and Inventory Purchases	Panopto lecture (1)
3	31 Aug - 4 Sept	Payroll and Benefits. Taxes	Panopto (1) + Case Study Assignment due 9/20
4	7 - 11 Sept	Selection of Practice Software. Regulatory.	Live Zoom Webinar 1-hour 9/11 11am-12pm
5	14 - 18 Sept	Establishing Fees. Price in the Absence of Value	Panopto (1)
6	21 - 25 Sept	Overcoming Barriers. Metrics - Tracking New Clients, Tracking Success, Budgeting.	Live Zoom Webinar 1-hour 9/25 11am-12pm + Business Plan Assignment due 11/8
7	28 Sept - 2nd Oct	No content	

8	5- 9 Oct	Wellness Plans. Financial Management	Panopto (1)
9	12 - 16 Oct	Marketing. Social Media. Management. Communication. Human Resources. Staff Management and Leadership. Hospital Flow.	Live Zoom Webinar 2 hours 9/16 10am-12pm
10	19 - 23 Oct	No Content	
11	26 - 30 Oct	No Content	
12	2 - 6 Nov	No Content	
13	9 - 13 Nov	Wrap-up and Student On-Line Business Plan and Evaluation Presentations	Live Zoom Webinar 11/13 9am-12pm + Student Business Plan Presentations
14	16 - 20 Nov	No Content	
15/16	23 Nov – 4 Dec	No Content	



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
Veterinary Practice Ownership, Leadership and Management (2 credits)
LAMS 546 TERM 6
Fall 2020

I. Course Director

Heather Douglas DVM, MBA, CVA

Email: hdouglas@sgu.edu

II. Course location: Panopto, Zoom, Sakai Lessons/Assignments

III. Prerequisite and/or co-requisite courses: Current sixth term SVM student

Required resources: Text: The Art of Veterinary Practice Management, by Mark Opperman, CVPM, et al.

ISBN-13: 978-0935078749 **ISBN-10:** 0935078746

IV. Additional recommended resources will be provided electronically on Sakai or in class.

V. Recommended resources: None

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements: None

VIII. Course rationale: The purpose of this course is to provide information and skill sets focused on starting or acquiring a veterinary practice.

IX. Course-level objectives: Upon successful completion of this course, students will be able to:

1. Evaluate business management processes needed to run a professional small business or clinic.
2. Identify challenges in starting, running, managing, servicing, or closing a small business or clinic.
3. Develop innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.
4. Explain personnel policies, practices, and programs within the context of an organizational

- culture that motivates optimal workforce performance.
5. Review the practices, policies and programs that enable the development of customer/client focused veterinary practice.
 6. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.
 7. Assess the physical, material, human, and societal environments of a small business or clinic.
 8. Determine how to better deliver a sustainable, service-oriented experience.

X. Lesson Level Outcomes:

At the conclusion of the sections listed below, the student will be able to:

1. Describe the business management processes needed to efficiently and effectively run a professional small business or clinic.
2. Identify the greatest challenges in starting, running, managing, servicing, or closing a small business or clinic, brainstorming innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.
3. Identify personnel policies, practices, and programs within the context of an organizational culture that motivates optimal workforce performance.
4. Case Study: Recognize the practices, policies and programs that enable the development of customer/client focused veterinary practice.
5. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.
6. Assess the physical, material, human, and societal environments of a small business or clinic, and determine how to better deliver a sustainable, service-oriented experience.

XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies: See Appendix XXI

XII. Course Schedule

Changes in this schedule may occur at the course director's discretion, students will be notified at the earliest convenience. See schedule in Sakai under resources and as a table at the end of this document.

XIV. Assignments, grading and assessment policy

The course will consist of a mix of lectures, interactive zoom sessions and one communication lab.

This course is graded pass/fail based on **attendance and assignments described below.** 69.5% is considered a passing grade.

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Course Level Learning Outcomes

SGU SVM Program Outcomes

RCVS Outcomes

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2. Identify challenges in starting, running, managing, servicing, or closing a small business or clinic.	B2	3, 4
3. Develop innovative solutions to maximize employee, organizational, customer/client, and societal performance gains.	B7	9, 14
4. Explain personnel policies, practices, and programs within the context of an organizational	B5, C8	3, 4, 7, 13

culture that motivates optimal workforce performance.		
5. Review the practices, policies and programs that enable the development of customer/client focused veterinary practice.	B2, 8	5
6. Develop marketing, advertising, and social media strategies, campaigns, and measurements to grow an existing business or practice.	B2, 7	5, 7
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11	26 - 30 Oct	No Content	
12	2 - 6 Nov	No Content	
13	9 - 13 Nov	Wrap-up and Student On-Line Business Plan and Evaluation Presentations	Live Zoom Webinar 11/13 9am-12pm + Student Business Plan Presentations
14	16 - 20 Nov	No Content	
15/16	23 Nov – 4 Dec	No Content	



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

PATHOBIOLOGY DEPARTMENT

BACTERIOLOGY & MYCOLOGY (4 credits)

PTHB 503 (Term 2)

Fall, 2020

I. Course Faculty and Staff Information

- **Course Directors:**

Andy Alhassan, DVM, MSc, PhD, Associate Professor PTHB

Email: aalhass1@sgu.edu

Office Location: Veterinary Basic Medical Sciences building, Pathobiology Department offices

Office Hours: Email for appointment

Victor A. Amadi, BSc, MSc, PhD, Assistant Professor PTHB

Email: vamadi@sgu.edu

Office Location: Veterinary Basic Medical Sciences building, Pathobiology Department offices

Office Hours: Email for appointment

- **Additional Faculty:**

Josephine Azikuru Afema, BVM, MPVM, PhD, Associate Professor PTHB

Email: jazikuru@sgu.edu

Office Location: Veterinary Basic Medical Sciences building, Pathobiology Department offices

Office Hours: Email for appointment

- **Visiting Faculty:**

Carol Hull-Jackson DVM, PhD

Email: dr_hull@yahoo.com

Address: Crystal Heights, St. James, Barbados

- **Staff:**

- Erica Brathwaite, Laboratory Technician – ebrathwaite@sgu.edu

- Roxanne Nicholas-Thomas, Laboratory Technician – rnichola@sgu.edu

- Cindy Edwards, Executive Secretary – cedwards@sgu.edu

II. Course location

Online only for Fall 2020. Course content will be delivered Online (Sakai): 2020-08-PTHB503-V-0-Bacteriology/Mycology-(11900) via Sakai: My Courses, Syllabus, Recourses, Panopto, Zoom, Assignments

III. Prerequisite and/or co-requisite courses

Current Term 2 student

IV. Required resources

Required resource are:

Course notes/PowerPoint (provided by instructors)

Electronic devices such as laptop with functional microphone, camera, etc.

Functional internet access

V. Recommended resources

Recommended resource are:

Concise Review of Veterinary Microbiology, 2nd Edition, 2016, P. J. Quinn *et al.*
Wiley Blackwell

Veterinary Microbiology and Microbial Disease, 2nd Edition, 2011, P. J. Quinn *et al.*
Blackwell Science

Clinical Veterinary Microbiology, 2nd Edition, 2013 B.K. Markey *et al.*
Mosby/Elsevier Publishers

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

“Not applicable at this time”.

VIII. Course rationale

The course provides basic foundation needed for an understanding of clinical veterinary practice with reference to bacterial and fungal disease conditions in animals. This course is required by veterinary students in order to recognize and understand the major bacterial and fungal pathogens of veterinary significance, with respect to the habitats, virulence factors, pathogenesis and the effects on different animal species. Specimen collection and isolation, and control by antimicrobial drugs and biological agents will also receive emphasis.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Provide scientific nomenclature associated with veterinary bacteriology and mycology such as pathogen, pathogenicity, virulence, infection.
2. Describe various measures of virulence associated with various bacteria and fungi
3. Explain names of bacteria and fungi associated with various disease conditions
4. Explain the differences between apparent and inapparent infection, acute and chronic infection
5. Describe the important features of specified animal pathogens, including their habitats, survival, host range and transmission.
6. List and present the principles of specimen collection and submission for bacterial and fungal isolation including the rationale for sample collection.
7. Describe pathogenesis, drug susceptibility and immunity of bacteria and fungi.
8. Describe appropriate diagnostic tests and control measures for important bacterial and fungal disease of animals.
9. Explain inherent and acquired drug resistance, and spectrum of activity of commonly used antimicrobial drugs.
10. Describe procedures for determining bacterial susceptibility to antimicrobial agents.

X. Lesson-level outcomes

For all the bacterial and fungal diseases covered in this course you need to know the: (1) etiologic/ agent, (2) general characteristics of the bacterial and fungal species, (3) family the organism belongs to, (4) major clinical signs, (5) general pathogenesis, (6) diagnostics, (7) treatment and the control measures, and (8) any other specific feature relevant in differentiating the specific disease associated with the particular bacterial or fungal species. The following are summarized breakdown of the lesson-level outcomes of the individual bacterial and fungal species:

1. Utilize scientific nomenclature associated with veterinary bacteriology and mycology.
2. Describe various measures of virulence associated with various bacteria and fungi
3. Recall the names of bacteria and fungi associated with various disease conditions
4. Explain the differences between apparent and inapparent infection, acute and chronic infection
5. Describe the important features of specified animal pathogens, including their habitats, survival, host range and transmission.
6. List and observe the principles of specimen collection and submission for bacterial and fungal isolation including the rationale for sample collection.
7. Describe the pathogenesis, drug susceptibility and immunity.
8. Describe appropriate diagnostic tests and control measures for important bacterial and fungal disease of animals.

9. Understand inherent and acquired drug resistance, and spectrum of activity of commonly used antimicrobial drugs.
10. Describe the procedures for determining bacterial susceptibility to antimicrobial agents.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

SGU Program Level Outcome (PLO)	Course Learning Outcomes #
A. Core Medical Knowledge	
3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases.	1,2,3,4,6
4. Explain the relationship between disease processes and clinical signs.	3,4
5. Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.	7,8,9,10
7. Evaluate and analyze normal versus abnormal animal behavior.	2,4,5
11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine	6,9,10
B. Core Professional Attributes	
12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	8
14. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	8
15. Model lifelong continuing education and professional development.	1,8
17. Demonstrate and model self awareness including understanding personal limitations and willingness to seek advice.	6,8,9
C. Core Clinical Competencies (Skills)	
20. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.	8
26. Design and execute plans for health promotion, disease prevention, and food safety.	8,9,10
28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine	9,10

XII. Course Schedule

Be aware that this syllabus is a guide. Online lectures/Zoom may take more or less time depending upon class interest and participation.

Week	Lecture Number	Date (lecture hour/week)	Instructor	Lecture Topic
1	1	Aug 17 – 21	Al/Am	<ul style="list-style-type: none"> • ZOOM 1 – (1 hr, Tuesday, Aug 18. 1-2PM EST) • Intro to Bacteriology/ Bacterial Morphology /Cultivation /Preservation • Bacterial pathogenesis / Virulence factors • Antimicrobial agents
	2		Amadi	
	3		Afema	
	4		"	
2	5	Aug 24 – 28	Al/Am	<ul style="list-style-type: none"> • LAB #1 • Intro to Mycology / Dermatophytes • <i>Aspergillus/ Candida/ Malassezia</i> • Dimorphic fungi, & Mycotoxins
	6		Alhassan	
	7		"	
	8		"	
3	9	Aug 31 – Sep 4	"	<ul style="list-style-type: none"> • Lab diagnosis of bacterial diseases • Biosecurity, sterilization, disinfection • LAB #2 • ZOOM 2 – (2 hrs, Tuesday, Sep 1. 1-3PM EST): QUIZ REVIEW
	10-11		"	
	12		Al/Am	
	13		Al/AF/AM	
4	14	Sep 7 – 11	Af/Al/Am	<ul style="list-style-type: none"> • Quiz (Mon, September 7, 2020) • <i>Enterobacteriaceae-I</i> • <i>Enterobacteriaceae-II</i> • LAB #3
	15		Amadi	
	16		"	
	17		Al/Am	
5	18	Sep 14 – 18	Al/Am	<ul style="list-style-type: none"> • ZOOM 3 – (1 hr, Tuesday, Sep 15. 1-2PM EST) • <i>Corynebacterium group, Rhodococcus,</i> • <i>Actinomyces, Nocardia</i> • LAB #4
	19		Alhassan	
	20		"	
	21		Al/Am	
6	22	Sep 21 – 24	Alhassan	<ul style="list-style-type: none"> • <i>Dermatophilus/ Erysipelothrix/ Listeria</i> • <i>Ehrlichia spp</i> • <i>Rickettsia spp</i> • LAB #5
	23		"	
	24		"	
	25		Al/Am	
7	26	Sep 28 – Oct 2	Alhassan	<ul style="list-style-type: none"> • <i>Neorickettsia/ Wolbachia,</i> • <i>Anaplasma spp/ Coxiella</i> • Spirochetes • ZOOM 4 –(2 hrs Tuesday, Sep 29. 1-3PM EST): MIDTERM REVIEW
	27-28		"	
	29		"	
	30		Al/Am	
Friday, 9th October 2020, 12:00 PM, EST: MIDTERM EXAMINATION				

Dr. Alhassan: Al, Dr. Afema: Af, Dr. Amadi: Am.

Course Schedule: Lectures (Continued)

Week	Lecture	Date (lecture hour/week)	Instructor	Lecture Topic
9	31	Oct 12 – 16	Amadi	<ul style="list-style-type: none"> • <i>Pseudomonas, Burkholderia,</i> • <i>Taylorella</i> • <i>Actinobacillus</i> • LAB #6
	32		"	
	33		"	
	34		Al/Am	
10	35	Oct 19 – 23	Al/Am/HJ	<ul style="list-style-type: none"> • ZOOM 5 – (1 hr, Tuesday, Oct 20. 1-2PM EST) • <i>Staphylococcus</i> • <i>Streptococcus</i> • Anaerobes: Neurotoxicogenic <i>Clostridium</i>
	36		Hull-Jackson	
	37		"	
	38		"	
11	39	Oct 26 – 30	"	<ul style="list-style-type: none"> • Anaerobes: Enterotoxigenic <i>Clostridium</i> / Histotoxic <i>Clostridium</i> • <i>Bacillus</i> spp • LAB #7 • Review
	40		"	
	41		Al/Am	
	42		Hull-Jackson	
12	43	Nov 2 – 6	Amadi	<ul style="list-style-type: none"> • ZOOM 6 – (1 hr, Tuesday, Nov 3. 1-2PM EST) • <i>Campylobacter, Helicobacter</i> • LAB #8 • <i>Brucella, Lawsonia</i> • <i>Mycoplasma</i> -1 & 2
	44		Al/Am	
	45		"	
	46		Alhassan	
	47		"	
13	48	Nov 9 – 13	"	<ul style="list-style-type: none"> • <i>Bacterioides/ Porphyromonas/ Prevotella</i> • Anaerobes: <i>Dichelobacter/ Fusobacterium</i> • <i>Bordetella, Moraxella</i> • LAB #9
	49		"	
	50		"	
	51		Al/Am	
14	52	Nov 16 – 20	Afema	<ul style="list-style-type: none"> • <i>Francisella</i> • <i>Pasteurella</i> • <i>Mannheimia</i> • <i>Haemophilus/ Histophilus/Avibacterium</i> • LAB #10
	53		"	
	54		"	
	55		"	
	56		Al/AM	
15	57	Nov 23 – 27	Alhassan	<ul style="list-style-type: none"> • <i>Chlamydia</i> group, <i>Bartonella, Mycobacterium</i> spp • LAB #11 • ZOOM 7 – (2 hrs, Tuesday, Nov 24. 1-2PM EST): FINAL REVIEW
	58-59		Af/Al/Am	
	60		Al/Am	
Friday, December 11th, 2020, 12:00 PM, EST: FINAL EXAMINATION				

Dr. Alhassan: Al, Dr. Afema: Af, Dr. Hull-Jackson: HJ, Dr. Amadi: Am.

Course Schedule: Laboratories

For Fall 2020 Term, the hands-on laboratory sessions will be converted to online format.

- **Read corresponding lab-materials. See lab manual page numbers under Assessment Schedule**
- **Demonstration plates, tests, and/or video links will be provided on PowerPoint slides**

Week	Lab # (labs covered in lab manual)	Topic	Assessment Schedule
2	#1 (Lab 1 & 2)	Introduction, Gram staining, Streak plate technique on clinical sample or mixed cultures	Lab. Manual Page 7-14
3	#2 (Lab 3 & 4)	Antibiotic susceptibility testing, Quantitative culture of urine for diagnosing urinary tract infections in dogs	Lab. Manual Page 15-22
4	#3 (Assignment 1)	Due date/time for assignment submission (9-Sep., 11:30pm EST)	
5	#4 (Lab 5 & 6)	Mycology Demonstrations, and Gram staining of yeasts. Wet mount exam for ringworm. Culture of clinical samples	Lab. Manual Page 23-27
6	#5 (Assignment 2)	Due date/time for assignment submission (23-Sep., 11:30pm EST)	
9	#6 (Lab 7 & 8)	Introduction on bacterial identification tests, GRAM-NEGATIVE bacteria. Clinical cases and diagnosis	Lab. Manual Page 28-35
11	#7 (Assignment 3)	Due date/time for assignment submission (28-Oct., 11:30pm EST)	
12	#8 (Lab 9 & 10)	Introduction on bacterial identification tests, GRAM-POSITIVES and acid-fast bacteria, clostridia. Clinical cases and diagnosis	Lab. Manual Page 36-46
13	#9 (Assignment 4)	Due date/time for assignment submission (11-Nov., 11:30pm EST)	
14	#10 (Lab 11)	Interpretation of culture results, & Polymerase chain reaction (PCR) - in bacterial diagnosis	Lab. Manual Page 47-52
15	#11 (Assignment 5)	Due date/time for assignment submission (26-Nov., 11:30pm EST)	

XIII. Grading and assessment policy, and grading rubrics

There will be **three** examinations (Quiz, Midterm, and Final), based on **Lectures**. The examinations will consist of **multiple-choice questions** (MCQ). The Quiz will be on Sakai-Tests and Quizzes. The Midterm and Final examinations will be sequestered and will be on ExamSoft.

There will be **five** laboratory Assignments (Assignment 1 to 5): the **first assignment** will be on basic lab techniques, the **second to fourth** on a diagnosis based on case history and smears and /or cultures, and the **fifth assignment** will be on basic PCR lab techniques. The assignments will be on Sakai-Tests and Quizzes (See Table on page 7 for due date/time of the assignments).

POINTS ASSIGNED

Lecture:

Lecture Quiz	30 Points
Lecture Exam I: Midterm	40 points
Lecture Exam II: Final	40 Points
Lab. Assignments	25 points (5 Assignments, 5 points each)
Total	135 Points

Grading Scale: Final grading will be based on cumulative performance of all examinations including laboratory assignment scores, given for the course. Grading will be as follows (%):

All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

89.5-100:	A
84.5-89.4:	B+
79.5-84.4:	B
74.5-79.4:	C+
69.5-74.4:	C
64.5-69.4:	D+
59.5-64.4:	D
<59.5:	F

XIV. Recommended study strategies

Dr. Alhassan, and Dr. Amadi are willing to assist with questions regarding the material and study strategies for the course. Should the student have major difficulties with the course material, time management and/or testing, it is strongly recommended to contact the Department of Educational Services (DES).

Appointment can be made by emailing Dr. Alhassan (aalhass1@sgu.edu), or Dr. Amadi (vamadi@sgu.edu). Zoom review sessions for lecture and laboratory material will be held for the class and will be during normal lecture.

XV. Instructor's expectations of the student

As students in a school of veterinary medicine, you are expected to conduct yourselves as professional and mature students. As such, we expect you to attend required lectures and lab sessions, and to act in a professional and courteous manner to us and your classmates as warrants your future prestigious career.

XVI. Professionalism statement

Professional behavior in class is expected and required, including silencing of cell phones and other noisemaking devices and acting in a respectful manner toward the lecturer and your fellow classmates.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

**ST. GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PARASITOLOGY SYLLABUS (4 CREDITS)
PTHB 505 (TERM 3)
FALL 2020**

I. Course Faculty Information

Course Director: Dr. Rhonda D. Pinckney, BS, MS, DVM, PhD (Professor of Veterinary Parasitology)

Email: rpinckney@sgu.edu or pinckney.rhonda2@gmail.com (Preferred)

Phone: 516 515-7160 (home) or 473 534-1982 (cell)

Office Location: In the SVM trailer next to Bocca Lupo restaurant

Office Hours: Email, Google Docs or during optional Zoom sessions

Mrs. Camille-marie Coomansingh-Springer, BS, MSc, PhD candidate (Instructor)

Email: ccoomansingh@sgu.edu

Office Phone: 444-4175 ext. 3707; (473) 417-9579 (cell)

Office Location: Clinical Parasitology Lab (in the back of the Research Building)

Office Hours: Email, Google docs or during optional Zoom sessions

Mr. Dan Fitzpatrick, BS, MSc (Instructor)

Email: dfitzpat@sgu.edu

Phone: 444-4175 ext. 3860; (473) 418-3935 (cell)

Office Location: In the Research Building

Office Hours: Email, Google docs or during optional Zoom sessions

- II. Course Location:** Panopto video lectures are on Sakai. All lecture power points, review DES documents/power points and study guides are in their respective folders in "Resources" on Sakai (select "Course Tools" and click on "Resources"). A Google Doc link will be sent to the class for communication as well as weekly optional Zoom sessions.
- III. Pre-requisites:** Current term 3 veterinary students; none required however an understanding of the life cycles, terminology, clinical signs and pathology associated with parasites will be expected.
- IV. Required resources:** Course notes (on Sakai in "Resources" folders). The lab manual is optional however it will be helpful when studying.
- V. Recommended Resources:** All power points and other resources will be available on Sakai (select "Course Tools" and click on "Resources". All references will be in folders).

Optional resources:

- “Georgi’s Parasitology for Veterinarians”, 10th Edition (2014), Dwight Bowman (editor), also available as an e-book. Excellent life cycle diagrams and color photographs (\$US 80)
- “Veterinary Parasitology: Reference Manual”, 5th Edition William Foreyt (editor), also available as an e-book. Excellent reference for clinical practice (\$US 50); also available as an e-book.
- “Principles of Veterinary Parasitology”, 1st Edition (2015), Dennis Jacobs, Mark Fox, Lynda Gibbons, Carlos Hermosilla (editors), also available as an e-book (www.wiley.com/vet)
- “Veterinary Clinical Parasitology”, 8th Edition (2012), Ann Zajac and G. A. Conboy (editors), Ames, IA: Wiley-Blackwell.
- Understanding Reptile Parasites: A Basic Manual for Herpetologists and Veterinarians, by Roger Klingenberg. It’s readily available on Alibris or Abe Books. It is not deeply comprehensive, but a good overall review with info on diagnosis and treatment.
- Other useful books for reference are available in the library.

The following web site demonstrates an image gallery, interactive quizzes, and numerous links to other web sites: <http://www.vetmed.wisc.edu/pbs/vetpara>

Helpful websites:

<http://www.cdc.gov> (Centers for Disease Control & Prevention)

<http://www.capcvet.org/> (Companion Animal Parasite Council)

<http://www.animalplanet/monstersinsideme.com>

<http://www.ncvetp.org> (Nat’l Center for Veterinary Parasitology; Oklahoma State)

<https://www.heartwormsociety.org/> (American Heartworm Society)

<http://www.wormx.info> (American Consortium for Small Ruminant Control)

<http://www.merckvetmanual.com/mvm/index.html> (Merck Veterinary Manual)

<http://www.parasitesplainandsimple.com> (Google “video” & the website)

<http://www.veterinaryparasitology.com> (Monster Hunter’s Guide to Vet Para)

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements: Computer or other electronic devices to review lectures, etc. Reliable internet service.

VIII. Course Rationale: Provide a basic understanding of the biology of protozoan and metazoan parasites, understanding relevant host-parasite relationships which are needed to pursue clinical studies and future professional development.

IX. Course-Level Outcomes (CLOs): Upon successful completion of this course, the student will be able to:

1. Explain the clinical manifestation and epidemiology of parasitic disease in terms of the biology and life cycle of the parasite.
2. Comprehend the interactions between host immunity and parasite evasion of host defenses.

3. Discuss the public health implications of the major zoonotic parasites.
4. Identify parasites of veterinary importance by their appearance at post mortem examination and in fecal or other appropriate samples.
5. Explain the mode of action and relevant pharmacokinetic properties of the major groups of chemicals used for parasite treatment.
6. Discuss treatment and control strategies for the major parasites of veterinary and zoonotic importance.

Clinical case presentations will be incorporated in the lectures. Core material is mostly presented as illustrated lectures and correlating laboratory sessions. Unfortunately, there will be no laboratory component this term, however a clinical review will be presented when you are term 6. Practical classes are used principally to develop skills in parasite recognition and to develop student communication skills in the field of Veterinary Parasitology. We encourage you to visit the listed websites to observe the parasites in their actual size.

Detailed course content: Can be found within the course notes, laboratory manual and power points. Student Lecture Learning Outcomes (LLOs) are outlined at the end of each parasite section in the course notes, laboratory manual and power points (all available on Sakai). The course notes are a detailed reference to help your understanding.

- X. **Lesson-level outcomes (LLOs):** Are available at the end of each parasite section (i.e., protozoans, cestodes, flukes, nematodes, arthropods and arachnids). They are also located at the end of each laboratory session in the laboratory manual. The LLOs are listed in the appendix section of the course notes.
- XI. **Alignment of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs):** The CLOs are listed in IX and in the appendix of the course notes.

XII.

COURSE SCHEDULE

Listen to the Panopto lectures

The power points will correspond with the Panopto lectures. Read the course notes and lab manual for detailed information.

DATE TIME

LECT

TOPIC

LECTURER

MO 17 AUG	1	Introduction to Veterinary Parasitology	Dr. Pinckney
TU 18 AUG	2	Introduction to Protozoa	
WE 19 AUG	3	Trichomonads	
MO 24 AUG	4	Trichomonads (continued)	
TU 25 AUG	5	<i>Histomonas</i>	
WE 26 AUG	6	<i>Giardia</i>	Mrs. Springer
TH 27 AUG	7	<i>Entamoeba & Balantidium coli</i>	
FRI 28 AUG	2-3	Optional Zoom Session	
MO 31 AUG	8	<i>T. cruzi & Leishmania</i> (Hemoflagellates)	Dr. Pinckney
TU 1 SEP	9	<i>Leishmania</i> (continued)	
WE 2 SEP	10	Introduction to Apicomplexa	
TH 3 SEP	11	<i>Eimeria & Cystoisospora</i>	
FR 4 SEP	2-3	Optional Zoom Session - ASSIGNMENT # 1 (2 POINTS) DUE ON SEPTEMBER 11 @ 5 PM AST/EST	
MO 7 SEP	12	<i>Cryptosporidium</i>	Dr. Pinckney
TU 8 SEP	13	<i>Sarcocystis</i>	
WE 9 SEP	14	<i>Toxoplasma gondii</i>	
TH 10 SEP	15	<i>Toxoplasma gondii</i> (continued)	
FRI 11 SEP	2-3	Optional Zoom Session	
MO 14 SEP	16	<i>Neospora</i>	Dr. Pinckney
TU 15 SEP	17	Introduction to Cestodes (Tapeworms)	
WE 16 SEP	18	Cestodes (continued)	
FRI 18 SEP	2-3	Optional Zoom Session - QUIZ # 1 - 20 QUESTIONS (20 points) DUE SEPTEMBER 25 BY 5 PM AST/EST	
MO 21 SEP	19	Cestodes (continued)	Dr. Pinckney
TU 22 SEP	20	Introduction to Flukes (or Trematodes)	
WE 23 SEP	21	Flukes (continued)	
TH 24 SEP	22	Acanthocephalans (thorny-head worms)	
FR 25 SEP	2-3	Optional Zoom Session – ASSIGNMENT # 2 (2 POINTS) DUE OCTOBER 2 @ 5 PM AST/EST	
MO 28 SEP	23	Introduction to Nematodes & Ascarids	Mrs. Springer
TU 29 SEP	24	Ascarids (cont.); Hookworms	
WE 30 SEP	25	Hookworms (continued)	
TH 1 OCT	26	<i>Trichuris, Eucoleus, Pearsonema</i>	
FRI 2 OCT	2-3	Optional Zoom Midterm Review Session	

**PARASITOLOGY MID-TERM
EXAMINATION – 40 questions (40 points)**

FRI 9 OCT TBA

MO 12 OCT 27 *Trichinella, Dioctophyma, & Pinworms*
TU 13 OCT 28 *Strongyloides, Spiruroids, Dracunculus*
WE 14 OCT 29 Equine Strongyles & Trichostrongyles (Dr. P)

Optional Zoom Session

FRI 16 OCT 2-3

MO 19 OCT 30 Trichostrongyles (continued) Dr. Pinckney
TU 20 OCT 31 Large animal Lungworms
WE 21 OCT 32 Small animal Lungworms

**Optional Zoom Session - ASSIGNMENT #
3 (2 POINTS) DUE ON OCTOBER 30 @ 5
PM AST/EST**

FRI 23 OCT 2-3

MO 26 OCT 33 Heartworms (Dr. Pinckney)
TU 27 OCT 34 Heartworms (continued)
WE 28 OCT 35 Heartworms (continued) & other filarids

**Optional Zoom Session - QUIZ # 2 – 20
Questions (20 points) DUE NOVEMBER 6
@ 5 PM AST/EST**

FRI 30 OCT 2-3

MO 2 NOV 36 Introduction to Insects (Mr. Dan Fitzpatrick)
TU 3 NOV 37 Nematocerans & other flies
WE 4 NOV 38 Muscoid & Hippoboscid flies

**Optional Zoom Session – ASSIGNMENT #
4 (2 POINTS) DUE ON NOVEMBER 13 @ 5
PM AST/EST**

FRI 6 NOV 2-3

MO 9 NOV 39 Facultative Myiasis (Mr. Dan Fitzpatrick)
TU 10 NOV 40 Obligatory myiasis
WE 11 NOV 41 Fleas

**Optional Zoom Session – ASSIGNMENT #
5 (2 POINTS) DUE ON NOVEMBER 20 @ 5
PM EST**

FRI 13 NOV 2-3

MO 16 NOV 42 Lice, True Bugs & Pentastomes (Dr. P)
TU 17 NOV 43 Introduction to Arachnids
WE 18 NOV 44 Ticks
TH 19 NOV 45 Mites

Optional Zoom Final Exam Review

FRI 20 NOV 2-3

**PARASITOLOGY FINAL EXAMINATION –
50 Questions (50 points)**

FRI 11 DEC TBA

XIII. Grading and Assessment Policy:

There will be two “closed book” quizzes which will be posted on Sakai on 18 September and 30 October. Check the orientation schedule and make note of the due dates (5 PM AST/EST). You will have one week to complete the quiz. Once you begin the quiz, you must complete it online. It will be in a multiple-choice format with feedback. Each quiz is worth 20 points (20 questions @ 1 point each). Some questions may require visualization of an image to answer.

The midterm examination (40 questions @ 1 point each) and the final examination (50 questions @ 1 point each). Refer to the course orientation schedule for the dates. The midterm and final examinations will be multiple choice questions (Exemplify format) in which some of the questions may require visualization of an image to answer.

There will be five Assignments: These will be online and posted on Sakai. They are “open book” and you have one week to complete and post the assignment answers. Check the orientation schedule above for the posting and due dates (5 PM AST/EST). The assignments may be clinical cases in a multiple-choice format. Some questions may require visualization of an image to answer. These are formative assignments and will be open book encouraging each student to utilize their knowledge and resources to answer the questions correctly. The due dates are indicated in the course orientation schedule. Each assignment is worth 2 points = 10 points.

Grading Scale

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

XIV. Recommended study strategies:

1. Unfortunately, there will be no laboratory sessions which is an essential component of Veterinary Parasitology. During term 6 there will be a Clinical Parasitology review so that you can appreciate the actual size of the parasites. You will be required to perform fecal flotations and know how to conduct a heartworm ELISA test. Parasitology is a “hands-on” discipline. The more you handle

materials and **see the parasites of veterinary importance, the more comfortable and prepared you will feel in tackling clinical problems.** You are encouraged to visit the websites listed to gain an appreciation of the actual sizes of the parasites.

2. **Keep up with your work online** and find time for review of past weeks materials. Do not leave studying to the last minute and expect to catch up by “cramming” right before exams. There are weekly optional Zoom Sessions and Google Docs. These will be opportunities in which we can communicate to help with any issues that you have in comprehension. There are many parasite names and important details associated with parasite diagnosis so give yourself plenty of time to assimilate and understand this information.

XV. Instructor’s expectations of the student: The lab manual, course notes, orientation schedule and power points will be posted in designated folders in “Resources” on Sakai. Reading the laboratory manual and answering all the questions will help with your comprehension of the material.

Identification, diagnosis, treatment and control of parasites in domestic animals represent a significant portion of most veterinary practices. Therefore, a solid grounding in the basics of veterinary parasitology will be an extremely valuable asset to carry with you both during your advanced training here at St. George’s University, School of Veterinary Medicine, and after you leave the program. For many of you, this course will be your only formal exposure to diagnostic veterinary parasitology. However, it is our hope that in the course of your studies, you will gain the necessary tools and basic information to be effective clinicians in dealing with parasitology problems.

XVI. Professionalism statement: All students are expected to conduct themselves in a respectful and professional manner. Cell phones should be muted during Zoom sessions. Treat your professors and colleagues with respect. **Examinations and quizzes are sequestered. Memorizing questions and maintaining them in “banks” to share is a violation of the SGU Honor Code. Such violations can result in a formal disciplinary hearing.**

XVII. Attendance Policy: Students are expected to virtually attend, engage with online content, and participate in all classes for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students’ lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Email Dr. Pinckney (pinckney.rhonda2@gmail.com) or Mrs. Coomansingh-Springer (ccoomansingh@squ.edu).
(516) 515-7160 (Dr. Pinckney’s US number that can be used to reach me in Grenada)
(473) 534-1982 (Dr. Pinckney’s Grenada cell phone #)

XVIII. Policy regarding missing examinations and/or failure of submission of assignments.

Students who fail to appear for an examination without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

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Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

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2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
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 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

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Appendices: Program Learning Outcomes (PLOs)

PLO3: Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.

PLO 4: Explain the relationship between disease processes and clinical signs.

PLO 6: Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based scientific knowledge.

PLO 9: Apply the principles of veterinary public health for the promotion of human and animal health.

The lecture (lesson) learning outcomes are located at the end of each parasitology section (e.g., protozoans, cestodes, flukes, nematodes, insects, pentastomes and arachnids).



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

PATHOBIOLOGY DEPARTMENT

SYLLABUS - Pathology I (4 credits)

PTHB506 (Term 3)

Fall 2020

I. Faculty and Staff Information

a. Course Director:

- i. Dr. Brian Butler, DVM, MPH, PhD, Dipl. ACVP, *Professor*
- ii. Email: bbutler@sgu.edu
- iii. Office Location: SVM trailer
- iv. Office Hours: by appointment

b. Additional faculty:

- i. Dr. David Marancik, DVM, PhD, *Associate Professor*, dmaranci@sgu.edu
- ii. Dr. Melinda Wilkerson, DVM, PhD, Dipl. ACVP, *Professor*, mwilkers@sgu.edu

c. Staff members:

- i. Ms. Cindy Edwards, Executive secretary, cedwards@sgu.edu
- ii. Mr. Ferron Victor, Laboratory technician (A/V support)
- iii. Ms. Veronica Mapp-Alexander, Laboratory technician (Histology lab)

II. Course location

Online only for Fall 2020. Course content will be delivered via My Courses, Panopto, Zoom, and Top Hat.

III. Prerequisite and/or co-requisite courses

Successful completion of DVM Term 2 courses: Anatomy II, Physiology II, Bacteriology/Mycology, and Immunology.

IV. Required resources

All course materials are provided in My Courses > Resources and Assignments. Links will be provided for all Panopto, Zoom, and TopHat content.

V. Recommended resources

Textbook: Pathologic Basis of Veterinary Disease, 6th edition. Zachary and McGavin. 2016.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

Pathology I is a 4-credit course composed of didactic lectures mixed with active learning exercises, formative assessment, and interactive clinical case investigations. In addition, there are two laboratory sessions that utilize small group exercises and hands-on learning opportunities with animal tissues and/or simulations. **For Fall 2020 term these two hands-on labs will be converted to online format.** This course serves as an introduction to the discipline and clinical service of veterinary pathology. In this course, Term 3 DVM students are expected to integrate knowledge from multiple disciplines (anatomy, physiology, embryology, histology, microbiology, virology, parasitology, etc.) and develop their aptitude for conceptual learning and problem-based medicine. During the first half of the course students will learn the fundamental mechanisms of tissue injury and disease (General Pathology). The second half of the course will take a systematic approach focused on individual organ systems and their respective diseases in domestic species (Systems Pathology). This latter portion of the course will utilize “flipped classroom” techniques and participants will cover course content through student-directed learning in the form of prescribed lessons, assignments, and review papers. In addition, students will spend in-class time with the instructor (**Zoom for Fall 2020**) focused on content review and formative assessment in preparation for exams. The remaining sections of Systems Pathology are covered in the Term 4 course, Pathology II. In addition, students will also receive an introduction to the clinical service of diagnostic pathology and the relevance of this service to their clinical careers.

IX. Course-level outcomes

The emphasis of this course is placed on the training and development of clinical proficiency, and thus, the course material and the course goals are focused on learning the pathogenesis and pathophysiology of the most important veterinary diseases of domesticated animals. The overall goal of this course is to provide students with a solid understanding of veterinary disease as it relates to lesion development, clinical signs, diagnostic strategy, and clinical outcomes. By utilizing student-directed learning and flipped classroom teaching methods, it is expected that students will foster independent learning practices that will benefit their clinical careers. *Upon successful completion of this course, the student will be able to...*

1. Apply a working vocabulary for the language of pathology and know how to use pathological terminology correctly. Practice communication skills as they relate to the language of pathology in a clinical setting.
2. Examine the principle mechanisms of disease at the whole body, cellular, and molecular levels (general pathology). Integrate knowledge about the principle mechanisms of disease into clinical case-based scenarios.
3. Recognize, describe, and interpret gross lesions and limited histological lesions.
4. Given a lesion and patient history, formulate a morphologic diagnosis, comprise a list of differential diagnoses, and determine the most likely etiologic diagnosis.
5. Given a specific disease, determine the range of ancillary diagnostic tests that are required to reach a definitive diagnosis.
6. Examine the development of lesions (pathogenesis) by identifying the basic mechanisms of injury and tissue responses.
7. Correlate lesions with clinical signs (pathophysiology), patient history, and clinical laboratory data.
8. Compare and contrast the commonalities and discrepancies of lesions and disease mechanisms across species (comparative pathology).

X. Lesson-level outcomes

Please refer to the appended table for Lesson Level Outcomes (LLO) at the end of this document.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Please refer to the appended table for Lecture Level Outcomes (LLO) at the end of this document.

XII. Course Schedule: Weekly Lectures and Assignments with Student CHECKLISTS

Week #	Start Date	Weekly <u>Lectures/Lessons</u>	Weekly <u>Assignments</u>	<u>Exams</u>
		<p>Panopto Recordings – Green</p> <p>*Live TopHat Sessions – Purple *real-time sessions scheduled at 1:00 pm Eastern Standard Time</p> <p>*Live Zoom Sessions – Red *real-time sessions scheduled at 1:00 pm Eastern Standard Time</p>	<p>Assignments in this course consist of:</p> <ul style="list-style-type: none"> Laboratory Assignments Reading Assignments TopHat Lessons <p>Please remember to use the CHECKLISTS provided below to track your weekly Panopto recordings, assignments, and deadlines.</p> <p>Recommendation: Print this 4-page schedule for convenient checklist monitoring at your workstation.</p>	
1	Aug 17	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Intro to pathology – Butler <input type="radio"/> Cell injury and death - Butler <input type="radio"/> Cell injury and death – Butler <input type="radio"/> Disorders of fluid dynamics – Wilkerson <input type="radio"/> Disorders of vasculature and hemostasis – Wilkerson 	No assignments	
2	Aug 24	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Inflammation 1 – Marancik <input type="radio"/> Inflammation 2 – Marancik <input type="radio"/> Inflammation 3 – Marancik <input type="radio"/> Inflammation 4 – Marancik <input type="radio"/> Inflammation 5 – Marancik <ul style="list-style-type: none"> Morphologic diagnosis <p><u>Live Zoom Session – Review Morphologic Diagnosis - Marancik</u></p> <p><u>Thursday Aug 27th</u></p> <p>*real-time sessions scheduled at 1:00 pm Eastern Standard Time</p> <p>**Be sure to complete Panopto Checklist (Inflammation 1-5) before this Zoom session.</p>	No assignments	
3	Aug 31	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Inflammation 6 – Marancik <input type="radio"/> Inflammation 7 – Marancik 	<p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Inflammation Lab Assignment <p>*** Deadline Sunday Sep 6th, 11:59 pm</p>	

		<p><u>Live Zoom Session – Review - Marancik</u></p> <p><u>Thursday Sep 3rd</u></p> <p>*real-time sessions scheduled at 1:00 pm Eastern Standard Time</p> <p>** Be sure to complete Panopto Checklist (Inflammation 6-7) before this Zoom session.</p>		
4	Sep 7	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Neoplasia 1 – Butler <input type="radio"/> Neoplasia 2 – Butler <input type="radio"/> Neoplasia 3 – Butler <input type="radio"/> Neoplasia 4 – Butler 	<p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Neoplasia Lab Assignment <p>*** Deadline Sunday Sep 13th, 11:59 pm</p>	
5	Sep 14	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Neoplasia 5 – Butler <input type="radio"/> Infectious disease 1 – Butler <input type="radio"/> Infectious disease 2 – Butler <input type="radio"/> Integumentary 1 - Butler 	No assignments	
6	Sep 21	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Integumentary 2 - Butler <input type="radio"/> Integumentary 3 - Butler <input type="radio"/> Integumentary 4 - Butler <input type="radio"/> Integumentary 5 - Butler 	<p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Dermatopathology Lab Assignment <p>*** Deadline Sunday Oct 4th, 11:59 pm</p>	
7	Sep 28	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Integumentary 6 - Butler <input type="radio"/> Integumentary 7 - Butler <input type="radio"/> Integumentary 8 - Butler <input type="radio"/> Integumentary 9 - Butler 		
8 MIDTERMS	Oct 5			Midterm Exam Friday Oct 9th
9	Oct 12	<p>TopHat Module 1 – Urinary Pathology</p> <p><u>TopHat Lessons Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Lesson 1 (2 pts) <input type="radio"/> Lesson 2 (2 pts) <input type="radio"/> Lesson 3 (2 pts) 	<p>***<i>Must complete all TopHat Lessons by deadline Sunday Oct 18th, 11:59 pm. Late lessons will not receive points.</i></p>	

10	Oct 19	<p><i>Must complete all assignments before TopHat session below.</i></p> <p>Live TopHat Session Thursday Oct 22nd</p> <ul style="list-style-type: none"> • <u>One 2-hour</u> real-time session scheduled at 1:00 – 2:50 pm Eastern Standard Time. • 10-minute break at halftime. 	<p><u>Reading Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Review Paper 1 (2 pts) <input type="radio"/> Review Paper 2 (2 pts) <input type="radio"/> Review Paper 3 (2 pts) <p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> TopHat Virtual Necropsy – Urinary dz (2 pts) <p><i>***Must complete all assignments by deadline Wednesday Oct 21st, 11:59 pm. Late assignments will not receive points.</i></p>	
11	Oct 26	<p>TopHat Module 2 – Hepatobiliary and Exocrine Pancreas</p> <p><u>TopHat Lessons Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Lesson 1 (2 pts) <input type="radio"/> Lesson 2 (2 pts) <input type="radio"/> Lesson 3 (2 pts) <input type="radio"/> Lesson 4 (2 pts) 	<p><i>***Must complete all lessons by deadline Sunday Nov 1st, 11:59 pm. Late lessons will not receive points.</i></p>	
12	Nov 2	<p><i>Must complete all assignments before TopHat session below.</i></p> <p>Live TopHat Session Thursday Nov 5th</p> <ul style="list-style-type: none"> • <u>One 2-hour</u> real-time session scheduled at 1:00 – 2:50 pm Eastern Standard Time. • 10-minute break at halftime. 	<p><u>Reading Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Review Paper 1 <input type="radio"/> Review Paper 2 <input type="radio"/> Review Paper 3 <p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> TopHat Virtual Necropsy – Liver dz (2 pts) <p><i>***Must complete all assignments by deadline Wednesday Nov 4th, 11:59 pm. Late assignments will not receive points.</i></p>	
13	Nov 9	<p>TopHat Module 3 – Alimentary Pathology</p> <p><u>TopHat Lessons Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Lesson 1 (2 pts) <input type="radio"/> Lesson 2 (2 pts) <input type="radio"/> Lesson 3 (2 pts) <input type="radio"/> Lesson 4 (2 pts) 	<p><i>***Must complete all lessons by deadline Sunday Nov 15th, 11:59 pm. Late lessons will not receive points.</i></p>	

14	Nov 16	<p><i>Must complete all assignments before TopHat session below.</i></p> <p>TopHat Session Thursday Nov 19th</p> <ul style="list-style-type: none"> • One <u>2-hour</u> real-time session scheduled at 1:00 – 2:50 pm Eastern Standard Time. • 10-minute break at halftime. 	<p>Reading Assignment Checklist</p> <ul style="list-style-type: none"> <input type="radio"/> Review Paper 1 <input type="radio"/> Review Paper 2 <p>Laboratory Assignment Checklist</p> <ul style="list-style-type: none"> <input type="radio"/> TopHat Virtual Necropsy – Diarrheal dz (2 pts) <p><i>***Must complete all assignments by deadline Wednesday Nov 18th, 11:59 pm. Late assignments will not receive points.</i></p>	
15 FINALS	Nov 23			
16 FINALS	Nov 30			Final Exam Monday Nov 30th
17	Dec 7			
18 CAPPS	Dec 14			

XIII. Grading and assessment policy, and grading rubrics (*In compliance with SGU and SVM assessment guidelines.*)

All students are expected to be familiar with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. Please refer to the Student Manual for details.

- Grading scale. *Please refer to the SVM Student Manual.*
- Types of assessment.
 - There will be **two** written examinations and **nine** assignments/lessons for this course. *Please see schedule above.*
 - Assignments and Lessons will NOT be accepted late. Late submissions will result in 0 points. **Deadlines are indicated in the above schedule.**
 - Please use the CHECKLISTS in the above schedule to keep up with weekly Assignments and Lessons.
 - The written examinations will consist of multiple-choice questions (MCQ's) administered through ExamSoft. The examinations will cover the material described in the lectures, study outlines, laboratory sessions, out-of-class lessons, and reading assignments.
- Assessment breakdown:

	Points
Lab Assignment – Inflammation	2
Lab Assignment – Neoplasia	2
Lab Assignment – Dermatopathology	2
Midterm Exam	40
Urinary Lessons (3)	6
Lab Assignment – Urinary dz	2
Hepatobiliary Lessons (4)	8
Lab Assignment – Liver dz	2
Alimentary Lessons (4)	8
Lab Assignment – Diarrheal dz	2
Final Exam	50
Total points	124

XIV. Recommended study strategies

- Know the syllabus.
- Know the learning outcomes for each lecture, lab, and assignment.
- Pre-read material before lectures and labs and be sure to know all new vocabulary before class.

- Be sure to complete all out-of-class lessons and assignments prior to in-class sessions with instructor (applies to flipped classroom – systems pathology).
- **Learning through repetition is key for long-term retention.**
 - Pre-read material, then attend lectures, then self-study, then group study, then final review
- Participate in class and ask questions when you do not understand something. Use the **Forums** application in My Courses (Sakai) to ask questions about course content.
- Attend **DES groups** and review sessions.
- Request **Office hours** for any further needed clarification about course concepts.

XV. Instructor’s expectations of the student

The student is expected to review learning outcomes and provided course content BEFORE the scheduled lectures and laboratory sessions. Every student is expected to participate in active learning assignments, exercises, and prescribed readings. All students are expected to complete all lessons and assignments prior to in-class sessions.

XVI. Professionalism statement

Please refer to SVM Student Manual.

XVII. Attendance/Participation Policy (In compliance with SGU and SVM assessment guidelines.)

Lecture attendance policy: Attendance is strongly recommended and expected. **Students are expected to complete all provided Panopto lectures.** Attendance is mandatory for all in-class (**Zoom**) sessions during flipped classroom.

Laboratory session attendance policy: Attendance is mandatory and required to receive credit for the two laboratory sessions. **This does not apply for Fall 2020.** Any absence from lab sessions requires the necessary documentation from the Dean of Students Office. Please contact the Dean of Students Office directly of details and procedures. Any unexcused absence may lead to failure of the course at the discretion of the Course Director.

General statement for Fall 2020 Online course delivery: Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students’ lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

- Students who fail to attend an examination or fail to submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.
- Students who have technical issues during the examination MUST inform the Course Director (bbutler@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 866-429-8889) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.
- Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.

6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited. Students that do not respect this policy may be charged with academic dishonesty which can result in dismissal.

Appendices:

Detailed course content: Lecture Level Learning Outcomes

Lec.	Topic	Learning Outcomes	CLO
1	Introduction to pathology	<ol style="list-style-type: none"> 1. Demonstrate a general understanding for the discipline and specialty practice of pathology. 2. Review and define specified terms relating to pathology. 3. Review and explain the concept of pathogenesis. 4. List a chronologic sequence of events for a specific veterinary disease (stepwise list of pathogenic events). 5. Review and explain the concept of a pathognomonic lesion and provide examples in veterinary medicine. 6. Discuss the relationship of pathology to clinical medicine (pathophysiology) and review the different types of diagnoses. 7. Discuss the wide range of career opportunities offered in pathology. 	<p>1</p> <p>1</p> <p>1,6</p> <p>6</p> <p>1</p> <p>1,7</p> <p>1,4,5</p>
2	Cellular injury, adaptation, and death	<ol style="list-style-type: none"> 1. Differentiate the causes and consequences of cellular injury to cell membranes, mitochondria, and the nucleus. 2. Describe the process of oxidative injury to cellular components and evaluate the overall significance of oxidative stress in the pathogenesis of disease. 3. Explain the causes and consequences of DNA damage to the cell, and to the organism. 4. Explain the causes and consequences of DNA damage to the cell, and to the organism. 5. Explain the causes and consequences of the different types of physical injury to cells. 6. Compare the mechanisms and outcomes of reversible and irreversible cell injury. 7. Describe the causes and mechanisms of cell swelling (hydropic degeneration). 8. Describe the mechanisms, morphologic features, and sequelae of necrosis. 	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>

		<p>9. Describe the mechanisms, morphologic features, and sequelae of apoptosis.</p> <p>10. Compare and contrast the different mechanisms and outcomes for cellular adaptation to chronic injury.</p>	2
3	Fluid balance and disturbance	<p>1. Differentiate the structural and functional characteristic of arteries, capillary types, veins, and lymphatics.</p> <p>2. Apply Starling's law concepts to explain how difference in pressure gradients (hydraulic and colloid oncotic pressure, COP) in the capillaries maintains fluid in the capillaries or cause edema.</p> <p>3. Describe the four mechanisms of edema and able to provide causes of each.</p> <p>4. Describe the gross and histopathologic appearance of edema.</p> <p>5. List four types of body cavity fluids and potential causes and clinical consequences</p>	<p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2,3</p> <p>1,2,6,7</p>
4	Hemostasis and Thrombosis	<p>1. Describe the role of primary and secondary hemostasis. Identify vitamin K dependent coagulation factors, factors of the intrinsic, extrinsic, and common pathways.</p> <p>2. Describe causes of hemorrhage and thrombus formation.</p> <p>3. Describe anti-thrombotic/anti-fibrinolytic mechanisms.</p> <p>4. Describe the different types of thrombi.</p> <p>5. Describe the removal processes of thrombi in vessels.</p>	<p>1,2</p> <p>2,3,6</p> <p>2,6</p> <p>2,3,6</p> <p>2,6</p>
5	Blood flow homeostasis and disturbance	<p>1. Describe hyperemia and explain pathologic changes you would expect in tissues.</p> <p>2. Describe causes of passive venous congestion and pathologic changes in tissues for acute and chronic passive venous congestion.</p> <p>3. Describe causes of decrease tissue perfusion.</p> <p>4. Contrast the formation of red or pale infarcts in tissues.</p> <p>5. Describe the development of shock, differentiate the mechanisms of anaphylactic, electroshock, and septic shock</p> <p>6. Describe and contrast the stages of shock.</p>	<p>1,2,6</p> <p>2,7</p> <p>2,6</p> <p>2,6</p> <p>2</p> <p>2,7</p> <p>2,3,6,7</p>

		7. Identify clinical and morphologic features of shock.	
6	Inflammation (1) Introduction to inflammation	<ol style="list-style-type: none"> 1. List the causes of inflammation and compare and contrast how each varies in their pathologic presentation. 2. Recognize that inflammatory lesions by applying the Cardinal Signs of Inflammation. 3. Describe how the vascular system responds after an inflammatory insult and apply this to the clinical presentation. 	<p>1,2,6</p> <p>1,2,6</p> <p>2,6</p>
7	Inflammation (2) Cellular mediators	<ol style="list-style-type: none"> 1. Review the categories of inflammatory cells and how to differentiate them based on morphology. 2. Describe the unique features of inflammatory leukocytes and understand how they contribute to the inflammatory process. 3. Be able to interpret what the presence of each cell type tells you about the inflammatory response. 	<p>1,2</p> <p>1,2,6</p> <p>3</p>
8	Inflammation (3) Chemical mediators	<ol style="list-style-type: none"> 1. Categorize each major system and discuss the mediators that have been highlighted. 2. Distinguish how each system contributes to inflammation and/or resolution of inflammation. 3. Illustrate how these systems are intertwined and connected. 	<p>2</p> <p>2,6</p> <p>2,3</p>
9	Inflammation (4) Exudates	<ol style="list-style-type: none"> 1. List each type of exudate and describe it's chemical, cellular and fluid composition. 2. Recognize each exudate grossly and microscopically. 3. Compare and contrast what each exudate tells you about the inciting cause, how it's helpful and/or harmful to the body, and how it's resolved. 4. Correctly use the specific terminology involved in describing exudates. 	<p>1,2,6</p> <p>2,3,6</p> <p>6,7</p> <p>4,6</p>
10	Inflammation (5) Morphologic diagnosis	<ol style="list-style-type: none"> 1. Accurately evaluate gross and microscopic changes in the tissue and develop a correct morphologic diagnosis. 	1,2,3,4
11	Inflammation (6) Healing and repair	<ol style="list-style-type: none"> 1. List the beneficial effects of inflammation and the harmful effects of inflammation. 2. Summarize and understand the four types of hypersensitivity diseases. 3. Explain the mechanisms necessary for tissue repair. 	<p>1,2,7</p> <p>2,6</p> <p>2,6</p>

12	Inflammation (7) Healing and repair	1. Categorize how tissue repair differs depending on tissue type and injury. 2. Describe when and how fibrosis occurs. 3. Recognize potential complications that can hinder effective healing.	1,2,6,7 2,6 6,7
13	Inflammation (8) Case Study 1	1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment.	1,2,3,6,7 1,2,3,6,7
14	Inflammation (9) Case Study 2	1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment.	1,2,3,6,7 1,2,3,6,7
15	Inflammation (10) Review with active learning	1. Review important concepts of inflammation.	6,7
16	Neoplasia (1)	1. Identify/recognize the types of growth disturbances that may precede neoplasia and the possible mechanisms/causes of these growth disturbances. 2. Given morphologic descriptions (written/pictures) of these growth disturbances, identify likely clinical presentations associated with them. 3. Given descriptions of clinical presentations, identify from a list the most likely of these growth disturbances responsible for the clinical presentation.	1,2,6 1,2,3,6,7 1,2,7
17	Neoplasia (2)	1. Given the gross and microscopic description (written and in pictures) of a tumor be able to recognize the name/classification of the tumor and be able to differentiate between benign and malignant tumors. 2. Given the name of a tumor and other relevant tumor diagnostic data, be able to recognize its characteristics, including its expected clinical behavior and possible causes, risk factors and metastatic potential and metastatic pathways. 3. Recognize the stages of initiation, promotion and progression of neoplastic transformation.	1,2,3,6 1,2,6,7 1,2,6
18	Neoplasia (3)	1. Given a description of a possible mechanism of carcinogenesis, be able to distinguish between genetic and epigenetic involvement	1,2,6 2

		<ol style="list-style-type: none"> 2. Be able to identify the primary genetic targets involved in carcinogenesis. 3. Be able to distinguish between the tumor parenchyma and stroma and the importance of tumor stroma on the clinical presentation and behavior of a tumor. 	2,6
19	Neoplasia (4)	<ol style="list-style-type: none"> 1. Given a clinical scenario (species, age, breed, sex, husbandry, symptoms, tumor type, etc.) be able to identify possible cancer risk factors and/or possible causes. 2. Be able to distinguish among the mechanisms of carcinogenesis causes by chemical, physical and microbial agents. 3. Given a clinical scenario and tumor type, be able to recognize possible direct and paraneoplastic effects of the tumor on the host. 	1,2,7 2 2,7
20	Neoplasia (5)	<ol style="list-style-type: none"> 1. Recognize evidence in support of both innate and acquire immune responses to transformed cells. 2. Understand the concept of tumor antigen and be able to Identify the major innate and acquired immune mechanisms that target transformed cells and those with current/potential use in immunotherapy. 3. Recognize the mechanisms tumors use to evade immune detection and immune responses. 	2,6 2 2,6
21	Infection (1)	<ol style="list-style-type: none"> 1. Review and classify the types of inflammation that are associated with different infectious organisms. 2. Evaluate and understand the basic concepts of infectious disease pathogenesis. 3. Evaluate and understand the mechanisms of virulence, host response, and lesion morphology, and clinical significance of viral, bacterial, fungal, protozoal, and prion diseases. 	1,2,6 1,2,6 1,2,3,6,7
22	Infection (2)	<ol style="list-style-type: none"> 1. Identify and analyze the pathogenesis and clinical significance of coinfections and infectious disease complexes. 2. Identify and analyze the pathogenesis and clinical significance of oncogenic infections. 3. Analyze the pathogenesis and importance of dysbiosis as it relates to inflammatory diseases. 	1,2,6,7 1,2,6 1,2,6 1,2

		4. Determine effective ways to stay current on emerging infectious diseases.	
23	Gross Pathology	<ol style="list-style-type: none"> 1. Discuss the clinical importance of the postmortem examination. 2. Review the complete step-wise process of the postmortem examination (necropsy technique). 3. Identify and classify postmortem tissue changes. 4. Identify all of the required descriptive features for gross lesions. 5. Practice generating morphological diagnoses for described lesions. 6. Discuss the importance of ancillary testing and analyze how to use gross findings to guide ancillary tests. 	<p>1</p> <p>1,3</p> <p>3</p> <p>1,3</p> <p>1,3,4</p> <p>1,5</p>
24	Surgical Pathology	<ol style="list-style-type: none"> 1. Discuss the clinical importance of surgical pathology. 2. Review the process of biopsy sample collection and submission to the lab. 3. Determine which components of the biopsy report are critical to the clinician. 4. Examine and understand the techniques which are used to evaluate surgical margins. 5. Evaluate the importance and clinical relevance of histologic grading of tumors. 	<p>1,7</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
25	Urinary (1)	<ol style="list-style-type: none"> 1. Review renal physiology and examine which structures of the kidney are most vulnerable to various types of injury. 2. Discuss and evaluate the concepts of renal functional reserve and renal failure. 3. Identify and classify the clinical indicators of renal failure, and evaluate the limitations of these indicators. 4. Identify the causes of death associated with renal failure with an emphasis on pathogenesis. 5. Identify, compare, and evaluate the different mechanisms of azotemia. 6. Discuss and understand the pathogenesis and pathophysiology of uremic syndrome. 	<p>1,6</p> <p>1,7</p> <p>1,7</p> <p>1,6</p> <p>2</p> <p>1,3,6,7</p>
26	Urinary (2)	<ol style="list-style-type: none"> 1. Recognize, compare, and contrast the pathophysiology of acute renal failure and chronic kidney disease. 2. Identify and understand the types of injury and the defense mechanisms for each 	<p>1,3,7</p> <p>1,6</p>

		<p>compartment of the kidney and each part of the nephron.</p> <p>3. Evaluate and understand how the glomerulus, tubules, interstitium, and renal vasculature respond to injury (basic pathogenesis).</p> <p>4. Evaluate and understand the pathophysiology of glomerular disease.</p>	<p>1,6</p> <p>1,6,7</p>
27	Urinary (3)	<p>1. Review the structure and function of the lower urinary tract with emphasis on vulnerabilities to injury and defense mechanisms.</p> <p>2. Recognize and evaluate the responses to injury and lesion development within the lower urinary tract (pathogenesis).</p> <p>3. Identify and evaluate the congenital diseases of the urinary system.</p> <p>4. Evaluate and understand the pathogenesis and pathophysiology of renal glomerular disease.</p> <p>5. Recognize which diseases are associated with the development of immune complex glomerulonephritis in different species.</p>	<p>1,6</p> <p>1,3,6</p> <p>1,6</p> <p>1,3,6,7</p> <p>6,8</p>
28	Urinary (4)	<p>1. Evaluate and understand the pathogenesis and pathophysiology of renal tubular diseases.</p> <p>2. Identify and evaluate the most common nephrotoxins for different species of domestic animals and describe the pathophysiology for each.</p> <p>3. Evaluate and understand the pathogenesis and pathophysiology of diseases of the renal pelvis.</p> <p>4. Evaluate and understand the pathogenesis and pathophysiology of diseases of the renal interstitium.</p> <p>5. Classify the different types of neoplastic tumors of the kidney and lower urinary tract.</p> <p>6. Classify and evaluate the pathophysiology of congenital developmental anomalies of the lower urinary tract.</p>	<p>1,3,6,7</p> <p>1,7</p> <p>1,3,6,7</p> <p>1,3,6,7</p> <p>1,6</p> <p>1,7</p>
11129	Urinary (5, 6)	<p>1. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in horses.</p>	<p>6,7,8</p> <p>6,7,8</p>

		<p>2. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in ruminants.</p> <p>3. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in pigs.</p> <p>4. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in cats.</p> <p>5. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in dogs.</p>	<p>6,7,8</p> <p>6,7,8</p> <p>6,7,8</p>
30	Hepatobiliary (1)	<p>1. Review liver physiology and examine which structures of the liver are most vulnerable to various types of injury.</p> <p>2. Examine the different zones of the hepatic lobule and evaluate which zones are more susceptible to certain injuries. Recognize the morphologic features of zonal hepatic necrosis.</p> <p>3. Discuss and evaluate the concepts of hepatic functional reserve and hepatic failure.</p> <p>4. Evaluate and understand how the liver responds to various types of injury (basic pathogenesis).</p> <p>5. Review and classify the different causes of hyperbilirubinemia.</p> <p>6. Identify the clinical indicators of hepatic failure.</p> <p>7. Evaluate and understand the pathogenesis and pathophysiology of congenital liver diseases.</p> <p>8. Compare and contrast the pathogenesis and pathophysiology of acute and chronic hepatitis and cholangitis.</p> <p>9. Compare and contrast the pathogenesis of extrahepatic and intrahepatic cholestasis.</p>	<p>1,6</p> <p>6</p> <p>7</p> <p>3,6</p> <p>6,7</p> <p>6,7</p> <p>6,7</p> <p>6,7</p> <p>6</p>
31	Hepatobiliary (2)	<p>1. Evaluate and understand the pathogenesis and pathophysiology of the four types of circulatory disorders of the liver.</p> <p>2. Evaluate and understand the pathogenesis and pathophysiology of liver diseases resulting from hepatocellular accumulations (lipid, glycogen, amyloid, copper, bile pigment, lysosomal dysfunction).</p>	<p>1,3,6,7</p> <p>1,3,6,7</p>

32	Hepatobiliary (3)	<ol style="list-style-type: none"> 1. Evaluate and understand the pathogenesis and pathophysiology of the most common infectious hepatopathies (viral, bacterial, fungal, protozoal, and parasitic) 2. Evaluate and understand the basic pathogenesis of hepatotoxicity. 3. Identify the most common causes of hepatotoxicity in various domestic animal species and understand the pathophysiology of acute and chronic liver toxicity. 	<p>1,3,6,7</p> <p>1,3,6</p> <p>1,6,7,8</p>
33	Hepatobiliary (4)	<ol style="list-style-type: none"> 1. Classify and evaluate the most common types of primary and metastatic liver neoplasia. 2. Evaluate and understand the pathogenesis and pathophysiology of hepatic disease in horses. 3. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in ruminants. 4. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in pigs. 	<p>1,6</p> <p>6,7,8</p> <p>6,7,8</p> <p>6,7,8</p>
34	Hepatobiliary (5)	<ol style="list-style-type: none"> 1. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in cats. 2. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in dogs. 3. Evaluate and understand the pathogenesis and pathophysiology for diseases of the exocrine pancreas. 	<p>6,7,8</p> <p>6,7,8</p> <p>6,7</p>
35	Alimentary (1)	<ol style="list-style-type: none"> 1. Review the structure and function of the oral cavity. 2. Review the defense mechanisms of the oral cavity. 3. Evaluate and understand the pathogenesis and pathophysiology for diseases of the oral cavity including developmental anomalies, erosive and ulcerative disease, gingivitis and stomatitis, viral and bacterial diseases, and oral neoplasia. 	<p>1,6</p> <p>6</p> <p>1,3,6,7</p>
36	Exam Review	NA	NA
37	Alimentary (2)	<ol style="list-style-type: none"> 1. Review and understand normal tooth development and histogenesis. 2. Evaluate and understand the pathogenesis and pathophysiology for diseases of the 	<p>1,6</p> <p>1,6,7</p>

		teeth, tonsils, salivary gland, tongue, and esophagus.	
38	Alimentary (3)	1. Identify and understand the pathogenesis and pathophysiology for diseases of the rumen, reticulum, abomasum, and stomach.	1,3,6,7
39	Alimentary (4)	1. Review the structure and function of the intestinal tract. 2. Review and evaluate the defense mechanisms of the intestine. 3. Describe and classify intestinal obstructions, displacements, intussusception, and herniation. 4. Evaluate and understand the pathogenesis and pathophysiology of intestinal diseases: developmental anomalies, megacolon, ileus, lymphangiectasia.	1,6 6 1,3,6 1,3,6,7
40	Alimentary (5)	1. Evaluate and understand the pathogenesis and pathophysiology of viral enteropathies. 2. Evaluate and understand the pathogenesis and pathophysiology of bacterial enteropathies. 3. Review and classify the most common intestinal neoplasia of domestic animals.	1,3,6,7 1,3,6,7 1,3,6,7
41	Alimentary (6)	1. Evaluate and understand the pathogenesis and pathophysiology for alimentary diseases of the horse . 2. Evaluate and understand the pathogenesis and pathophysiology for alimentary diseases of ruminants .	6,7,8 6,7,8
42	Alimentary (7)	1. Evaluate and understand the pathogenesis and pathophysiology for alimentary diseases of the pig . 2. Evaluate and understand the pathogenesis and pathophysiology for alimentary diseases of dogs and cats . 3. Evaluate and understand the pathogenesis and pathophysiology for diseases of the peritoneum, omentum, and mesentery .	6,7,8 6,7,8 6,7
43	Integumentary (1)	1. Review and examine the structure and function of the skin. 2. Review and examine defense mechanisms of the skin. 3. Review and evaluate the steps of skin regeneration and repair. 4. Identify and evaluate the responses of the <u>epidermis</u> to injury.	1,6 6 1,6 1,6

44	Integumentary (2)	<ol style="list-style-type: none"> 1. Identify and evaluate the responses of the <u>epidermis</u> to injury (cont.). 2. Identify and evaluate the responses of the <u>dermis</u> to injury. 3. Identify and evaluate the responses of the <u>adnexa</u> to injury. 	<p>1,6</p> <p>1,6</p> <p>1,6</p>
45	Integumentary (3)	<ol style="list-style-type: none"> 1. Identify, examine, and evaluate congenital and hereditary skin diseases. 2. Identify, examine, and evaluate skin diseases caused by actinic injury, physical injury, and chemical injury. 	<p>1,6</p> <p>1,6</p>
46	Integumentary (4)	<ol style="list-style-type: none"> 1. Identify, compare, and classify the four types of endocrine-associated dermatopathy. 2. Identify, compare, and evaluate immune mediated skin diseases – hypersensitivity, autoimmune diseases. 	<p>1,6,7</p> <p>1,6,7</p>
47	Integumentary (5)	<ol style="list-style-type: none"> 1. Identify, compare, and evaluate immune mediated skin diseases – autoimmune diseases (cont.). 2. Identify, compare, and evaluate the most important viral skin diseases. 3. Recognize the associated skin lesions and analyze the pathogenesis of infection with poxviruses, herpesviruses, and papillomaviruses. 	<p>1,3,6</p> <p>1,6</p> <p>1,3,6</p>
48	Integumentary (6)	<ol style="list-style-type: none"> 1. Identify, compare, and evaluate the most important bacterial skin diseases. 2. Evaluate the mechanisms by which systemic infections can result in cutaneous lesions and list the most common examples. 3. Recognize the associated lesions and analyze the pathogenesis of bacterial skin infections. 	<p>1,6</p> <p>6,7</p> <p>3,6</p>
49	Integumentary(7)	<ol style="list-style-type: none"> 1. Identify, compare, and evaluate the most important fungal and parasitic skin diseases. 2. Recognize the associated lesions and analyze the pathogenesis of fungal and parasitic skin diseases. 	<p>1,6</p> <p>3,6</p>
50	Integumentary (8)	<ol style="list-style-type: none"> 1. Review the basic mechanisms of oncogenesis. 2. Review the significance of tumor cell morphology as it relates to accurate diagnosis of skin neoplasia. 	<p>1,6</p> <p>6</p> <p>3,6</p>

		3. Recognize and compare the morphologic features that distinguish benign neoplasia from malignant neoplasia.	
51	Integumentary (9)	1. Identify, compare, and evaluate the most important neoplastic skin diseases in domestic animals. 2. Analyze and evaluate the importance of histologic grading using the example of canine mast cell tumors. 3. Apply the differentiating features of benignancy and malignancy as it relates to common skin tumors. 4. Recognize and examine paraneoplastic conditions.	1,6 1,6,7 1,6 6,7
52	Integumentary(10)	1. Review, compare, and evaluate the morphology and pathogenesis of skin disease. 2. Review the tissue response to skin injury as it relates to lesion development. 3. Analyze and compare the different types of skin lesions. 4. Recognize the different patterns of lesions that distinguish specific skin diseases.	1,3,6 1,6 1,6 1,6
53	Exam Review	NA	NA
Lab.	Topic	Learning Outcomes	CLO
1	Inflammation – case-based active learning	1. Evaluate gross tissues for inflammatory lesions. 2. Propose the pathogenesis of disease. 3. Determine the likely clinical outcome.	3,6 6 7
2	Neoplasia – case-based active learning	1. Be able to recognize and describe the main microscopic features that characterize hyperplasia and benign and malignant tumors. 2. Given the cell of origin and a description (gross and microscopic) of a tumor, be able to correctly name the tumor. 3. Given a signalment, history and written histopathology report involving a tumor, be able to distinguish between benign and malignant tumors. 4. Be able to distinguish between the tumor parenchyma and stroma.	6 2,3,6 2,3,6 2

Alignment of Course Level Outcomes (CLO) with Program Level Outcomes (PLO)

CLO	SVM Program Level Outcome (PLO)
1	Core clinical competency. PLO 2, 3, 4, 20.
2	Core clinical competency and medical knowledge. PLO 2, 3, 4.
3	Core clinical competency. PLO 2, 3, 4, 20.
4	Core clinical competency and medical knowledge. PLO 3, 4, 6, 20.
5	Core clinical competency. PLO 6, 20.
6	Core medical knowledge. PLO 3, 4, 6.
7	Core clinical competency. PLO 3, 4, 6, 20.
8	Core medical knowledge. PLO 3, 4, 6.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
***VETERINARY PATHOLOGY II SYLLABUS* (5 credits)**
PTHB 507, TERM 4
FALL 2020



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SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PATHOLOGY II SYLLABUS (5 credits)
PTHB 507, TERM 4
FALL 2020

1. Course Faculty and Staff Information

1.1. Course Directors:

1.1.1. Dr. M. I. Bhaiyat, BVM, PhD; Professor (Veterinary Pathology)

1.1.1.1. e-mail: mibhaiyat@sgu.edu

1.1.1.2. Tel.: 444-4175, EXT. 3338

1.1.1.3. Office Location: My office is located in the building behind Ray & Jan Sis Hall and Superdorm 5 (St. John's Hall). The building is labelled as "**Veterinary Research and Diagnostic Laboratories**"; in the corridor that leads to the Department of Pathobiology, you will see the Microbiology Lab on the left and the Virology Lab on the right; continue straight along this corridor which leads into our office spaces. My office is the last one in this office space.

1.1.2. Dr. C. Dores, DVM, MS, PhD, Diplomate ACVP; Associate Professor (Veterinary Pathology)

1.1.2.1. email: cdores@sgu.edu

1.1.2.2. Tel: 444- 4175 EXT. 3618

1.1.2.3. Office Location: SVM Trailer Offices

1.2. Office Hours:

1.2.1.1. On Zoom by availability or on regular schedule

1.3. Staff members:

1.3.1. Ms. Cindy Edwards; Executive Secretary

1.3.1.1. e-mail: [<cedwards@sgu.edu>](mailto:cedwards@sgu.edu)

1.3.1.2. Tel.: 444-4175, EXT. 3339

1.3.2. Mr. Ferron Victor; Laboratory Technician (Audio-Visual)

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1.3.3. Mr. Ray Samuel; Laboratory Technician (Necropsy)

1.3.3.1. e-mail: [<rsamuel@sgu.edu>](mailto:rsamuel@sgu.edu)

- 1.3.3.2. Tel.: 444-4175, EXT. 3570
- 1.3.4.** Ms. Ava McIntyre; Laboratory Technician (Necropsy)
 - 1.3.4.1. e-mail: <amcinty4@sgu.edu>
 - 1.3.4.2. Tel.: 444-4175, EXT. 3570
- 1.3.5.** Ms. Veronica Mapp-Alexander; Laboratory Technician (Histopathology)
 - 1.3.5.1. e-mail: <vmappall@sgu.edu>
 - 1.3.5.2. Tel.: 444-4175, EXT. 3415

2. Course location

- 2.1.** Online location: Sakai resources being used (i.e., Panopto, Lessons, Assignments)
- 2.2.** Scheduled Zoom sessions

3. Prerequisite and/or co-requisite courses

- 3.1.** Veterinary Pathology I (PTHB 506)
- 3.2.** Good base on Anatomy, Physiology, Histology/Embryology, Parasitology, Virology, Bacteriology/Mycology, Clinical Pathology, and Pharmacology

4. Required resources

- 4.1.** Pathologic Basis of Veterinary Disease, 6th Edition (2017). By James F. Zachary. St. Louis, Elsevier. ISBN: 978-0-323-35775-3
- 4.2.** Computer with functional microphone, camera, and speakers
- 4.3.** Internet connection with bandwidth supportive of streaming videos and online video calls

5. Recommended resources

- 5.1.** Jubb, Kennedy, and Palmer's Pathology of Domestic Animals, Vol. 1-3, 6th edition (2016), Edited by M. Grant Maxie. St. Louis, Elsevier. ISBN: 978-0-7020-5317-7, 978-0-7020-5318-4, 978-0-7020-5319-1
- 5.2.** Veterinary Pathology. By T.C. Jones, R.D. Hunt and N.W. King, 6th Edition (1997). New York, Lippincott Williams and Wilkins. ISBN: 0683-04481-8

6. Special accommodation

- 6.1.** Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- 6.2.** Information can be found at mycampus.sgu.edu/group/saas

7. Other requirements

- 7.1.** Not applicable

8. Course rationale

- 8.1.** Emphasis is placed on pathogenesis, pathophysiology, and morphologic changes at the macroscopic, microscopic, and molecular levels.
- 8.2.** In lecture, general mechanisms for major types of disease processes are stressed.
- 8.3.** Assignments and follow up Zoom sessions serve to illustrate and clarify material presented in lecture and stresses practical, hands-on recognition of disease in organs and tissues at the gross and microscopic levels.

9. Course-level outcomes

On successful completion of the course, you should be able to:

- 1.** Describe the etiology, pathogenesis, structural and functional manifestations of diseases that affect specific organ systems of the body and to be able to place specific diseases in context with their prevalence, morbidity and mortality in society as a whole.
- 2.** Develop a vocabulary with which to communicate this knowledge to others.
- 3.** Recite the natural course of specific disease states and the results of interventions by the clinician.
- 4.** Demonstrate skill in laboratory test selection and interpretation so as to make judicious and cost-effective use of the clinical laboratory to solve clinical problems.
- 5.** Relate anatomic alterations induced by specific diseases to their clinical findings.
- 6.** Appreciate how medical knowledge is acquired, evaluated and disseminated so as to be able to critically analyze current medical issues and future advances.
- 7.** Describe how pathology as a clinical specialty is essential to the proper practice of clinical medicine.

10. Lesson-level outcomes

10.1. Pathology of the lymphoid system

1. Recall the formation of lymphoid cells and the role of their regulatory factors.
2. Recall the function and architecture of the lymphoid system.
3. List the primary and secondary lymphoid organs.
4. Recall the function and the architecture of the thymus.
5. Describe the lesions of the thymus and the diseases causing them.
6. Recall the function and the architecture of the spleen.
7. Describe the lesions of the spleen and the diseases causing them.
8. Recall the function and architecture of the lymph node.
9. Describe the lesions that affect the lymph node and the diseases causing them.

10.2. Pathology of the endocrine system

10. State the concept of primary and secondary hypofunction of an endocrine gland.

11. State the concept of primary and secondary hyperfunction of an endocrine gland.
12. Predict the production of hormone-like factors by nonendocrine tumors.
13. Recall endocrine dysfunction due to failure of target cell response.
14. Recall that endocrine hyperactivity may be secondary to disease of other organs.
15. Recall that endocrine dysfunction may result from abnormal degradation of hormones.
16. Relate iatrogenic syndromes of hormone excess.
17. Enumerate the major disorders of the pituitary.
18. Enumerate the major disorders of the thyroid.
19. Enumerate the major disorders of the adrenal gland
20. Enumerate the major disorders of the parathyroid.
21. Enumerate the major disorders of the pancreatic islets.
22. Enumerate the major disorders of the chemoreceptor organs.

10.3. Pathology of the musculoskeletal system

Lesson 1:

23. List cells of the skeletal system and associate them with bone homeostasis and development of disease.
24. Describe how bone reacts to injury.
25. List types of bone fractures
26. Outline cell types involved with bone healing process, and describe phases of bone healing
27. List factors which delay healing of a fracture.

Lesson 2:

28. List the common examples of congenital skeletal abnormalities
29. Describe the pathogenesis and consequences of inflammation of the bone.
30. List, compare and contrast causes of osteomyelitis in small animals, horses and cattle.

Lesson 3:

31. List and describe the pathogenesis of metabolic bone disease (deficiency of, and excess, mineralized bone).
32. Describe the pathogenesis and consequences of toxic bone disease.

Lesson 4:

33. Describe acute and chronic the reaction of the joint to injury.
34. Describe the pathogenesis and consequences of degenerative joint disease.
35. Give examples of degenerative joint diseases

Lesson 5:

36. Describe the pathogenesis and consequences of degeneration of intervertebral discs.
37. List, compare and contrast common forms of infectious and non-infectious arthritis in domestic animals

Lesson 6:

38. List compare and contrast tumors of the skeletal system of domestic animals and associate them with disease progressions

Lesson 7:

39. List of the acute and chronic responses of muscle to injury.
40. List the causes and describe the consequences of muscle atrophy.
41. List the causes and describe the consequences of muscle hypertrophy.
42. List the common causes of myositis and where appropriate identify the species in which they occur most frequently.

Lesson 8:

43. Classify the types of muscle disease and discuss the etiology, pathogenesis, lesions, and sequelae of the types of myopathies (degenerative, inflammatory, congenital/inherited, endocrine, electrolyte, neuropathic, neuromuscular junction, neoplasia [DICE2N3]).
44. Outline the lesions associated with severe muscular traumatic injury.
45. List the common tumors of muscles.

Lesson 9:

Time allocated for completion of assignment

Lesson 10:

Case discussion/ Zoom Session

Assignments and follow up zoom sessions serve to illustrate and clarify material presented in lecture and stresses practical, hands-on recognition of disease in organs and tissues at the gross and microscopic levels.

10.4. Pathology of the eye and ear

46. Define the common terms used in referring to diseases of the eye and ear.
47. Discuss the spectrum of inherited and congenital abnormalities which occur in the eye and ear.
48. Correlate how disease starting in one part of the eye can have effects throughout the globe.
49. List the causes and outline the consequences of conjunctivitis and ulcerative keratitis.
50. List the causes and outline the consequences of uveal tract infection.

51. List the causes and outline the consequences of retinal diseases.
52. Enumerate the predisposing factors which contribute to inflammation in the external ear and outline the consequences of spread of inflammation to the middle and internal ear.
53. Describe the main tumors of the eye and ear which occur in domestic animals.

10.5. Pathology of the female and male reproductive system

Lesson 1:

54. List the major developmental anomalies of the female reproductive system
55. List and compare the Disorders of Sexual Development

Lesson 2:

56. List, compare and contrast infectious agents that can affect the ovaries
57. List and compare ovarian neoplasms regarding cellular origin, hormone production, and neoplasm behavior

Lesson 3:

58. List, compare and contrast infectious agents that can affect uterine tubes, uterus, vagina and vulva
59. Compare and contrast the effect of reduced estrogen and progesterone stimulation in the female reproductive tract and associate them with the development of disease
60. List etiologies that cause a reduction in the hormonal stimulation in female reproductive organs
61. Compare and contrast the effect increased estrogen and progesterone stimulation in the female reproductive tract
62. List and compare uterine neoplasms regarding cellular origin, and neoplasm behavior

Lesson 4:

63. List, compare and contrast infectious agents that can affect the vagina and vulva
64. List, compare and contrast neoplasms that can develop in the vagina and vulva and associate them with behavior

Lesson 5:

65. List the main infectious agents associated with mastitis in animals.

66. Compare and contrast all presentations of mastitis and associate them with etiologic organisms
67. Describe the main types of mammary tumors and list the most common types of tumors in the queen and bitch.
68. List and compare histological features from benign versus malignant mammary tumors in domestic animals.

Lesson 6:

69. List and compare the major non-infectious causes of early embryonic death and abortion
70. List and compare the major causes of infectious abortions
71. List all zoonotic agents that can cause abortions in domestic species

Lesson 7:

72. List the major developmental anomalies of the male reproductive system.
73. Describe the degenerative, inflammatory and neoplastic changes of the testes
74. List zoonotic agents that can infect the male reproductive tract
75. Compare and contrast testicular neoplasms regarding cellular of origin, hormone production and associated lesions

Lesson 8:

76. List the main inflammatory, infectious and neoplastic lesions of the epididymis and the accessory sex glands.
77. List the inflammatory, hyperplastic and neoplastic abnormalities occurring in the prostate gland.
78. List the main inflammatory, infectious and neoplastic lesions of the scrotum, penis and prepuce.

Lesson 9:

- 10.5.1.1. Time allocated for working on assignment/case study

Lesson 10:

- 10.5.1.2. Case discussion/ Zoom Session

Assignments and follow up zoom sessions serve to illustrate and clarify material presented in lecture and stresses practical, hands-on recognition of disease in organs and tissues at the gross and microscopic levels.

10.6. Pathology of the nervous system

79. Recite the terminology of the nervous system and its disorders.
80. Illustrate the ways in which the cellular components of the nervous system respond to injury.

81. Describe the consequences of trauma and pressure changes within the central nervous system (CNS).
82. Describe the spectrum of degenerative diseases of the CNS.
83. Discuss the spectrum of congenital/inherited abnormalities which can occur in the central nervous system.
84. Describe how infectious agents gain access to the nervous system.
85. Give examples of specific infectious/inflammatory diseases affecting the nervous system of domestic animals.
86. Describe necrosis/malacia in the CNS giving examples of the major causes and the consequences thereof.
87. Enumerate the types of metabolic disorders which can affect the nervous system of domestic animals.
88. Describe the type of disorders which can affect the spinal cord and appreciate their consequences.
89. Describe the process of degeneration and regeneration in peripheral nerves.
90. Describe the main types of tumors of the CNS which occur in domestic animals.
91. Recognize color change and mass lesions in gross specimens of the central nervous system.

10.7. Pathology of the cardiovascular system

92. Discuss the basic pathophysiologic mechanisms of cardiovascular dysfunction.
93. Explain the pathogenesis of congestive cardiac failure
94. Enumerate the changes characteristic of common types of congenital cardiac diseases and their significance.
95. List the different types of pericardial disease and how they develop.
96. List the various acquired diseases of the myocardium.
97. Describe the etiology and pathogenesis of endocardial diseases particularly those affecting the cardiac valves.
98. Describe the etiology and pathogenesis of cardiomyopathy in the dog and cat.
99. List the most common neoplasms of the heart.
100. Enumerate the disease processes that affect arteries and veins.
101. Recognize cardiac diseases post-mortem and collect appropriate tissues for histopathologic evaluation.

10.8. Pathology of the respiratory system

102. Recall the function and architecture of the respiratory system.
103. Recall the defense mechanisms of the respiratory system and the consequences of impairment of the defense mechanism.

104. Identify the significance of the factors involved in respiratory disease due to air-borne and blood-borne agents.
105. List the specific diseases of nasal cavity in bovines, equines, cats, and pigs describing the etiology, gross and microscopic lesions, and diagnostic methods.
106. List the neoplasms of the nasal cavity.
107. List the specific diseases of the larynx, trachea, and bronchi in bovine, equine, dog, and cats describing the etiology, gross and microscopic lesions, and diagnostic methods.
108. Classify pneumonia and describe the etiology, pathogenesis, lesions, and sequelae of the basic morphological types of pneumonia.
109. Describe the types of pneumonia in ruminants (cattle, sheep, goat), horse, pig, dog, and cat including the etiology, clinical signs/lesions, sequelae, and diagnostic methods.
110. List the main types of primary pulmonary tumors and the involvement of the lungs in disseminated neoplastic disease in domestic animals.
111. List of the different types of pulmonary vascular disease and their pathological significance.
112. Describe the noninflammatory and inflammatory conditions and tumors affecting the pleura and mediastinum including the etiology, pathogenesis, lesions, and sequelae.
113. Be able to recognize, at post mortem, the common pulmonary lesions of ruminants (cattle, sheep, goats), horse, pig, dog, and cat.

11. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcomes (CLOs) #	SGU-SVM Program Level Outcomes (PLOs)
1, 3, 5, 7	1. Recall, understand, and adequately utilize multidisciplinary knowledge of physiology in homeostasis and pathologic processes
2, 4, 6, 7	2. Identify and explain disturbances of organ systems in the context of disease
2, 4, 6, 7	3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and toxic, metabolic, neoplastic and developmental diseases
2, 4, 6, 7	4. Explain the relationship between disease processes and clinical signs. And create a list of differential diagnosis
2,3,4,7	12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.

2,3,4,7	14. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.
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12. Course Schedule

12.1. As outlined below:

LECTURE SCHEDULE FOR VETERINARY PATHOLOGY II, TERM 4 FALL 2020 - Revised						
Week	Lecture	Day	Date	Time	Lecturer	Lecture Topic
1	1	Monday	17-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	2	Tuesday	18-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	3	Wednesday	19-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	4	Thursday	20-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
		Friday	21-Aug	Online/Asynchronous	-	-
2	5	Monday	24-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	6	Tuesday	25-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	7	Wednesday	26-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
	8	Thursday	27-Aug	Online/Asynchronous	Bhaiyat	Lymphoid System
		Friday	28-Aug	Online/Asynchronous		
3	9	Monday	31-Aug	Online/Asynchronous	Bhaiyat	Endocrine System
	10	Tuesday	1-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
	11	Wednesday	2-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
	12	Thursday	3-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
	13	Friday	4-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
4	14	Monday	7-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
	15	Tuesday	8-Sep	Online/Asynchronous	Bhaiyat	Endocrine System
		Wednesday	9-Sep	8:30 AM		Quiz 1
	16	Thursday	10-Sep	Online/Asynchronous	Dores	Skeletal System
	17	Friday	11-Sep	Online/Asynchronous	Dores	Skeletal System
5	18	Monday	14-Sep	Online/Asynchronous	Dores	Skeletal System
	19	Tuesday	15-Sep	Online/Asynchronous	Dores	Skeletal System
	20	Wednesday	16-Sep	Online/Asynchronous	Dores	Skeletal System
	21	Thursday	17-Sep	Online/Asynchronous	Dores	Skeletal System
	22	Friday	18-Sep	Online/Asynchronous	Dores	Muscular System
6	23	Monday	21-Sep	Online/Asynchronous	Dores	Muscular System Musculoskeletal System -
	24	Tuesday	22-Sep	Online/Asynchronous	Dores	Assignment/Lab Zoom - Discussion of
	25	Wednesday	23-Sep	13:30 AST	Dores	assignments
	26	Friday	25-Sep	Online/Asynchronous	Bhaiyat	Eye
7	27	Monday	28-Sep	Online/Asynchronous	Bhaiyat	Eye
	28	Tuesday	29-Sep	Online/Asynchronous	Bhaiyat	Eye
	29	Wednesday	30-Sep	Online/Asynchronous	Bhaiyat	Eye
	30	Thursday	1-Oct	Online/Asynchronous	Bhaiyat	Ear

	31	Friday	2-Oct	Online/Asynchronous	Bhaiyat	Ear
8		Monday	5-Oct	8:30 AM	Pathology Mid-Term Examination	
		Tuesday	6-Oct	8:30 AM	VPH Mid-Term Examination	
		Wednesday	7-Oct	-	-	-
		Thursday	8-Oct	8:30 AM	AF&EAD Mid-Term Examination	
		Friday	9-Oct	8:30 AM	Introd to Clin Med Mid-Term Exam	
9		Monday	12-Oct	8:30 AM	Anesthesiology Mid-Term Exam	
	32	Tuesday	13-Oct	Online/Asynchronous	Dores	Reproductive System
	33	Wednesday	14-Oct	Online/Asynchronous	Dores	Reproductive System
	34	Thursday	15-Oct	Online/Asynchronous	Dores	Reproductive System
	35	Friday	16-Oct	Online/Asynchronous	Dores	Reproductive System
10	36	Monday	19-Oct	Online/Asynchronous	Dores	Reproductive System
	37	Tuesday	20-Oct	Online/Asynchronous	Dores	Reproductive System
	38	Wednesday	21-Oct	Online/Asynchronous	Dores	Reproductive System
	39	Thursday	22-Oct	Online/Asynchronous	Dores	Assignment/Lab -based on clinical cases Zoom - Discussion of assignment
	40	Friday	23-Oct	13:30 AST	Dores	assignment
11	41	Monday	26-Oct	Online/Asynchronous	Bhaiyat	Nervous System
	42	Tuesday	27-Oct	Online/Asynchronous	Bhaiyat	Nervous System
	43	Wednesday	28-Oct	Online/Asynchronous	Bhaiyat	Nervous System
	44	Thursday	29-Oct	Online/Asynchronous	Bhaiyat	Nervous System
	45	Friday	30-Oct	Online/Asynchronous	Bhaiyat	Nervous System
12	46	Monday	2-Nov	Online/Asynchronous	Bhaiyat	Nervous System
	47	Tuesday	3-Nov	Online/Asynchronous	Bhaiyat	Nervous System
		Wednesday	4-Nov	Online/Asynchronous	-	-
	48	Thursday	5-Nov	Online/Asynchronous	Bhaiyat	Nervous System
	49	Friday	6-Nov	Online/Asynchronous	Bhaiyat	Nervous System
13		Monday	9-Nov	8:30 AM	Quiz 2	
	50	Tuesday	10-Nov	Online/Asynchronous	Bhaiyat	Cardiovascular System
	51	Wednesday	11-Nov	Online/Asynchronous	Bhaiyat	Cardiovascular System
	52	Thursday	12-Nov	Online/Asynchronous	Bhaiyat	Cardiovascular System
	53	Friday	13-Nov	Online/Asynchronous	Bhaiyat	Cardiovascular System
14	54	Monday	16-Nov	Online/Asynchronous	Bhaiyat	Cardiovascular System
	55	Tuesday	17-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	56	Wednesday	18-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	57	Thursday	19-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	58	Friday	20-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
15	59	Monday	23-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	60	Tuesday	24-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	61	Wednesday	25-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	62	Thursday	26-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
	63	Friday	27-Nov	Online/Asynchronous	Bhaiyat	Respiratory System
16		Monday	30-Nov	8:30 AM	Path II Final Examination	

	Tuesday	1-Dec	-	-	-
	Wednesday	2-Dec	8:30 AM		Surgical Skills Final Examination
	Thursday	3-Dec	-	-	-
	Friday	4-Dec	8:30 AM		VPH Final Examination
17	Monday	7-Dec	8:30 AM		Anesthesiology Final Examination
	Tuesday	8-Dec	-	-	-
	Wednesday	9-Dec	-		Introd to Clin Med Final Examination
	Thursday	10-Dec	-	-	-
	Friday	11-Dec	8:30 AM		AF&EAD Final Examination

13. Grading and assessment policy, and grading rubrics (must comply with SGU and SVM assessment guidelines)

13.1. Qualitative deficiency:

SVM Satisfactory Academic Progress Guidelines: Qualitative Deficiency

Grades of “A”, “B+”/”B”, “C+”/ “C”, and “P” refer to an Excellent Pass, Good Pass, Acceptable Pass and Pass, respectively. Grades of “D+”, “D”, and “F” are all unsatisfactory grades and require remediation.

Academic advancement will be based on satisfactory grades in all courses in the SGU SVM curriculum. Thus, no grade below a “C” will be allowed; all grades below a “C” must be remediated to a satisfactory grade of “C” or better.

Unsatisfactory grades of “D+” or “D” will result in a mandatory re-sit examination and a grade of “F” will require repeating the course.

Unsatisfactory grades of “D+” or “D” obtained when either the term or cumulative GPA is less than 2.0 will, in most cases, be remediated by repeat of the course(s) rather than by a re-sit examination.

Courses involving mastery of clinical skills may require repeating the course to achieve competency and a satisfactory grade. The CAPPs will determine if a re-sit examination or repeating the course is the appropriate avenue for remediation.

When a course is being repeated due to an unsatisfactory grade of “D+”, “D” or “F”, the student will be placed on Academic Probation.*

Academic Probation will continue until the student has been cleared of all outstanding lower term courses by attaining a grade of a “C” or better, and is ready to progress to the next higher term, on a regular basis.

An unsatisfactory grade obtained (“D+”, “D”, “F”) while on probation will result in a recommendation for Dismissal.**

Student(s) mandated to take a re-sit examination may opt to repeat the course.

Two “F’s” or any combination of three (3) unsatisfactory grades (“D+”, “D”, and “F”) will result in dismissal.

The following table describes the policy to be implemented by the CAPPS to determine a student’s academic progress when an unsatisfactory grade (“D+”, “D”, “F”) is obtained:

	Qualitative Deficiency	Recommendation by CAPPS
“D+” or “D” Grades		
1	First “D+”/“D” grade (Term and Cumulative GPA \geq 2.0)	Mandatory Re-sit examination or Repeat the course (at the discretion of CAPPS)
2	Second “D+”/“D” grade following successful remediation of a previous “D+” or “D”, and successful completion of the terms of Academic Probation (Term and Cumulative GPA $>$ 2.0)	Mandatory Re-sit examination or Repeat the course (at the discretion of CAPPS)
3	Two “D+”/“D” grades in the same term	Repeat both courses while on Academic Probation
4	Two “D+”/“D” grades in one term when a previous remediation has already occurred	Dismissal
5	An unsatisfactory grade (“D+”, “D” or “F”) in a course that is repeated	Dismissal
“F” grade		
6	First “F” grade with or without any previous “D+”/“D”	Repeat course while on Academic Probation
7	Second “F” grade	Dismissal
8	“D+”/“D” and an “F” grade in one term without previous remediations	Repeat courses while on Academic Probation
9	“D+”/“D” and an “F” grade in one term with a previous remediation	Dismissal

10	Two “F” grades in the same term	Dismissal
11	Any combination of 3 or more grades (“D+”, “D”, “F”) below “C”	Dismissal
12	Any “D+”, “D”, or “F” while on Academic Probation	Dismissal
13	<p>Remediation</p> <p>A student will be allowed remediation of only two unsatisfactory grades (“D+”, “D”, “F”).</p> <p>Remediation of an unsatisfactory grade (“D+”, “D”, “F”) may be by a re-sit examination, if permitted, or by repeating the course (following the guidelines listed above).</p> <p>Failure of a re-sit examination automatically mandates a repeat of the course (counts as one remediation attempt). Repeating the course will be counted as a second and, in most cases, last remediation allowed for the first six (6) terms.</p> <p>A third unsatisfactory grade (“D+”, “D”, “F”) within the first six (6) terms or an unsatisfactory grade (“D+”, “D”, “F”) in a repeated course will result in a recommendation for dismissal.</p>	
14	<p>The highest grade recorded for satisfactory performance on a re-sit examination, and therefore for the particular course, will be a “C”. The original unsatisfactory grade (“D+”, “D”) will remain on the transcript.</p>	
15	<p>A student who obtains a “D+”, “D” or “F” in a re-sit examination will be mandated to repeat the course (if the two attempts allowed for remediation have not been exhausted) and will be placed on Academic Probation; the original unsatisfactory grade (“D+”, “D”, or “F”) will remain on the transcript.</p>	
16	<p>The grade obtained upon successful repeat of a course will be the new grade recorded on the transcript; the previous unsatisfactory grade (“D+”, “D”, “F”) will remain on the transcript.</p>	
17	<p>Each instance of obtaining an unsatisfactory grade (“D+”, “D”, “F”) in a course will be counted toward the maximum allowable number of unsatisfactory grades of two (2), regardless of successful remediation by a re-sit examination or by repeating the course.</p>	

* Academic Probation (AP): Students who are placed on AP with mandatory repetition of coursework have to repeat all courses in which a grade of “F”, “D”, or “D+” were obtained. AP will be cleared if students:

- 1 Achieve a cumulative GPA of 2.00 or above in each term that they spend on AP.
- 2 Do not receive any unsatisfactory grades (“D+”, “D”, “F”) during their AP.
- 3 Fulfill all other requirement stipulated by the CAPPs.

** Dismissal: Can be appealed by the student.

13.2. Grading scale: Final Grading will be based on cumulative performance of all examinations given for the course. Grading will be done as follows:

Letter	Range (%)	Grade Points	Grade Points Meaning
A	89.5-100	4.00	Excellent Pass
B+	84.5-89.49	3.50	Good Pass
B	79.5-84.49	3.00	Good Pass
C+	74.5-79.49	2.50	Acceptable Pass
C	69.5-74.49	2.00	Acceptable Pass
D+	64.5-69.49	1.50	Unsatisfactory Grade*
D	59.5-64.49	1.00	Unsatisfactory Grade*
P	0.00		Pass
F	1.0-59.49	0.00	Fail
I	0.0-0.99		Incomplete

*Requires remediation

13.3. Assessment policy:

13.3.1. All students are expected to be familiarized with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. All students are expected to attend all assigned academic activities for all courses currently registered. Scheduling of examinations is at the discretion of the University. University policy dictates that an examination **cannot** be given prior to the scheduled date. Students will not be able to defer an examination for misreading the

examination schedule, accommodating travel plans, or any other reason not considered a serious mitigating circumstances. Students who fail to appear for an examination without a valid reason will receive a score of “0” points for the examination.

13.3.2. Completion Examination: Students who receive an approved grade of Incomplete (“I”) for missing the final examination in a course must take a completion examination during the first two (2) days of classes in the following term as scheduled by the school. A completion examination for a quiz or mid-term examination must be taken within one (1) week of the deferment. Incomplete grades are given when course requirements have not been completed due to serious mitigating circumstances such as **illness or family emergencies**. The Office of the Dean of Students must approve the reason supporting the receipt of “I” grades. “I” grades remain on the transcript until another grade is given upon completion. If students have an “I” grade on their transcript, the required coursework must be completed prior to registration for the next term. If the work is not completed and the grade not received from the instructor within 30 days, the Incomplete (“I”) will be automatically changed to a Fail (“F”) by the Office of the Registrar. Incompletes are interim grades. Students do not repeat the course if they have received an “I” grade. The format and content of the Completion examinations will be defined by the Course Director and will be comparable in format, length, and appropriate course content as the examination that was deferred.

13.3.3. Re-sit Examination: Under certain circumstances, students may be given an option to remedy “D+”, “D” and “F” grades by taking a mandatory comprehensive re-sit examination during the first two (2) days of classes in the following term as scheduled by the school.

13.3.3.1. Upon obtaining a grade of “C” or better on the re-sit exam, the maximum course grade earned is a “C”.

13.3.3.2. At mid-term, students that are at risk of getting an unsatisfactory grade (“D+”, “D”, “F”) in the course will be advised by the CAPPs to prepare for remediation.

13.3.3.3. It is the responsibility of the student to make appropriate and timely travel arrangements to return to Grenada to take the re-sit examination during the first two (2) days of classes in the following term as scheduled by the school.

13.3.3.4. Students will be expected to appear for the re-sit examination. Failure to appear without an accepted excuse constitutes an automatic mandatory repeat of the course and sanctions related to unprofessional behavior.

14. Exams and Assessment:

14.1. There will be four (4) written quizzes/examinations for the course (2 Quizzes, 1 Mid-term Exam, and 1 Final Exam). The written examinations will consist of multiple choice questions (MCQ’s) administered through SAKAI (quizzes) and ExamSoft (exams). The examinations will cover the material described in the lectures and other sessions (Lessons, Forums, Assignment, Zoom) and will not be cumulative.

14.2. All examinations will be sequestered. Students will NOT be provided students with an electronic review of the questions they missed. Students can, however, meet with the Faculty concerned in his/her office to go over the topics that they had problems with, not the actual questions. A raw score of the quiz/examination will be given upon exit from SoftTest.

14.3. Assessment schedule:

Details of assignments, quizzes and examinations with respect to topic, points, and dates are outlined in the course schedule.

14.4. Assignments are mandatory and will represent 10 points of the final grade. However if the student fails to submit any assignment, 20 points (for each assignment not submitted) will be deducted from the student's final score. These assignments are replacing in person Laboratory activities exercises and are fundamental to achieve the CLOs for this course. Assignments' answers will be discussed during the scheduled Zoom sessions. Allocated lecture hours have been added in the syllabus so students can work on the assignments.

14.4.1. All other examination policies are followed according to the SGU Examination Policy and the Student Manual.

14.5. Grading rubrics:

Exams are not cumulative and will be in a MCQ format. Exams/Quizzes will cover the following systems:

Exam	Points	Systems
Quiz 1	40	Lymphoid and Endocrine systems
Mid-Term	40	Musculoskeletal and Special Senses
Quiz 2	40	Reproductive and Nervous Systems
Final exam	40	Cardiovascular and Respiratory Systems
Assignments	10	See section 14.4 and section 12
Total points	170	

14.6. Examination schedule:

Exam	Date	Software	Points	Systems
Quiz 1	09-Sep-20	Examsoft or Sakai	40	Lymphoid and Endocrine systems
Mid-Term	05-Oct-20	Examsoft or Sakai	40	Musculoskeletal and Special Senses
Quiz 2	09-Nov-20	Examsoft or Sakai	40	Reproductive and Nervous Systems
Final exam	30-Nov-20	Examsoft or Sakai	40	Cardiovascular and Respiratory Systems

15. Recommended study strategies

15.1. The course notes will be posted on SAKAI, and also available on Sonic Foundry. The exam material will come from lectures, labs, and classroom discussions.

- 15.2. Students are expected to read lecture notes and power points and come prepared to answer questions. Clicker questions will be included in some of the lectures so students should make sure their devices are working correctly in order to participate.
- 15.3. The goal of the exam is for you to demonstrate that you have successfully learned the material required for the course. So as you are studying each disease/condition, ask yourself the following questions:
 - 15.4. What is the etiology?
 - 15.5. What is the pathogenesis?
 - 15.6. Is there a specific pathophysiology associated with the disease/condition?
 - 15.7. What species are affected?
 - 15.8. What age range of animal is affected?
 - 15.9. What are the gross lesions? (Not to worry too much about microscopic lesions unless there is a pathognomonic one).
 - 15.10. How can you distinguish this disease/condition from other related ones?
 - 15.11. What are the sequela?
 - 15.12. For any given question in the examination, consider the most important process causing the lesion/disease/condition in the question being asked, i.e., is it a congenital/developmental anomaly, is it degeneration or necrosis, is it a pathological pigmentation, is it a disturbance of circulation, is it a disturbance of growth, is it neoplasia, is it inflammation (acute, chronic), or is it an immune-mediated process. This would help in narrowing down the choices (hopefully leading to the correct choice).

16. Instructor's expectations of the student

- 16.1. The student is expected to attend all asynchronous lectures, and actively engage in Sakai forums and Zooms sessions.
- 16.2. All assignments, tests/quizzes must be submitted in a timely manner.

17. Professionalism statement

- 17.1. Please exhibit professional behavior in class (online or otherwise)..
- 17.2. Students are expected to log in on time for scheduled meetings, and exams.
- 17.3. Submission of tests/quizzes and assignments must be done in a timely manner.
- 17.4. The use of mobile phones is not allowed during exams.
- 17.5. Students who breach any of the above rules can be subjected to disciplinary action.

18. Attendance/Participation Policy (refer student to the student manual page if applicable)

- 18.1. Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

- 18.2.** If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.
- 18.3.** Absence Reporting Procedures
- 18.4.** Medical Excuse
- 18.5.** Medical excuses will be based on self-reporting by students. Students who feel they are too sick to take an examination or attend a required educational activity must fill out the Medical Excuse Form on the member's center of the SGU website. This form will be sent automatically to the Course Director(s), University Health Services, DOS Office, and the Dean of the SVM. The Medical Excuse Form states that the student does not feel well enough that day to take an examination or participate in another required educational activity. Students are only allowed two (2) such excuses in an academic year. The third excuse results the case being reviewed by the SVM Dean's Council, which may result in a mandatory medical leave of absence (LOA). The policies regarding completion examinations are outlined on page 113 of the Student Manual (see Completion Examination).
- 18.6.** Students may request a medical excuse request for three (3) consecutive days. If illness persists for more than three days, students are not advised to fill out a second Medical Excuse Form. Students are directed to visit the University Health Services.
- 18.7.** See the Student Manual for further details.
- 18.8.** Non-Medical Excuse
- 18.9.** If, due to a catastrophic event or emergency, students are unable to attend any mandatory activity, they must immediately notify the DOS Office. The DOS Office will make a determination based upon the information provided and verification, and will notify the course instructor as to the validity of the absence, requesting that the instructor provide remediation of the missed activity. The instructor will specify the means through which students can resolve excused absences and inform the DOS Office.
- 18.10.** Only one (1) non-medical excuse per year is allowed (with the exception of an SVM-related activity, e.g., SCAVMA, other recognized national/international representation).
- 18.11.** See the Student Manual for further details.
- 18.12.** Religious Observance
- 18.13.** Students who miss an examination due to religious observance will be allowed to sit a re-scheduled examination within the term if the course instructor is notified through the Office of the DOS prior to the original examination.

19. Policy regarding missing examinations and/or failure of submission of assignments

- 19.1.** Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for

the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

- 19.2.** Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

20. ExamSoft policy

- 20.1.** All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct
- 20.2.** Prior to Exam Day
- 20.3.** Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
- 20.4.** Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
- 20.5.** Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
- 20.6.** Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
- 20.7.** Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
- 20.8.** Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
- 20.9.** Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
- 20.10.** A Examsoft/ExamID quick guide for students (Please note that the current Examplify version is 2.3.8)
- 20.11.** The examsoft student perspective video 30 mins
- 20.12.** The Examsoft/ExamID FAQ
- 20.13.** Examsoft information page
- 20.14.** The general Reminders/Guidelines

21. Copyright policy (if applicable)

21.1. The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

22. Appendices

22.1. Not applicable

23. Course and Instructor critiques

23.1. Students are expected to attend all classes and other related academic activities as defined for each course by the Course Director. One such academic activity is participation in the St. George's University (SGU) Course and Instructor Critique program.

23.2. Student participation in the evaluation process is mandatory: When requested, students in a course are expected to complete all required faculty and course evaluations. Failure to complete all required course and instructor critiques will mean that students did not fulfill all course requirements. The critiques coordinator notifies students when evaluation periods have begun and sends periodic reminders to ensure that critiques are submitted within the allotted time frame.

23.3. The Importance of Evaluation: Evaluation is a necessary component of any course. Just as students anticipate a fair and accurate evaluation of their performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves as students' needs and expectations are considered.

23.4. Feedback: At the beginning of each term, Course Directors will address the class and summarize the results of the Course and Instructor Critiques from the previous semester. In this summary, Course Directors will report areas that students rated highly and the areas that received the lowest ratings. For areas receiving low ratings, the Course Director details what changes were made to address students' concerns, thus ensuring that course evaluation influences course design and delivery.

23.5. Your Participation in the Evaluation Process is MANDATORY: When you are expected to complete a course and/or instructor critique, the Office of Educational Assessment (OEA) will notify you via your SGU e-mail account and post a notice outside the lecture hall. This notification will include instructions on how to access and complete the necessary critique(s). Once you access a required course or instructor critique, you can either complete it or indicate that you do not want to complete the critique by checking the appropriate box on the form. Students who have not submitted evaluations within the allocated period will be placed on a "registration hold" by the

Registrar's Office. A registration hold bars students from registering for future classes until all outstanding evaluations are completed. At registration time, students on "registration hold" will be directed to the OEA for instructions on how to complete remaining evaluations. Once these are submitted, the registration hold will be lifted.

- 23.6.** Please be assured that the information you provide will remain strictly confidential because your identification and your responses will always be separated. If you have any questions about the Course and Instructor Critique System, please contact Ms. Raynelle Benjamin at the OEA – EXT. 3879 or rbenjam2@sgu.edu



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PUBLIC HEALTH SYLLABUS (2 Credit)
PTHB 510 (Term 4)
Fall 2020

I. Course Faculty and Staff Information

Course Director: Dr. Rohini R. Roopnarine, DVM, M.Phil, EdD (*Higher Ed.*), MRCVS
Professor,
Email Address: rroopnarine@sgu.edu
Office Location: Online
Office Hours: On Zoom (optional): Thursdays 10:30-1130

Joint Faculty: Dr. Josephine Azikuru Afema, BVM, MPVM, PhD
Associate Professor,
Office Location: Online
Email address: jazikuru@sgu.edu
Office hours: On Zoom (optional): Thursdays 10:30-1130

II. Course location

Online location- Sakai tools being used: Announcement, Resources, Syllabus, Lessons, Forums, Tests and Quizzes, Panopto, Zoom and Socrative, Assignments, email.

III. Prerequisite and/or co-requisite courses

A solid background knowledge of virology, bacteriology, immunology and parasitology.

IV. Required resources

Functional computer headphones, microphone and camera. Students must activate the Panopto tool within Sakai to access the recordings, and also ensure they activate the zoom tool within Sakai.

- Veterinary Public Health class notes and Powerpoints
- Assigned readings for class forum
- Compendium of Animal Rabies Prevention and Control, 2016. National Association of State Public Health Veterinarians (NASPHV)

V. Recommended resources

- Web resources: www.fsis.usda.gov; <http://www.cdc.gov>, <http://www.oie.int>, <http://www.usda.gov>, <https://www.avma.org>, <https://www.fda.gov/home>

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. In this course, all assessments are allocated a period of one week for students to complete. Hence, as has been confirmed by Ms. Andrea Blair, double time will not be allocated for completion of the assessments.**
- c. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Good internet capabilities and speed, headphones, Zoom.

VIII. Course rationale

This course is designed to provide students with the required background knowledge to the One Health approach that will equip them in their role as veterinarians in protecting the public health. Food-borne illness derived from meats of animal origin impacting the global environment, uniquely positions veterinarians as guardians of animal and human health. The course also equips students to be familiar with emerging zoonoses across diverse sociocultural contexts as it pertains to disease prevention and control.

Veterinarians are responsible for educating the public and assisting the relevant public health authorities in implementing prevention and control measures regarding diseases of animal origin that impact human health, as an example, the COVID-19 pandemic. The course covers the veterinarians' role in regulatory medicine regarding inspection of animals for food for human consumption and deals with important zoonoses currently encountered in the global environment, as an example, SARS- CoV-2 (agent of COVID-19). Students are expected to acquire an understanding of the roles of various regulatory agencies such as the USDA, FDA, CDC, OIE and the veterinarians' reporting responsibilities to these agencies.

IX. Course-Level Outcomes

Upon successful completion of this course, the student will be able to...

1. Identify the requirements of US and international agencies such as the OIE, as they relate to the veterinarian's role in reporting notifiable diseases such as COVID-19.
2. Apply the One Health Concept to the professional responsibilities of the veterinarian in promoting human, animal and environmental health.
3. Apply their knowledge as a veterinarian in working with public health officials in the prevention and control of zoonotic diseases such as COVID-19 and foodborne diseases of animal origin.
4. Identify the main U.S. Federal agencies involved in Public health administration.

X. Lesson Level Outcomes

Food Safety

Organization of the U.S. Meat and Poultry Inspection program

At the completion of this lecture the student will be able to:

- Determine the relevant U.S. agencies involved in the U.S. Meat and Poultry Inspection program
- Define the key terms that will be utilized throughout the Veterinary Public health course

Hazard Analysis and Critical Control Points (HACCP)

At the completion of this lecture the student will be able to:

Assess the key principles of HACCP as it pertains to preserving the safety of foods of animal origin with inclusion of the recent impact of COVID-19 on the Meat industry

Ante- Mortem Inspection and Disposition

At the completion of this lecture the student will be able to:

- Apply the four principles used by USDA FSIS Public health veterinarians (PHV's) in making a decision at ante-mortem inspection on animals destined for slaughter for human consumption
- Determine the disposition for various diseases identifiable in animal at ante-mortem inspection

Humane Slaughter

At the completion of this lecture the student will be able to:

- Apply the requirements of the Humane Slaughter Act (1978).
- Identify the strengths and weaknesses of the approved methods of stunning
- Determine if a humane slaughter violation has occurred due to improper stunning

Post-Mortem Inspection and Disposition

At the completion of this lecture the student will be able to:

- Apply the five principles used by USDA's Public Health Veterinarians (PHV's) in making a decision at post-mortem inspection on animals for slaughter for human consumption
- Determine the disposition for various diseases identifiable in animal at post-mortem inspection

Poultry Slaughter

At the completion of this lecture the student will be able to:

Determine the disposition for common diseases detected in poultry at post-mortem inspection

Labeling and Composition of Pet Food

At the completion of this lecture the student will be able to:

- Identify the types of products allowed in pet foods
- Identify the agency involved in regulation of pet food composition

The FDA and Residues

At the completion of this lecture the student will be able to:

- Identify the drugs prohibited for extra label drug use in food animals
- Identify the relevant agency involved in the regulations governing use of residues in food animals

Zoonoses

Defining Zoonoses

At the completion of this lecture the student will be able to:

- Define the term Zoonoses to include important Transboundary Animal Diseases (TADs)
- Determine the role of the Veterinary surgeon in Prevention and Control
- Differentiate the agent, transmission, disease, control and prevention of specific Zoonoses
 - Evaluate the role of the veterinarian in detection and reporting of zoonoses

Bovine Tuberculosis

At the completion of this lecture the student will be able to:

- Apply the principles of the US Federal – State eradication program
- Evaluate the role of the veterinarian in detection and reporting of *M.bovis*

Taeniasis-Cysticercosis

At the completion of this lecture the student will be able to:

- Evaluate the role of the veterinarian in public health education on prevention/control

Rocky Mountain Spotted Fever

At the completion of this lecture the student will be able to

- Evaluate the role of the veterinarian in detection and prevention/control

Visceral larval migrans

At the completion of this lecture the student will be able to

- Evaluate the role of the veterinarian in public health education on prevention/control

Brucellosis

At the completion of this lecture the student will be able to

- Apply the principles of the various US Federal – State eradication programs
- Evaluate the role of the veterinarian in detection and reporting of Brucellosis
- Differentiate zoonotic *Brucella* species with implications for human health and prevention education

***Coxiella Burnetii* (agent of Q fever)**

At the completion of this lecture the student will be able to

- Evaluate the role of the veterinarian in detection and reporting of *C. burnetii*
- Evaluate the role of the veterinarian in public health education on prevention
- Assess the importance of control programs fro animals and humans working in research facilities with small ruminants

Immunocompromised people and pets

At the completion of this lecture the student will be able to

- Determine their role as veterinarians in advising owners on acquiring a suitable pet.

Rabies

At the completion of this lecture the student will be able to:

- Determine when to consider rabies as a differential on your diagnostic list for a case
- Determine the appropriate recommendations for managing an animal exposed to rabies
- Determine the appropriate recommendations for managing an animal that has bitten a human
- Describe the Veterinarian's role in rabies prevention and control in animals and humans

Emerging Zoonoses

Factors of Emergence

At the completion of this lecture the student will be able to:

- Define the factors that contribute to the emergence of zoonoses
- Demonstrate an awareness of their veterinary responsibilities in education of and protection of the public health on zoonoses prevention

Influenza viruses and Human health

At the completion of this lecture the student will be able to:

- Identify the factors that influence the epidemiology of influenza subtypes involved in global outbreaks of public health importance
- Evaluate the role of the Veterinarian in reporting outbreaks of highly pathogenic subtypes in animals
- Assess the Veterinarian's role in public health education regarding emerging zoonoses

Zoonotic Equine arboviruses

At the completion of this lecture the student will be able to:

- Execute your responsibilities as a Veterinarian in reporting outbreaks of these viruses
- Execute your role as a Veterinarian in public health education regarding prevention/control

Zoonotic Coronaviruses

SARS-CoV-2 (agent of COVID-19), SARS, MERS

At the completion of this lecture the student will be able to:

- Apply knowledge about the transmission and prevention of zoonotic coronaviruses of global health importance to veterinary practice.

- Execute your role as a Veterinarian in public health education regarding Prevention/control of zoonoses.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

SGU Program Level Outcome (PLO)	Course Learning Outcomes #
A. Core Medical Knowledge	
1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.	3
3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases.	1,2,3
4. Explain the relationship between disease processes and clinical signs.	3
5. Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.	3
7. Evaluate and analyze normal versus abnormal animal behavior.	3
8. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.	1,2,3
9. Apply the principles of veterinary public health for the promotion of human and animal health.	1,2,3,4
B. Core Professional Attributes	
12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	1,2,3
13. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.	1,2,3
14. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	1,2,3
15. Model lifelong continuing education and professional development.	1,2
17. Demonstrate and model self awareness including understanding personal limitations and willingness to seek advice.	2,3
19. Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.	2,3
C. Core Clinical Competencies (Skills)	
20. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.	3
26. Design and execute plans for health promotion, disease prevention, and food safety.	1,2,3,4
27. Demonstrate and model effective client communication and ethical conduct.	1,2,3

XII. Course Schedule

This course is a 2 credit course that lasts 10 weeks: Sept 15-Nov 24

Week	Lecture hour equivalents	Lecture hrs/week	Assessments	Lecturer	Topic
5: Sep 14-18		2		Roopnarine (RR)	Introduction to VPH and 'One Health"
				RR	The US Meat and Poultry Inspection program
6: Sep 21-25		3		Dr. Bidaisee	HACCP & COVID-19
				RR	Ante Mortem Inspection
				RR	Humane Slaughter
7: Sep 28-Oct 2		5		RR	Post Mortem Inspection
				RR	Pet Food Composition
				RR	Poultry Slaughter
				RR	The FDA and Residues in Food animals
8: Mon Oct 5-9			Quiz I: Tue Oct 6-Tue Oct `13	RR	Midterm Assessment
9: Oct 12-16		2		Afema (JA)	Zoonoses Classification. Bovine, cervid and elephant tuberculosis
				JA	Neurocysticercosis
10: Oct 19-23		4		JA	Rocky Mountain Spotted fever, Visceral migrans
				JA	Bovine, elk, swine brucellosis
				JA	Immunocompromised people and pets
				JA	<i>Coxiella burnetii</i>
11: Oct 26-30		5			
	3 (6 lab hrs)		Graded Forum: One Health Topic	RR/JA	
	2				Rabies

12: Nov 2-6	4	4		RR	Rabies-clickers, cases
13: Nov 9-13		2		JA	Factors of Emergence
				RR	Zoonotic Coronaviruses Including SARS CoV-2 (agent of) COVID-19
14: Nov 16-20		2		JA	Influenza viral subtypes of public health importance
					Zoonotic equine arboviruses of emerging importance
15: Nov 23-27		1			Time for you to revise
16: Nov 30-Dec 4			Assessment 3 begins: Dec 1		
17: Dec 7-11:			Assessment 3 ends Tue Dec 8	JA/RR	

XIII. Grading and assessment policy, and grading rubrics

Assessment 1: Quiz 1: Points are listed for each item within the Sakai tool “Tests and Quizzes”

Assessment 2: Graded Forum

Assigned Mandatory reading: *Jacobsen, Kathryn H. "Will COVID-19 generate global preparedness?" The Lancet 395.10229 (2020): 1013-1014.*

Supplementary (optional) reading referred to in the Assigned reading:

1. *Kandel N, Chungong S, Omaar A, Xing J. Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries. Lancet 2020; [https://doi.org/10.1016/S0140-6736\(20\)30553-5](https://doi.org/10.1016/S0140-6736(20)30553-5).*
2. *Center for Health Security. Global Health Security Index: building collective action and accountability. Baltimore: Johns Hopkins Bloomberg School of Public Health, 2019.*

Forum question: In your opinion, what roles should veterinarians have in the future as it pertains to the prevention and mitigation of emerging zoonotic agents such as SARS-CoV-2, the agent of COVID 19.

Posts are to be kept to a maximum of 200 words.

Forum rubric:

Criteria	Inadequate	Fair	Meets Expectations	Exceeds expectations
Application of Assigned Reading Content	No response submitted (0)	Submission of a response but the response does not show evidence of assimilation or reference to the assignment readings (2)	Cites content from the required assignment readings and shows evidence of critical reflection about the forum topic (4)	Cites articles other than the required assignment readings, and shows evidence of critical thought in their responses.(6)
Use of class content	Does not apply any of the material (lectures, powerpoints, readings) used in class(0)	Shows evidence of some application of class materials (2)	Shows evidence of original application and assimilation of class materials. (3)	Shows a comprehensive and original application of class materials applied to answering the forum question(5)
Writing style	Writing is unclear and shows a poor understanding of the material and assigned reading content. (0)	Writing has some lack of clarity in description.(1)	Good and clear writing style. (3)	Writing is clear, easy to follow and demonstrates the ability to use appropriate examples to support arguments. (4)

Assessment 3: Points are listed for each item within the Sakai tool “Tests and Quizzes” There will be 5 questions from Dr. Roopnarine’s sections on Rabies and Zoonotic coronaviruses and 20 questions from Dr. Afema’s lectures.

The grading scale below will be used to calculate the final course grade

Grade Scale

Percentage	Letter Grade
>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Types of Assessments:

Students must complete all 3 assessments for this course, in order to obtain a final grade. Students are expected to be able to recall and apply the concepts of virology, immunology, parasitology and bacteriology relevant to veterinary public health that were taught during the previous terms. Students are responsible for reviewing those notes if needed. Students are expected to make use of the recommended books and weblinks uploaded on the SAKAI network if needed. The first assessment, Quiz 1, is to be completed and graded within the Sakai “Tests and Quizzes” tool. The rubric for the graded forum is provided above. The graded forum, is scored based on the student’s efforts to assimilate the knowledge provided from the assigned readings in answering the forum question. Assessment 3 is located within “Tests and Quizzes” with points available on Sakai.

Assessments	Date	Points
Quiz 1	Tue Oct 6-Tue Oct 13	10
Graded forum	Tue Oct 27-Tue Nov 24	15
Assessment 3	Tue Dec 1-Tue Dec 8	25
Total		50

XIV. Recommended study strategies

Active participation in the forums and zoom sessions are recommended to enable applicability of core concepts to veterinary practice. Importantly, students should apply good time management skills, particularly crucial in the online environment, to ensure they meet the course requirements.

XV. Instructor’s expectations of the student

Students are expected to adhere to the Professionalism Policy of the University (Student manual), and at all times demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public. Students are also expected to read the required materials for participation in class forums and to complete the mandatory assessments in a timely fashion.

General Expectations

- Remain professional, respectful and courteous at all times
- Keep posts on-topic and professional. Please refrain from discussions of religion, politics, etc.
- Remember that a real person wrote each post and will read what you write as well. It is easy to misinterpret online conversation. Give the benefit of the doubt. If you become upset, wait a day or two and cool down before posting.
- Proofread prior to submitting a post. Discussion forums require slightly more formal

- language than email or social, while still being more casual than writing a paper.
- Remember that discussion forums and social posts are visible by the entire class. Use e-mail for any private comments to the instructor. Inappropriate posts will be removed.

Contacting the Faculty

- Please feel free to email the faculty at any time.
- The faculty will generally respond to email within 24 hours. If you do not hear from us within 24-48 hrs hours, feel free to follow up.
- The faculty is willing to schedule an online meeting via ZOOM as required.

XVI. Professionalism statement

The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards is detailed in the SGU student manual 2019-2020, <https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/>. Students are expected to be polite in responding to peers and faculty via email or through the other online communication tools. It is essential that if a student is unable to complete a mandatory assessment due to illness or other emergency, that they inform the course director in a timely fashion. Please refer to XVII below.

XVII. Attendance policy

The policy relating to class attendance is detailed in the SGU 2019/2020 student manual, <https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/>. Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed

Communication Methods and Expectations

It is mandatory that students check the following communications from the Course Instructor:

Announcements

The lesson plan for the week will be announced to the class. (Instructor – class). There will be reminders about deadlines and mandatory requirements to engage with the course.

Email

1. Normal email communications. Replies to student inquiries. (Instructor-to-individual)
2. Email to the class representative to determine the need for a zoom session depending on questions students may have on the weekly lessons. (Instructor -class representative)*

ZOOM sessions - ZOOM will be used for:

1. Office Hours – To be determined based on email feedback from the class representative*

The ZOOM sessions are recorded and posted for students to watch later

Discussion Forum -Participation in the Graded forum assignment is mandatory in order to receive grade points for this assessment.

Attendance at office hours that will be provided via zoom are NOT mandatory. However, for students participating, they will be required to submit any questions they may have PRIOR to the zoom session.

Lecture sessions will be recorded asynchronously using Panopto and synchronously using zoom. Zoom content will be provided as a recording for those unable to attend at the assigned time.

Students are expected to review all lecture content provided as lecture recordings, powerpoints, assigned readings and lecture notes.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to appear for an examination without a valid reason (see student manual: Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. Copyright policy

The materials (such as slides, handouts and audio/video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Reproduction in whole or in part is prohibited".

Appendix:

N/A



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY EPIDEMIOLOGY SYLLABUS (1 Credit)
PTHB 511 (Term 4)
Fall 2020

I. Course Faculty and Staff Information

Course Director: Dr. Rohini Roopnarine, DVM, M. Phil, EdD (*Higher Ed.*), MRCVS
Professor,

Email Address: rroopnarine@sgu.edu

Office Location: Online

Office Hours: On Zoom (optional): Thursdays 10:30-1130

II. Course location

Online location- Sakai tools being used: Announcements, Resources, Syllabus, Lessons, Forums, Tests and Quizzes, Panopto, Zoom, email.

III. Prerequisite and/or co-requisite courses

A solid background knowledge of virology, bacteriology, immunology and parasitology.

IV. Required resources

Veterinary Epidemiology class notes and Powerpoints, functional computer headphones, microphone and camera. Students must activate the Panopto tool within Sakai to access the recordings, and also ensure they activate the zoom tool within Sakai.

V. Recommended resources

Veterinary Epidemiology class notes and Powerpoints, functional computer headphones, microphone and camera.

- Web resources: <http://www.cdc.gov>, <http://www.oie.int>, <http://www.usda.gov>, <https://www.avma.org>, <http://www.who.int/en>
- Recommended texts: Epidemiology, 5th Edition. Leon Gordis.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. In this course, all assessments are allocated a period of one week for students to complete. Hence, as has been confirmed by Ms. Andrea Blair, double time will not be allocated for completion of the assessments.**
- c. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Good internet capabilities and speed, headphones, Zoom.

VIII. Course rationale

This course is designed to provide students with the epidemiological principles that can be applied to clinical veterinary medicine, and is a core course introducing important concepts for the Veterinary Public Health course that it precedes. Students will gain knowledge on the use of epidemiological principles in evaluating clinical studies and the importance of evidence-based medicine in evaluating the efficacy of therapeutic and preventive measures. The course is also concerned in arming students with the tools that apply to outbreak investigation and in understanding the important role of the veterinary surgeon in responding to emerging disease threats such as COVID-19. Epidemiology is a cornerstone of public health and the practise of preventive medicine in populations, and hence requires the student to have a solid foundation in the basic science courses.

IX. Course-Level Outcomes

Upon successful completion of this course, the student will be able to...

1. Apply the principles of evidence-based veterinary medicine to the evaluation of clinical trials and control programs.
2. Apply the principles involved in evaluating screening tests for early disease detection and prevention.
3. Determine the role of the veterinarian in responding to outbreaks, and pandemics such as COVID-19.
4. Identify the main Federal, and International agencies involved in outbreak response.

X Lesson Level Outcomes

Introduction to epidemiological concepts

At the completion of this lecture the student will be able to:

- Define the objectives of epidemiology
- Apply the core concepts introduced such as epidemic, endemic and pandemic
- Apply the concept and importance of evidence-based medicine to clinical practice

Disease Reporting

At the completion of this lecture the student will be able to:

- Understand the application of the terms disease prevalence, incidence and the Reproductive number(R_0) and disease modelling using the example of COVID-19
- Determine the interactions between the agent-host-environment in the occurrence of disease.
- Differentiate between the types of epidemic curves that are used to characterize outbreaks.
- Understand the importance of Flattening the curve.

Descriptive and Analytical Epidemiological Study designs

At the completion of this lecture the student will be able to:

- Differentiate between different types of study designs
- Determine which study designs are most appropriate to address specific research questions using examples from published work -as an example, the application of clinical trials to assess the use of Remdesivir as a therapeutic option for COVID-19

Types of Qualitative studies and other types of Research Designs

At the completion of this lecture the student will be able to:

- Understand the value of Qualitative and Action Research approaches in Research design
- Understand there are multiple research approaches that expand beyond quantitative methodologies
- Determine the research approach that may be more suited for addressing a particular research question

Screening Tests

At the completion of this lecture the student will be able to:

- Define and differentiate the concepts of sensitivity and specificity
- Evaluate a test in terms of its sensitivity, specificity and predictive values
- Measure the sensitivity, specificity and predictive value of a test

Infectious Disease Epidemiology

At the completion of this lecture the student will be able to:

- Differentiate between different host types and their role in disease transmission
- Evaluate and calculate common measures of health including the case-fatality rate using the example of COVID-19

Herd Immunity

At the completion of this lecture the student will be able to:

- Apply the concept of herd immunity to disease prevention and control
- Discuss the importance of the Reproduction number (R_0) to disease spread
- Discuss the relevance of the R_0 to flattening the curve in the context of COVID-19

Outbreak Investigation

At the completion of this lecture the student will be able to:

Evaluate the different tasks involved in responding to an outbreak using the example of a Transboundary Animal Disease (TAD).

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

SGU Program Level Outcome (PLO)	Course Learning Outcomes # (CLO)
A. Core Medical Knowledge	
3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases.	2,3
4. Explain the relationship between disease processes and clinical signs.	2
6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.	1
8. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.	3,4
9. Apply the principles of veterinary public health for the promotion of human and animal health.	2,3
11. Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.	1
B. Core Professional Attributes	
12. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	1,3,4
13. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.	1,4
14. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	1,3,4
15. Model lifelong continuing education and professional development.	1
19. Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.	3,4
C. Core Clinical Competencies (Skills)	
20. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis	2
26. Design and execute plans for health promotion, disease prevention, and food safety.	1,2,3,4
27. Demonstrate and model effective client communication and ethical conduct.	1,2,3,4
28. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.	1

XII. Course Schedule

This course is a 1 credit course that lasts 4 weeks: August 17-September 14

Week		Lecture hrs/wk	Assessments	Topic
Prior to Week 1 Open Aug 10				Introductory Forum: Icebreaker
Week 1 Aug 17- Aug 21	1	3		Epidemiological concepts & Employment opportunities
	1			Disease Reporting
	1			Descriptive Studies
Week 2 Aug 24-Aug 28	1	3		Analytical Studies I-Case -control & Cohort studies
	1			Analytical Studies II -Clinical trials Qualitative Studies & Action research
	1		Assessment 1: Quiz 1 Tues Aug 25-Tues Sept 1	
Week 3 Aug 31-Sept 4	1	3	Quiz 1 Ends Tues Sept 1	
	1			Screening Tests
	1			Epidemiology of Infectious Diseases
Week 4 Sept 7-Sept 11	1	3		Herd Immunity
	1			Outbreak Investigation
	1		Assessment 2: Forum Tue Sept 8-Sept 15	
Week Sept 14-18		3	Assessment 2: Forum Ends Tue Sept 15	

XIII. Grading and assessment policy, and grading rubrics

Assessment 1: Quiz 1: Points are listed for each item within the Sakai tool “Tests and Quizzes”

Assessment 2: Graded Forum.

The forum consists of 1 assigned reading that must be used in responding to the forum question.

Sibley, Dick, and Joe Brownlie. "Vets would not manage Covid-19 this way." The Veterinary Record 186.14 (2020): 462. Please read this attached peer reviewed article in the Veterinary Record: Vets would not manage Covid-19 this way.

Forum Question:

Do you agree with the views of the authors or not? What epidemiological measures do you think are critical to address emerging zoonotic threats such as COVID-19, as it pertains to mitigating the impact of these disease threats on both animal health and human health.

In considering your opinion as a future veterinarian, please draw on this article along with what you have learned from this course specifically with reference to the lectures on *Epidemiology of Infectious Diseases, Herd Immunity and Outbreak investigation*, to support your argument.

Please keep your posts to a maximum of 100 words.

Please refer to the rubric below.

Forum Rubric:

Criteria	Inadequate	Fair	Meets Expectations	Exceeds expectations
Application of Assigned Reading Content	No response submitted (0)	Submission of a response but the response does not show evidence of assimilation or reference to the assignment readings (2)	Cites content from the required assignment readings and shows evidence of critical reflection about the forum topic (4)	Cites articles other than the required assignment readings, and shows evidence of critical thought in their responses.(6)
Use of class content	Does not apply any of the material (lectures, powerpoints, readings) used in class(0)	Shows evidence of some application of class materials (2)	Shows evidence of original application and assimilation of class materials. (3)	Shows a comprehensive and original application of class materials applied to answering the forum question(5)
Writing style	Writing is unclear and shows a poor understanding of the material and assigned reading content. (0)	Writing has some lack of clarity in description.(1)	Good and clear writing style. (3)	Writing is clear, easy to follow and demonstrates the ability to use appropriate examples to support arguments. (4)

The grading scale below will be used to calculate the final course grade

Grade Scale

Percentage	Letter Grade
>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Types of Assessments:

There are 2 online assessments for this course. **Students must complete all assessments for this course, in order to obtain a final grade.** Students are expected to be able to recall and apply the concepts of virology, immunology, parasitology and bacteriology relevant to veterinary public health that were taught during the previous terms. Students are responsible for reviewing those notes if needed. Students are expected to make use of the recommended weblinks uploaded on the SAKAI network if needed. The first assessment, Quiz 1, is to be completed and graded within the Sakai “Tests and Quizzes” tool. The final assessment, the graded forum, is scored based on the student’s efforts to assimilate the knowledge provided from the assigned readings in answering the forum question. The rubric for scoring is provided within Section XIII of this syllabus.

Assessments	Date	Points
Quiz 1	Tue Aug 25- Tue Sept 1	15
Graded forum	Tue Sept 8-Tue Sept 15	15
Total		30

XIV. Recommended study strategies

Active participation in the forums sessions are required to enable applicability of core concepts to veterinary practice. Importantly, students should apply good time management skills, particularly crucial in the online environment, to ensure they meet the course requirements.

XV. Instructor’s expectations of the student

Students are expected to adhere to the Professionalism Policy (see XVII), and at all times demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public. Students are also expected to read the required materials for participation in class forums and to complete the mandatory assessments in a timely fashion.

General Expectations

- Remain professional, respectful and courteous at all times
- Keep posts on-topic and professional. Please refrain from discussions of religion, politics, etc.
- Remember that a real person wrote each post and will read what you write as well. It is easy to misinterpret online conversation. Give the benefit of the doubt. If you become upset, wait a day or two and cool down before posting.
- Proofread prior to submitting a post. Discussion forums require slightly more formal language than email or social, while still being more casual than writing a paper.
- Remember that discussion forums and social posts are visible by the entire class. Use e-mail for any private comments to the instructor. Inappropriate posts will be removed.

Contacting the Faculty

- Please feel free to email the faculty at any time.
- The faculty will generally respond to email within 24 hours. If you do not hear from us within 24-48 hrs hours, feel free to follow up.
- The faculty is willing to schedule an online meeting via ZOOM as required. Thursdays at 1030-1130 are scheduled for this purpose.

XVI. Professionalism statement

The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards for 2019/2020 <https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/>.. Students are expected to be polite in responding to peers and faculty via email or through the other online communication tools. It is essential that if a student is unable to complete a mandatory assessment due to illness or other emergency, that they inform the course director in a timely fashion. Please refer to XVII below.

XVII. Attendance/Participation policy

The policy relating to class attendance is detailed in the SGU student manual <https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/>. Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed

Communication Methods and Expectations

It is mandatory that students check the following communications from the Course Instructor:

Announcements

The lesson plan for the week will be announced to the class. (Instructor – class). There will be reminders about deadlines and mandatory requirements to engage with the course.

Email

1. Normal email communications. Replies to student inquiries. (Instructor-to-individual)
2. Email to the class representative to determine the need for a zoom session depending on questions students may have on the weekly lessons. (Instructor -class representative)*

ZOOM sessions - ZOOM will be used for:

1. Office Hours – To be determined based on email feedback from the class representative*
The ZOOM sessions are recorded and posted for students to watch later.

Discussion Forum -Participation in the Graded forum assignment is mandatory in order to receive grade points for this assessment.

Attendance at office hours that will be provided via zoom are NOT mandatory. However, for students participating, they will be required to submit any questions they may have at least 48 hrs PRIOR to the zoom session.

Lecture sessions will be recorded asynchronously using Panopto. Students are expected to review all lecture content provided as lecture recordings, powerpoints, assigned readings and lecture notes.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to appear for an examination without a valid reason (see student manual: Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. Copyright policy

The materials (such as slides, handouts and audio/video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to use these materials solely for the purpose of group or individual study. Reproduction in whole or in part is prohibited".

Appendix:

N/A



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
Veterinary Immunology
PTHB 512 – 2 credits

Fall 2020

I. Course Faculty and Staff Information

Course Director:

Euan Allan, MSc, PhD. eallan1@sgu.edu.

Instructors:

Diana Stone, MPH, DVM, PhD, Diplomate ACVPM. dstone@sgu.edu;

Mercedes Maria Abeya, DVM, PhD. mabeya@sgu.edu

Weekly office hours will be conducted by the faculty covering lectures for that week. 1 synchronous hour per week via ZOOM.

II. Course location: Online Saki Only.

III. Prerequisite and/or co-requisite courses: Current 2nd term SVM student

IV. Required resources: PPT Lectures on Saki

V. Recommended resources: Course notes on Saki

The following are recommended reference books: Veterinary Immunology, An Introduction, Ian R. Tizard, 10th ed.; Basic Veterinary Immunology. 1st. Ed. Gerald N. Callahan & Robin M. Yates; Veterinary Immunology, Principles and Practice, MJ Day, 2nd Ed. The following is a good resource for basic immunology: Basic Immunology, Abbas and Lichtman, 3rd Ed. 2010. The following is a good resource for those going into small animal practice:

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

VIII. Course rationale: This course is designed to be an introduction to a complex and continually evolving discipline that defines the immune system. The primary objective of the course is to provide students the basic elements needed to understand the immune system and its role in combating disease processes. This area of study is dynamic and should be interwoven in other subjects as you progress through your veterinary education. In other words, this will not be the last time you hear of it! Specific diseases associated with hypersensitivities, autoimmunity, and immune deficiency will be discussed in more detail in your other courses including General Pathology, Systemic Pathology, Clinical Pathology, and Medicine courses.

IX. Course Goals:

- To prepare students for Terms 3, 4, 5, 6 and their clinical 4th year of training. Immunology forms the bases of many diagnostic tests, therapies and disease prevention strategies (such as vaccines). The basics of immunology are also needed to diagnose and treat diseases of the immune system. Normal immune responses can also contribute to disease.
- To ensure students understand the basics of innate and acquired immunity including the role of cytokines, cell surface receptors, Complement proteins, phagocytic cells, antigen processing and presentation and the role of MHC molecules, humoral immune responses and cell-mediated immune responses, mucosal immunity, neonatal immunity, the hypersensitivities, generation of T-cell and B-cell receptor diversity, and the interaction of innate and acquired immunity.
- To help students develop problem solving skills. Students will be expected to apply immunology concepts to novel situations on exams.
- To ensure students understand the immunologic bases of immunology-based diagnostic assays and to correctly interpret results. To understand specificity and sensitivity of a test and the need for positive and negative controls for diagnostic tests.

Course Learning Outcomes:

- A. **Define and differentiate** the properties of antigens, antibodies, MHC molecules, antigen processing, immune cells, innate/adaptive/passive immunity, and humoral and cell mediated immune responses.
- B. **Recognize and compare** the innate and acquired immune mechanisms involved in mucosal immunity and immune responses to intra-cellular and extracellular pathogens.
- C. **Describe, interpret and predict** the results of immunodiagnostic tests, antibody results for passive transfer, failure of passive transfer, primary/secondary immune responses to infection/vaccination.
- D. **Recognize and compare** the immune mechanisms and clinical signs that characterize the four types of hypersensitivity reactions.

Lecture Learning Outcomes: After successful completion of the course you should be able to: (Lecture#/LLO/CLO; eg. First LLO for lecture 1 if it fits in CLO A: 1aA.) .) All lectures encompass PLO1-6.

- 1aA: Define and differentiate innate and adaptive immunity and how these two systems interact.
- 1bB: Recognize the main features and difference between humoral and cell-mediated immune responses
- 1cA: Define passive immunity and why it is important.
- 2aAB: Identify and define the role of innate sentinel cells.
- 2bA: Define the molecules essential for innate immunity.
- 2cAB: Describe the steps of phagocytic killing.
- 3aA: Differentiate between the two main phagocytic cells.
- 3bAB: Define TLRs and describe their role in innate immunity.
- 3cAB: Explain the mechanisms by which NK cells identify and kill a virally infected cell.
- 4aAB: Define the complement system.
- 4bAB: Compare and contrast the classical and alternative complement pathways.
- 4cAB: Describe how the complement system destroys microbes (effector mechanisms).
- 5aA: Define antigen, recognize what molecules can be antigens, and identify what antigens are and their characteristics (immunogenicity vs antigenicity).
- 5bA: Describe what an epitope is and what role it plays in cross-reactivity.
- 5cA: Differentiate between a hapten, and epitope, and an antigen.
- 6aAB: Differentiate between intra/ extracellular microbes.
- 6bAB: Define endogenous and exogenous antigens, and their sources, and appreciate different immune responses to each.
- 6cA: Be able to identify and list important non-microbial antigens.
- 7aA: List the major differences between MHC-I and MHC-II antigen capture, processing and presentation.
- 7bA: Identify and contrast the three professional/semi-pro APCs.
- 7cAB: Gain an initial appreciation of antigen presentation to lymphocytes.
- 8aAB: Compare the two pathways for antigen presentation, and contrast these with cross presentation.
- 9bAB: Link the importance of allelic diversity in MHC to the function of MHC during an adaptive immune response.

- 9cAB: Provide an example of the role of MHC in disease risk.
- 10aAB: Describe T/B cell maturation/selection and explain why they are absolutely essential processes.
- 10bAB: Compare and contrast the BCR and the TCR, and appreciate the process of BCR/TCR diversity.
- 10cAB: Recall lymphocyte surface receptors and explain the importance of co-stimulation.
- 11aAB: Describe the process of T cell activation and define Th cells
- 11bAB: Compare and contrast CD4+ T cell subsets (aka Classes), specifically T.h1 and Th2.
- 11cAB: Relate T cell subsets to effector arms of the immune system: CTLs and Antibody.
- 12aAB: Define CMI and its components.
- 12bAB: Describe CTL activation and effector mechanisms.
- 12cAB: Describe DTH and its role in CMI.
- 13aA: Identify/describe the activation/clonal expansion of B lymphocytes
- 13bA: Recognize/differentiate the Fab and Fc regions of antibody, classes of antibody, polyclonal vs monoclonal antibody
- 13cAC: Recognize the class of antibody that is reflected in a scenario and/or lab results.
- 14aA: Review protein electrophoresis and recognize the relevance of the globulin fractions
- 14bA: Recognize normal/abnormal protein electrophoresis results and interpret the basic significance of low/high globulin fractions
- 14cC: Recognize/interpret the terminology and use of antibodies against antibodies in diagnostic tests
- 15aC: Define the concepts of antibody titers, seroconversion, acute vs convalescent antibody titers, T-dependent/T-independent antibody responses.
- 15bC: Describe the primary and anamnestic antibody responses and differentiate between the two.
- 15cC: Given a scenario, predict the kind of antibody response expected
- 16aC: Given a scenario and serology results, recognize appropriate conclusions regarding vaccination/infection/exposure to pathogen/antibody classes and titers.
- 16bC: Describe and recognize protective immunity and sterile immunity
- 16cA: Review antigen-antibody interactions, polyclonal/monoclonal antibody, antibodies to antibodies, primary/anamnestic antibody responses and recognize their relevance to immunodiagnostic tests
- 17aC: Describe the uses of immune diagnostic tests, samples and reagents used, and controls needed
- 17bC: Review titers, describe titration and interpretation of titer results
- 17cC: Recognize whether an immunodiagnostic test detects antibody or antigen or can be designed either way.
- 18dC: Given a scenario and immunodiagnostic results, identify exposure/infection/vaccination/disease status

- 18aC: Describe the immunologic concepts/procedures for ELISA, Western Blots and Immunohistochemistry tests, samples/reagents/controls/ used and advantages/limitations.
- 18bC: Recognize key examples of these tests, including the different ELISAs (direct, indirect, sandwich, antigen-capture, competitive), direct and indirect Western Blots.
- 19aC: Describe the immunologic concepts/procedures for precipitation/agglutination tests, the importance of the zone of equivalence, the samples/reagents/controls used and advantages/limitations.
- 19bC: Recognize key examples of these tests including Coggins, RID, Hemagglutination, Hemagglutination inhibition, latex bead agglutination.
- 19cC: Appropriately interpret results of these tests
- 20aC: Describe the immunologic concepts/procedures for serum neutralization and complement fixation tests, samples/reagents/controls/ used and advantages/limitations.
- 20bC: Recognize key examples of these tests and in particular the tests used for rabies serology in humans and animals (RFFIT and FAVN).
- 20cC: Appropriately interpret results of these tests.
- 21aC: Describe the concepts of sensitivity and specificity of a diagnostic test
- 21bC: Given appropriate data, identify the TP/TN/FP/FN from the data and calculate the sensitivity and specificity of a diagnostic test,
- 21cC: Given the sensitivity/specificity of specific diagnostic tests, identify which test is most useful to use in a given scenario and determine the expected TP/TN/FP/FN.
- 22aC: Differentiate between colostrum and milk immunoglobulin composition and species differences
- 22bC: Describe the importance and the mechanism for maternal immunoglobulin absorption into the neonatal circulation and how maternal immunoglobulin protects the gut of the neonate.
- 22cC: Describe criteria for determining failure of passive transfer in foals and in calves and approaches to treatment
- 22dC: Describe the rationale behind some serial vaccination schedules used for young domestic animals.
- 23aC: Recognize the different types of vaccines, how they differ and the pros and cons of each.
- 23bC: Identify the type of immune response the different vaccines will generate.
- 23cC: Describe the methods used to attenuate organisms for MLV and to kill "inactivated" vaccines.
- 24aC: Describe the functions of adjuvants and what types of vaccines need them
- 24bC: Recognize the concept of core and noncore vaccines.
- 24cC: Describe the potential adverse reactions to vaccines and when certain kinds of vaccines can and cannot be use.
- 25aD: Describe the events that occur with sensitization (priming) and second exposure to an allergen
- 25bD: Describe the mechanisms of Type I hypersensitivity and timing of clinical signs.

- 25cD: Describe the antibody classes and cellular infiltrates involved in Type I hypersensitivity.
- 26dD: Recognize the clinical signs commonly associated with Type 1 hypersensitivities
- 26aD: Describe the mechanisms of Type II hypersensitivity and timing of clinical signs.
- 26bD: Describe the antibody classes and cellular infiltrates involved in Type II hypersensitivity.
- 26dD: Describe the mechanisms of Type III and IV hypersensitivities and timing of clinical signs.
- 26aD: Describe the antibody classes and cellular infiltrates involved in Type III and IV hypersensitivity.
- 26cD: Describe the diagnostic tests used to diagnose the type of hypersensitivity present

X. Course Schedule : See appendix.

XI. Grading and assessment policy, and grading rubrics:

- **Assessment Exams:** There will be two assessment exams for the course, which will consist of multiple choice questions (MCQ totally **90 points**):
- **Midterm Exam:** 45 questions (45 points)
- **Final Exam:** 45 questions (45 points)
- **Both exams will take place on Saki, will be open book, MCQ, and students will have one week to complete.**
- **Students will have access to the exams for 1 week, and have 6 hours to complete once started.**
- A make-up exam will be given ONLY when the student has an EXCUSED absence. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic PRIOR to the time of the test. Excuses that are issued after the examination will not be accepted. Do not expect to be excused for weddings or birthdays. Funerals of very close family members are adequate justification. Excuses to attend special meetings will be considered through the SVM Associate Dean of Students Office and will include assessment of the student's level of academic performance. SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desk top. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an ESSAY, Short-Answer or Oral Format.

- **Grading Scale**

≥89.50%	A
84.50-89.49	B+
79.50-84.49	B
74.50-79.49	C+
69.50-74.49	C
64.50-69.49	D+
59.50-64.49	D
<59.49	F

- All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

Please note: The course director enters in the raw scores (points). The computer then calculates the percent and assigns the letter grade to that percent. Percents are carried out to TWO decimal points. **There is no provision in this course to obtain additional points.**

XII. Recommended study strategies : Combine provided notes and lectures. All assessment will be derived from information in the Lecture PPTs.

XIII. Instructor’s expectations of the student

Students are expected to read the class notes before the lecture covering the material. Students are expected to attend all lectures and be engaged in forum discussions. Students are expected to contact the course instructor early on if they are having difficulty. Students are expected to take full advantage of DES and other SGU resources for academic help.

XIV. Professionalism statement

- Professional behavior is expected at all times regardless of online format.

XV. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students’ lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVI. Policy regarding missing examinations and/or failure of submission of assignments

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Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVII. Copyright policy (if applicable):

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Appendices: Schedule and weekly topics.

Lecture week	Dates	Lectures	Each week will have one synchronous
1	17-aug-21st	1,2	Allan
2	24-28 aug	3,4	Allan
3	aug 31-sep4	5,6	Allan

4	7 sept- 11 sept	7,8	Allan
5	14 sept -18 sept	9,10	Allan
6	21 sept 25 sept	11,12	Allan/Stone
7	28 sept-2nd oct	13,14	Stone
8	5th oct- 9th oct	MT	
9	12 oct-16 oct	15,16	Stone
10	19 oct-23 oct	17,18	Stone
11	26 oct-30 oct	19,20	Stone
12	2nd nov-6th nov	21,22	Abeya
13	9th nov-13 nov	23,24	Abeya
14	16 nov-20 nov	25,26	Abeya
15	23 nov-27 nov	Review	All
16	30 nov-4 dec	Finals	
17	7 dec-11 dec	Finals	
18	14th dec-18th dec	Finals	

Lecture # See official Term 2 schedule	Topic	Lecturer
1	Introduction to Immunology	<i>Allan</i>
2	Innate Immunity	<i>Allan</i>
3	Innate Immunity	<i>Allan</i>
4	The Complement System	<i>Allan</i>
5	Adaptive Immune Response/Antigen	<i>Allan</i>
6	Adaptive Immune Response/Antigen	<i>Allan</i>
7	Adaptive Immune Response/ APC and Ag processing	<i>Allan</i>
8	MHC	<i>Allan</i>
9	Lymphoid Organs; B and T lymphocytes	<i>Allan</i>
10	T helper 1 and T helper 2 cells	<i>Allan</i>
11	Cell-Mediated Immunity	<i>Allan</i>
12	B lymphocytes and humoral immunity	<i>Stone</i>
13	primary/secondary antibody responses	<i>Stone</i>

14	More on humoral immune responses	Stone
15	Humoral immune response continued	Stone
16	Immunodiagnosics	Stone
	MT (45 questions) - Covers lectures 1-14	
18	Immunodiagnosics	Stone
18	Immunodiagnosics	Stone
19	Immunodiagnosics	Stone
20	Immunodiagnosics	Stone
21	Neonatal Immunity	Abeya
22	vaccines	Abeya
23	vaccines	Abeya
24	Hypersensitivities	Abeya
25	Hypersensitivities	Abeya
26	Hypersensitivities	Abeya

	Review	
	FINAL (45 questions)- Comprehensive.	



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Pathobiology department

Veterinary Virology Syllabus -3 credits

PTHB 515 Term 3

Fall 2020

I. Course Faculty and Staff Information

Course Director: Sonia Cheetham, DVM PhD, Professor Pathobiology.

Email: scheetha@sgu.edu

Tel#1 (473) 444 –ext.3805

Office: SVM trailer

Office hours: Zoom sessions Mondays 1 -2 pm Grenada time

II. Course location

Online location—Sakai resources being used: Panopto, Lessons, Assignments

III. Prerequisite and/or co-requisite courses

Current 3rd term SVM student, good base on biochemistry and immunology

IV. Required resources

Course long notes, online access to Sakai

V. Recommended resources

"Fenner's Veterinary Virology" Machachlan & E. J. Dubovi (Eds.) 4th ed., 2010. Relevant internet sources for updating the current scenario of viruses and viral diseases of veterinary importance. They include sites of avma, aaep, aaha, pigsite, cdc, google scholar, pubmed.

VI. Special accommodation

a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

NA

VIII. Course rationale

The course consists of giving veterinary students the biological background needed for the understanding of viral diseases. Veterinarians are confronted daily with viral infections. Because of this fact, it is essential to deal with these unique classes of infectious agents in detail. Students of veterinary medicine should have a thorough understanding of certain viruses and the major diseases of veterinary importance caused by them. This course is divided into general virology and systematic virology. General virology deals with the basic

nature of viruses, classification, multiplication, host-virus interaction, viral pathogenesis, diagnosis and vaccines. Systematic virology deals mainly with individual viral diseases. The major viral diseases which are of importance for veterinary practice will be discussed affecting each host species of veterinary significance. This course will provide the basic understanding needed to deal with the viral infections usually encountered in the clinical veterinary practice. This course will complement anatomical and clinical pathology and it is a requirement for the medicine courses in future terms.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to...

- 1) Explain the basic properties of viruses and their classification.
- 2) Identify viral diseases affecting various species of animals of veterinary medicine importance and determine their diagnosis.
- 3) Identify the advantages and limitations of vaccines and antiviral chemotherapeutics.
- 4) Evaluate the current and potential tools for prevention, control and treatment of viral diseases of the companion and food producing animals.

X. Lesson-level outcomes and mapping to CLOs

LO for lecture 1: Introduction (all CLO1)

Define virus

- Describe the components of the viral particle (genome, capsid, envelope) nature of the components and where do they derive from
- Define the concept of peplomer
- Define the concept of epitope
- Identify the types of viral genomes: DNA, RNA, segmented or not
- Identify who determines how to classify a virus, what is the suffix for every category
- Explain what is the base of viral classification these days
- Compare and contrast RNA from DNA viral families.
- Identify which viral families are DNA, RNA, segmented, naked or enveloped
- Distinguish viruses which replicate in the nucleus from those that replicate in the cytoplasm

LO for lecture 2: Viral replication (CLO1)

Describe how do we study the replication of viruses

- Describe how do we study viral replication in viruses that do not grow in cell culture
- Explain the concept of susceptible and permissive cells
- Recognize the sequence of events of the one step growth curve, what do you measure?
- Explain what is the eclipse time
- List and describe the basic steps in viral replication

- Explain the concepts of genome replication, transcription and translation applied to viruses (including what is the source and what is the product).
- Determine what is required for attachment
- List and explain different methods of viral penetration
- Explain what does uncoating mean and how do virus translocate (cellular chaperones, signaling)
- Describe the replication of DNA viruses
- Describe the replication of RNA viruses
- Describe the concept of + and – sense RNA in replication
- Appreciate the replication mechanism of Retroviruses
- Explain what are the structures of mRNAs (cap, poly AAAAA) and their functions
- Explain what the packing sequence in the viral genome is used for
- Describe how do most naked viruses exit the cell
- Describe how do enveloped viruses exit the cell

LO for lectures 3,4: Viral identification (all CLO1)

- Name and understand the reasons why we would need to reach a diagnosis at the individual or herd level or at the national level
- Discuss why is it important for the practicing veterinarian to collect and transport samples correctly
- List what are the desired characteristics for diagnostic tests
- Review from immunology: explain what is sensitivity and specificity of a diagnostic test
- Describe and compare laboratory methods used to identify viruses
- Define what is a direct method and which methods are available in virology
- Define what are indirect methods and which methods are available in virology
- Review antigen detection methods (antigen ELISA, IF, IHC etc)
- List advantages and disadvantages of antigen detection methods
- Explain what Electron microscopy (EM) does and know its sensitivity and disadvantages.
- Describe the molecular methods of viral genome detection, PCR and RT-PCR general concept
- List the advantages and disadvantages of molecular methods
- List the uses of culture of viruses
- Describe the methods of culturing viruses (cells, embryonated eggs and lab animals)
- Compare and contrast the types of cell cultures and list the disadvantages of cell culture
- Identify the different cytopathic effects of viruses

- Describe the use of embryonated eggs, routes of inoculation in culturing viruses
- Discuss the use of lactating mice and other lab animals (in virology)
- Explain the use of serology in virology, interpret the IgG and IgM curve, differentiate 1ry and 2ry infection, interpret results and have the concept of paired samples.
- Review how Antibody ELISA, Western blot etc, work (what are they detecting?)
- Explain how virus neutralization test works, why is it so useful? and what is the limitation
- List and explain the disadvantages of serological methods
- List the general concepts on laboratory safety and laboratory hazards
- Describe what is BSL and why do we need to set the categories

LO for lecture 5: Viral Pathogenesis (all CLO1)

- Define viral pathogenesis
- Explain the concept of “Iceberg of viral infections”
- Describe the host-virus-environment interaction
- Explain virulence
- List host factors and environmental factors important to viral infections
- Identify the courses of viral infection and possible outcomes
- Describe the different viral entry ports
- Define cell tropism, primary replication, spread and secondary replication
- Explain the mechanisms of viral spread
- Describe the viral cellular pathogenesis, and its direct and indirect damage
- Define inclusion bodies, determine their origin and location
- Describe the clinical signs associated with viral diseases
- List the different mechanisms of viral shedding and understand their significance

LO for lecture 6: Oncogenesis and immunology (all CLO1)

- Define oncogene, what is the difference between a C oncogene and a V oncogene?
- What is a replication competent and a replication defective retrovirus?
- How do Cis activating and transducing retroviruses differ epidemiologically?
- Review immune system cell types, IgG types, cytokines, complement and MHC
- Explain the role of innate, cellular immunity and humoral immunity against viral infections
- Understand the benefits and complications of the host immune response to viruses

- Describe what an immune pathological response is and list what could be the causes
- Give examples of viral strategies evading the host's immune response
- Differentiate viral latency and persistence and outline the mechanisms employed by viruses
- Discuss what are passive immunity and maternal antibodies
- Define what the translocation cutoff is
- List and understand possible reasons of failure of maternal antibody transfer
- Explain the concept of maternal antibody interference with vaccinations

LO for lecture 7: Viral Evolution (all CLO1)

- Define the concept of genotype and phenotype
- List and describe what types of point mutation substitutions there are
- Explain what indels are and how can they later the reading frame
- Define the concept of genetic drift and the types of mutations that cause it
- Define the concept of genetic shift and the types of events that cause it
- Explain what the difference between recombination and reassortment is
- Describe what defective interfering particles (DIP) are
- Compare and contrast the rate of mutation for RNA viruses and DNA viruses, why the difference?
- Define the concept of quasispecies within the host
- Explain what complementation and phenotypic mixing are. Why could they be useful?
- Discuss why do viruses mutate so fast

LO for lecture 8: Viral vaccines (CLO3)

Review vaccines from immunology class (term 2 notes)

- Name the factors involved when designing a vaccination program and schedule
- Explain the concept of herd immunity
- Explain why are multivalent vaccines useful
- Describe what the differences between live attenuated and inactivated vaccines are
- List and understand the types of attenuated vaccines
- List and understand the types of inactivated vaccines or viral proteins/subunits
- List and understand the types of vaccines produced by recombinant DNA techniques
- Explain what an adjuvant is
- List what types of adjuvants are commonly used in veterinary vaccines
- Determine which types of vaccines require an adjuvant, why?

- Determine which types of vaccines require more booster shots and produces shorter immunity
- Identify which types of antibodies are stimulated with each type of vaccine. What do they depend on?
- List what are the advantages and disadvantages of each type of vaccine
- Explain who chooses the vaccine type and what is taken into account to do so
- Explain who determines the application schedule for a specific vaccine
- Define who determines which route a vaccine will be delivered
- Explain what does under-attenuation mean; genetic instability and heat liability
- Explain what the difference between vaccine efficacy and vaccine safety is
- List and explain what other factors affect the vaccines' efficacy
- List and explain what other factors affect the vaccines' safety?
- Explain why is it hard to develop antiviral drugs and why are many of them prodrugs
- Discuss why are antivirals not commonly used in veterinary medicine
- Explain why is it important to know and preserve (or not) the stability of viral infectivity
- Explain how does temperature affect viral infectivity
- List the different types of viral disinfectants and their use, as well as their major characteristics

LO for lecture 9: Viral epidemiology (CLO4)

- Describe what viral epidemiology studies
- Define the following terms: incidence, prevalence, morbidity, mortality, epidemic, endemic, containment, elimination, eradication
- List horizontal modes of transmission
- List vertical modes of transmission
- Define zoonosis
- Define Arbovirus
- Explain why are some arboviruses NOT zoonotic
- Identify viral patterns of disease, what other factors may affect them?
- Explain what a notifiable disease is
- List what are required for surveillance of viral diseases and explain why do we need a laboratory diagnosis
- Determine what control measures can be established during an outbreak to control transmission
- Identify what characteristics can determine if it is feasible to eradicate a viral disease

LO for lectures 11-12 Viral families of veterinary importance (all CLO1)

For each viral family: Identify generalizations and exceptions

- List the general characteristics (genome, enveloped or naked)
- Hosts and clinical signs
- Diagnostic tests available (emphasis on gold standard method and which test NOT to employ)
- Control (vaccines, if no vaccine available what to do instead)

LO for all other lectures: (CLO 1,2,3,4)

- **For all the viral diseases covered in this course you need to: Know the etiologic agent, the general characteristics of the viral family it belongs to, the major clinical signs, the general pathogenesis, the diagnostics and the control measures, any particular detail pertinent to the specific disease**

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
CLO1: 1,2,3,4	A. Core Medical Knowledge (PLOs 3,4,5,6) B. Core Professional Attributes C. Core Clinical Competencies (Skills)

XII. Course Schedule

Dates	Week	Vet Viro asynchronous learning	Office hrs
17-Aug-21st	week 1	Lessons a. Introduction b. Replication (3 hrs)	zoom
24-28 Aug	2	Lessons a. Diagnoses b. Pathogenesis (4hrs)	zoom
Aug 31-Sep4	3	Lessons a. Oncogenesis and Immuno b. Evolution (3hrs)	zoom
7 -11 Sept	4	Lessons a. Vaccines b. Epidemiology (3hrs)	zoom
14-18 sept	5	Lessons a. DNA viruses b. RNA viruses (3hrs) c. Form activity)	zoom
21- 25 sept	6	Lesson Viruses of dogs (rabies, distemper, hepatitis, parvo, herpes, kennel cough viruses, papilloma) (3 hrs)	zoom
28 Sept-2nd Oct	7	Lesson Viruses of cats (FELV, FIV, FIP, herpes, Calici, F panleukopenia) (3hrs)	zoom
5 th - 9th Oct	8	Midterm Viro Oct 6 th (examsoft)	
12 -16 Oct	9	COVID discussion (not tested) (2hrs)	
19 -23 Oct	10	Lesson Viruses of cattle: FMD, Leukosis, BVD, MCF, IBR & other present, rota Corona in calves (5hrs)	zoom

26-30 Oct	11	cattle continue (3hrs) shipping fever, Prions	zoom
2nd 6th Nov	12	Lesson Viruses of small ruminants (3hrs) BT, CAE, OPP, OPA, Orf	zoom
9th-13 Nov	13	Lesson Viruses of horses (4hrs) EIA, EVA, E. encephalities, Influenza, rhinopneumonitis, E abortion, Coital exanthema, papilloma sarcoid, vesic stomatitis	zoom
16-20 Nov	14	Lesson Viruses of pigs (4hrs) Hog cholera ASF, Circovirus, Influenza, Rotavirus, TGEV, PED, Parvo, swine pox, vesic dz (FMD vs vesic stomatitis vs vesic exanthema)	zoom
23-27 Nov	15		
30 Nov-4 Dec	16	Final Viro Dec 2 nd (examsoft)	
7 -11 Dec	17		

XIII. Grading and assessment policy, and grading rubrics

The examinations (summative assessments) will consist of MCQ questions on examsoft. The examinations will cover only the materials presented but outside reading is encouraged. The content of the examinations will be based on all the material covered in the lessons which are based on the **long notes**, and repeated in the Powerpoint presentations and verbal information presented by the lecturer. The aspects of immunology and biochemistry relevant to virology that were taught during the previous terms are considered part of the exam material. Students are responsible for reviewing those notes if needed. Students are expected to make use of the recommended notes. For the formative assessments: each lesson has a couple of MCQ embedded into the material as well as cases followed by MCQ on the second section. The short activity at the end on section 1 will be on MCQ on sakai test and quizzes. **The activities (MCQ, cases) for each lesson are due the Tuesday of the following week**

Grading

Formative		Points
Section 1	activities lessons 1-9	10
	Formative MCQ	5
Section 2	Canine cases	2
	Canine FB	5
	Feline cases	2
	Feline FB	5
	Equine cases	2
	Equine FB	5
	Cattle cases	2
	Cattle FB	5
	Small Rum cases	2
	Small Rum FB	5
	Swine cases	2

	Swine FB	5
summative	Midterm	20
	Final	20
	Forum participation	0-3
	Total	100

Forum participation 0-3		points
never		0
seldom	less 30% comments or Q	1
moderate	30-60% comments or Q	2
active	more than 60% comments or Q	3

Recommended study strategies

The online content posted in lessons, the course's long notes, lecture slides and lecture recordings on Panopto will be available. The exam material will come from LONG notes and lessons. The checklists, short activities, MCQ questions and the cases in lessons are mandatory. A review session of the material covered in each exam will be offered in several zoom sessions before each exam. These zoom sessions are not mandatory have been helpful to the students who have attended in the past. **The forums should be used to place questions regarding the material.** Office hours are on Mondays at 1 pm Grenadian time.

The material for this course is presented in different formats (long notes, slides, tables, activities, assignments) which may at times be repetitive. It aims to provide students with auditory, visual, reading/writing, kinesthetic (practical) and mixed learning approaches options so that they find what works for them (no need to use them all, but studying from the long notes is recommended).

TIPS (that probably apply to all courses)

- **Try to memorize the least.** However, there are a few things you need to memorize: families with DNA and RNA genome, which ones have segmented genomes and which families are enveloped or naked. This info will help you figure out probable transmission, availability and efficacy of vaccines, etc, later on.
 - For example, remember families with DNA genome (smaller group), all other will have RNA. You can make up an acronym or a story. Try to apply this information to every possible situation. Go back to check for confirmation, this will help with retention. Remember you need this for the exams in this course but also future courses, NAVLE and future practice. Try to integrate what you learn to things you already know
- **UNDERSTAND.** Don't read it 20 times, you may get a false sense of knowing the material because you can recite it.
 - Sit back and think about concepts (use the white board) this improves critical thinking and long term retention

- **Study with plenty of time.** After covering all the material there might be a stage of confusion. If you wait until the last day to study, you may have to take the exam in this state which is very stressful. Feeling comfortable with the material brings confidence which reduces test anxiety
- You may study alone but should try to **review with a friend/group.** This way you may be alerted of things you missed or misunderstood.
- **Sleep well** so you can be sharp and avoid silly mistakes.
- During the exam **don't overthink,** we are not trying to trick you.

XIV. Instructor's expectations of the student

Students are expected to keep up with the material assigned per week. Read the notes, complete assignment and ask questions. MCQs will be included in some of the lessons and cases so students should make sure to participate. There are check lists for each section, students should use them so that we can keep track of their progress in the course and identify any learning outcome that was not properly understood or presented. Forums are the best way of communication regarding questions about content, other issues can be sent to the class rep for them to notify the course director. Personal matters can be sent by email to the course director or the Dean of students.

XV. Professionalism statement

Please exhibit professional behavior and abide by the code of conduct in the student handbook. Students are expected to arrive on time for zooms and exams.

XVI. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed, notify the course director and the Dean of students.

Forum participation will be awarded up to 3 points (0= no participation, 1=30% or less, 2=30-60%, 3=more than 60%. This participation includes asking questions, posting comments, sharing interesting facts, sharing an experience, etc.

Zoom session attendance policy: not required but recommended

XVII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination. Students who have technical issues during the examination MUST inform the Course Director (s) (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 866-429-8889) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XVIII. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.

- a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
- b. [The Examsoft student perspective video 30mins](#)
- c. [The Examsoft/ExamID FAQ](#)
- d. Examsoft information page
- e. [The general Reminders/Guidelines](#)

XIX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices NA



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

Department of Pathobiology

AVIAN, FISH AND EXOTIC ANIMAL DISEASES (3 credits)

PTHB 516 Term 4

Spring 2021

I. Course Faculty and Staff Information

Dave Marancik, DVM, PhD, CertAqVet, Associate Professor

Email: dmaranci@sgu.edu

Tel: 473-444-4175 x 3837

Pathobiology Department

Office hours can be arranged with each professor for Zoom calls and through email for correspondence.

Dr. Marie Rush, DVM, DACZM, Visiting Professor

Email: marie.rush@antechimagingservices.com

Dr. Dan Johnson, DVM, DABVP, Visiting Professor

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Dr. Alfred Chikweto BVM, MSc, PhD Associate Professor

Email: achikweto@sgu.edu

Tel: 444-4175

Ms. Jonnel Edwards, BSc, MSc, Lab Demonstrator

Email: jedward6@sgu.edu

II. Course location

Lectures, course material, and schedules can be found online at:

<https://mycourses.sgu.edu/portal/site/22c04c89-8120-476d-8281-b2099998fc49>

III. Prerequisite and/or co-requisite courses

Good standing in Anatomy, Physiology, Histology/Embryology, Pathology and Pharmacology

IV. Required resources

1. St. George's University, School of Veterinary Medicine, course notes on Diseases of Birds

2. St. George's University, School of Veterinary Medicine, course notes on Fish Diseases
3. St. George's University, School of Veterinary Medicine, course notes on Avian Diseases
4. St. George's University, School of Veterinary Medicine, course notes on Small Companion Mammals
5. St. George's University, School of Veterinary Medicine, course notes on Reptiles and Amphibians

V. Recommended resources

1. Diseases of Poultry, Editor-in-chief: David E. Swayne. 13th edition (2013) Willey- Blackwell publication.
2. Infectious Diseases of Wild Birds, 1st Edition (2007) Edited by N. J. Thomas, D. B. Hunter and C. T. Atkinson. Blackwell Publishing.
3. Pathology of Pet and Aviary Birds. By R. E. Schmidt, D. R. Reavill and D. N. Phalen, 1st edition, (2003) Iowa State University Press
4. Fish Disease, Diagnosis and Treatment, By Edward J. Noga, 2nd Edition (2000), Iowa State University Press
5. Health, Maintenance and Principal Microbial Diseases of Cultured Fishes, By John A. Plumb, 2nd Edition (1999) Iowa State University Press
6. Systemic Pathology of Fish, Edited by Hugh W. Ferguson, 2nd Edition (2006) Scotian Press, London
7. Reptile Medicine and Surgery, 2nd Ed. Editor: Doug Mader, Saunders Company
8. Ferrets, Rabbits and Rodents-Clinical Medicine and Surgery-2nd Edition, Edited by Kathy Quesenberry, Saunders Company
9. Laboratory Animal Medicine, 3rd Edition (2015), Elsevier Inc.
10. Pathology of Laboratory Rodents and Rabbits, 3rd Edition (2007), Blackwell Publishing

VI. Accommodations

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

Non-traditional species represent an important and growing segment of veterinary medicine. This course provides a foundation in etiology, pathogenesis, diagnosis and treatment of avian, fish and exotic animal species. This includes species that are commonly encountered as pets or in the wild, in laboratory settings and in food

production. Strategies for species management, care and disease prevention are emphasized.

IX. Course-level outcomes

As a result of this course, students are expected to:

1. Define the unique anatomy and physiology of avian, aquatic animals, reptiles, amphibians, and small mammals as it applies to clinical management and disease pathogenesis.
2. Identify the major pathogens and recognize the clinical signs and lesions associated with common diseases.
3. Recognize unique husbandry requirements for each group of animals and disease manifestations if conditions are not adequately met.
4. Determine appropriate diagnostic tests to confirm diagnoses of infectious and non-infectious disease.
5. Determine treatment and biosecurity strategies in production, research, and pet animal environments including for zoonotic pathogens.

X. Lesson and Laboratory Level Outcomes

Lectures	Topic	
1-2	Pet Birds	<ol style="list-style-type: none"> 1. Identify the medical, physical, husbandry, and dietary needs of avian species. 2. Describe the proper restraint techniques of birds. 3. Identify normal parameters and interpret abnormalities and needs of each patient 4. Apply proper diagnostic techniques and testing for pathology identification.
3-9	Pet Birds	<ol style="list-style-type: none"> 1. Identify and comprehend major disease of concern for captive and wild avian species 2. Interpret the clinical signs and apply appropriate diagnostics 3. Correlate diagnostic results and all information to diagnosis of disease. 4. Illustrate findings to owners and know recommendations for treatment and zoonotic/reportable potentials.
10	Pet Birds	<ol style="list-style-type: none"> 1. Recognize the ethical, moral and psychological implications of euthanasia 2. Generate an understanding of the needs for and difficulties with euthanasia.
11	Commercial Birds	<ol style="list-style-type: none"> 1. Describe different types of management systems of poultry and how they can impact on disease occurrence. 2. Review strains and breeds of commercial chickens. 3. List the benefits of keeping poultry.
12	Commercial Birds	<ol style="list-style-type: none"> 1. Differentiate the characteristics of motile and non- motile salmonella.

		2. Describe the clinical signs, pathology, method of diagnosis and prevention of diseases caused by non-motile salmonella and motile salmonella.
13	Commercial Birds	<ol style="list-style-type: none"> 1. List species of Mycoplasma causing disease in avian species. 2. Describe the mode of transmission of species of mycoplasma in various avian species. 3. Recognize the clinical signs, pathology, methods of diagnosis, treatment and prevention and control of mycoplasma species in avian species.
14	Commercial Birds	<ol style="list-style-type: none"> 1. Name the diseases caused by Escherichia coli in avian species. 2. Describe the mode of transmission of <i>E. coli</i> 3. Based on clinical signs, mode of transmission, and pathology, differentiate between early embryonic mortality/chick mortality and coli septicemia/airsac disease. 4. Enumerate the method of diagnosis. 5. Describe the prevention and control of <i>E. coli</i> infection in avian species.
15	Commercial Birds	<ol style="list-style-type: none"> 1. Describe epidemiology of Pastuerella species and Campylobacter species in avian hosts. 2. Describe the mode of transmission, clinical signs, and pathology of fowl cholera. 3. Describe the role of birds in transmission of Campylobacter to humans. 4. Describe methods of diagnosis, prevention, treatment and control of fowl cholera.
16	Commercial Birds	<ol style="list-style-type: none"> 1. List species of bacteria causing infectious coryza and chlamydiosis in avian species. 2. Describe the mode of transmission of chlamydiosis and infectious coryza in avian species. 3. Describe the clinical signs, pathology and method of diagnosis of Chlamydia and infectious coryza in avian species.
17	Commercial Birds	<ol style="list-style-type: none"> 1. Explain the classification of NCD virus based on the pathogenicity. 2. Compare and contrast the clinical signs and gross lesions of various pathotypes of NCDV. 3. Describe etiology, mode of transmission and clinical signs of Marek's disease. 4. Describe prevention and control of NCD and Marek's disease.
18	Commercial Birds	<ol style="list-style-type: none"> 1. Describe etiology of avian influenza in various avian species. 2. Differential features of strains in relation to transmission, clinical signs and pathology in different avian species. 3. Describe etiology, clinical signs, lesions, diagnosis, prevention and control of infectious bursal disease.
19	Commercial Birds	<ol style="list-style-type: none"> 1. Describe etiology and epidemiology of fowl pox, infectious bronchitis (IB) and Egg drop syndrome (EDS 76).

		<ol style="list-style-type: none"> List avian species and age groups affected. Describe clinical signs and pathology in various age groups. Describe methods of diagnosis and prevention of fowl pox, IB and EDS 76.
20	Commercial Birds	<ol style="list-style-type: none"> Describe economic importance of fungal diseases. Describe etiology, clinical signs and pathology of fungal diseases. Describe methods of diagnosis, prevention and control of fungal diseases. Name various deficiency diseases and their economic impact. Describe clinical signs, and pathology of nutritional deficiency diseases. Apply the most suitable treatment for Vitamin E and D deficiencies.
21-25	Reptiles and Amphibians	<ol style="list-style-type: none"> Identify the medical, physical, husbandry and dietary needs of reptile and amphibians species. Apply proper examination, diagnostic, and treatment techniques. Identify and comprehend major diseases of concern for captive and wild species.
26-35	Small Mammals	<ol style="list-style-type: none"> Identify the medical, physical, husbandry and dietary needs of rabbits, rodents, ferrets, mice and other small mammals. Apply proper examination and diagnostic techniques. Identify and comprehend major diseases of concern for captive and wild species.
36	Fish	<ol style="list-style-type: none"> Describe the various ways in which the veterinary profession are and can become increasingly involved with fish Identify unique anatomy and physiology of fish as it applies to disease response and recognition of clinical signs. Distinguish conditions that predispose fish to infection and disease.
37	Fish	<ol style="list-style-type: none"> Discuss the important water quality parameters and their impact on fish health Demonstrate how to measure water quality parameters Determine when and how to alter water quality to improve fish health
38	Fish	<ol style="list-style-type: none"> Distinguish important bacterial diseases of fish and their zoonotic potential Recognize the clinical signs and pathogenic impact that these diseases can have on fish health Identify how to diagnose and treat bacterial diseases of fish
39	Fish	<ol style="list-style-type: none"> Compare and contrast the important parasitic pathogens of fish including location of infection and disease Describe the methodology used to diagnose and treat parasites of fish
40	Fish	<ol style="list-style-type: none"> Distinguish important viral diseases of fish

		<ol style="list-style-type: none"> 2. Recognize the clinical signs and describe how to diagnose and prevent viral diseases of fish 3. List common non-infectious causes of disease including neoplasia and toxicity
41	Marine Turtles	<ol style="list-style-type: none"> 1. Describe the basic biology of sea turtles and how that relates to proper husbandry and care in veterinary settings 2. List common causes of trauma in sea turtles and outline steps for trauma response 3. Determine proper handling & transportation procedures for moving sea turtles between the field and hospital 4. Apply safe diagnostic techniques and how to approach a treatment plan
42	Marine Turtles	<ol style="list-style-type: none"> 1. Describe the unique anatomy and physiology of sea turtles as it applies to anesthesia and surgery 2. List the common indications for surgery in sea turtles 3. Determine proper recovery and pain management protocols post-surgery

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGU SVM program level outcome
Define the unique anatomy and physiology of avian, aquatic animals, reptiles, amphibians, and small mammals as it applies to clinical management and disease pathogenesis.	Core Medical Knowledge
Identify the major pathogens and non-infectious diseases and recognize the clinical signs and lesions associated with common diseases.	Core Medical Knowledge
Recognize unique husbandry requirements for each group of animals and disease manifestations if conditions are not adequately met.	Core Medical Knowledge
Determine appropriate diagnostic tests to confirm diagnoses of infectious and non-infectious disease.	Core Medical Knowledge
Determine treatment and biosecurity strategies in production, research, and pet animal environments including for zoonotic pathogens.	Core Medical Knowledge

XII. Course Schedule

All lectures will be given via Panopto in accordance with SGU guidance. A Zoom session has been scheduled with each instructors to review concepts, ask questions, and discuss career

opportunities. The plan is to have each lecturer conduct at least one Zoom session within their section. Additionally, all instructors are available through email and more Zoom sessions can be scheduled if needed and dependent on scheduling.

Week	Lecture	Day/Date	Lecturer	Topic
1	1	Mon 18 Jan	Dr. Rush	Pet Birds
	2	Wed 20 Jan	Dr. Rush	Pet Birds
	3	Fri 22 Jan	Dr. Rush	Pet Birds

Week	Lecture	Day/Date	Lecturer	Topic
2	4	Mon 25 Jan	Dr. Rush	Pet Birds
	5	Wed 27 Jan	Dr. Rush	Pet Birds
	6	Fri 29 Jan	Dr. Rush	Pet Birds

Week	Lecture	Day/Date	Lecturer	Topic
3	7	Mon 1 Feb	Dr. Rush	Pet Birds
	8	Wed 3 Feb	Dr. Rush	Pet Birds
	9	Fri 5 Feb	Dr. Rush	Pet Birds

Week	Lecture	Day/Date	Lecturer	Topic
4	10	Mon 8 Feb	Dr. Rush	Pet Birds
	-	Wed 10 Feb	Dr. Rush	Zoom Office Hours 1-2 pm
	11	Wed 10 Feb	Dr. Chikweto	Commercial Birds
	12	Fri 12 Feb	Dr. Chikweto	Commercial Birds

Week	Lecture	Day/Date	Lecturer	Topic
5	13	Mon 15 Feb	Dr. Chikweto	Commercial Birds
	14	Wed 17 Feb	Dr. Chikweto	Commercial Birds
	15	Fri 19 Feb	Dr. Chikweto	Commercial Birds

Week	Lecture	Day/Date	Lecturer	Topic
6	16	Mon 22 Feb	Dr. Chikweto	Commercial Birds
	17	Tues 24 Feb	Dr. Chikweto	Commercial Birds
	18	Fri 26 Feb	Dr. Chikweto	Commercial Birds

Week	Lecture	Day/Date	Lecturer	Topic
7	19	Mon 1 March	Dr. Chikweto	Commercial Birds
	-	Wed 3 March	Dr. Chikweto	Zoom Office Hours 1-2 pm

	20	Wed 3 March	Dr. Chikweto	Commercial Birds
	x	Fri 5 March	No class	

Week	Lecture	Day/Date	Topic	
8	Mid-Term	Wed 10 March	Pet Birds, Commercial Birds	

Week	Lecture	Day/Date	Lecturer	Topic
9	21	Mon 15 March	Dr. Johnson	Reptiles/Amphibians
	22	Tues 16 March	Dr. Johnson	Reptiles/Amphibians
	23	Wed 17 March	Dr. Johnson	Reptiles/Amphibians
	24	Fri 19 March	Dr. Johnson	Reptiles/Amphibians

Week	Lecture	Day/Date	Lecturer	Topic
10	25	Mon 22 March	Dr. Johnson	Reptiles/Amphibians
	26	Wed 24 March	Dr. Johnson	Small Companion Animals
	27	Fri 26 March	Dr. Johnson	Small Companion Animals

Week	Lecture	Day/Date	Lecturer	Topic
11	28	Mon 29 March	Dr. Johnson	Small Companion Animals
	29	Wed 31 March	Dr. Johnson	Small Companion Animals
	30	Fri 2 March	Dr. Johnson	Small Companion Animals

Week	Lecture	Day/Date	Lecturer	Topic
12	31	Mon 5 April	Dr. Johnson	Small Companion Animals
	32	Wed 7 April	Dr. Johnson	Small Companion Animals
	33	Fri 9 April	Dr. Johnson	Small Companion Animals

Week	Lecture	Day/Date	Lecturer	Topic
13	34	Mon 12 April	Dr. Johnson	Small Companion Animals
	-	Wed 14 April	Dr. Johnson	Zoom Office Hours 1-2 pm
	35	Wed 14 April	Dr. Johnson	Small Companion Animals
	36	Fri 16 April	Dr. Marancik	Aquatic Animals

Week	Lecture	Day/Date	Lecturer	Topic
14	37	Mon 19 April	Dr. Marancik	Aquatic Animals

	38	Tue 20 April	Dr. Marancik	Aquatic Animals
	39	Wed 21 April	Dr. Marancik	Aquatic Animals
	40	Fri 23 April	Dr. Marancik	Aquatic Animals

Week	Lecture	Day/Date	Lecturer	Topic
15	41	Mon 23 Nov	Ms. Edwards	Aquatic Animals
	-	Wed 25 Nov	Dr. Marancik/ Ms. Edwards	Zoom Office Hours 1-2 pm
	42	Wed 25 Nov	Dr. Marancik	Aquatic Animals

Week	Lecture	Day/Date	Topic
16	Final	Wed 12 May	Reptiles/Amphibians, Small Mammals, Aquatic Animals

XI. Grading and assessment policy, and grading rubrics.

All students are expected to be familiar with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. All students are expected to attend assigned academic activities for all courses. Scheduling of examinations is at the discretion of the University. University policy dictates that an examination cannot be given prior to the scheduled date. Students who fail to appear for an examination without a valid reason will receive a score of “0” points for the examination. Students who receive an approved grade of Incomplete (“I”) for a course must take a completion examination as scheduled. Incomplete grades are given when course requirements have not been completed due to serious mitigating circumstances such as illness or family emergencies. The Office of the Dean of Students must approve the reason supporting the receipt of “I” grades. “I” grades remain on the transcript until another grade is given upon completion. If students have an “I” grade on their transcript, the required coursework must be completed prior to registration for the next term. If the work is not completed and the grade not received from the instructor within 30 days, the Incomplete (“I”) will be automatically changed to a Fail (“F”) by the Office of the Registrar. Incompletes are interim grades. Students do not repeat the course if they have received an “I” grade.

There will be TWO examinations for the course consisting of multiple choice questions (MCQ’s) administered through Exam Soft. The quiz and examinations shall cover the material described in the lectures and laboratory sessions.

All examinations will be sequestered. Students will NOT be provided with an electronic review of the questions they missed. Students can, however, meet with

Faculty to go over the topics that they had problems with, not the actual questions. A raw score of the quiz/examination will be given upon exit from SoftTest.

The assessment schedule is as follows:

Exam 1 (Mid-Term): 40 Points (Pet Birds and Commercial Birds)

Exam 2 (Final): 45 points (Reptiles/Amphibians, Small Companion Animals, and Aquatic Animals)

Total points: 85

Final Grading will be based on cumulative performance of all quizzes and examinations given for the course. Grading will be done as follows:

Letter	Range (%)	Grade Points	Grade Points Meaning
A	90-100	4.00	Excellent Pass
B+	85-89.5	3.50	Good Pass
B	80-84.5	3.00	Good Pass
C+	75-79.5	2.50	Acceptable Pass
C	70-74.5	2.00	Acceptable Pass
D+	65-69.5	1.50	Conditional Pass
D	60-64.5	1.00	Conditional Pass
P		0.00	Pass
F	<59.5	0.00	Fail

XII. Recommended study strategies

Study strategies will vary depending on the instructor, the material provided and the question format in each examination. Please inquire with each instructor for the best way to learn and apply the material. Generally, you will be expected to answer higher order questions and apply the information in a clinical scenario.

XIII. Instructor's expectations of the student

The student is expected to attend and come prepared to all lectures. This includes reviewing the learning objectives and class notes before each lecture period. Students should play a proactive role in their education which includes participating in class discussions and asking questions.

XIV. Professionalism statement

1. Please exhibit professional behavior in class.
2. Students are expected to arrive on time for lectures and exams.

3. The consumption of food is not allowed during lectures. Water and non-alcoholic drinks in spill-proof containers are allowed.
4. The use of mobile phones is not allowed during class and exams. Exceptions to these rules have to be discussed with the course director.
5. The lecturer may ask students who breach any of the above rules to leave the class.

XV. Attendance policy

Lecture and laboratory attendance and absence policies adhere to those outlined in the St. George's University Student Manual.

XVI. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVII. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. A Examsoft/ExamID quick guide for students (Please note that the current Exemplify version is 2.3.8)
 - b. The examsoft student perspective video 30mins
 - c. The Examsoft/ExamID FAQ
 - d. Examsoft information page
 - e. The general Reminders/Guidelines

XVIII. Copyright policy

“The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials solely for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited”



**ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
Veterinary Clinical Pathology (4 credits)
PTHB 532 TERM 3
Fall 2020**

I. Course Faculty and Staff Information

Course instructors: Melinda Wilkerson, DVM, MS, PhD, ACVP (Anatomic/Clinical pathology)

Professor and co-course director

Office location: SVM Pathobiology Trailer Block behind Anatomy

Email: mwilkers@sgu.edu

Office telephone number: +1473 439 2000 xtn 3673

Office hours: email to schedule an appointment

Richard M. Kabuusu, DVM, MPH, CPH, PhD

Professor and co-course director

Office location: SVM Pathobiology Trailer Block behind Anatomy

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dawn Seddon, BVSc, MSc (VetPath), ACVP (Clin Path), MRCVS, NHD Micro

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Laboratory Technicians: Ms. Ruth Alexander, BSc.

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Secretary: Ms. Cindy Edwards

Office location: Trailer Block behind the Sugar Shack Restaurant

Email: cedwards@sgu.edu

Office telephone number: +1473 439 2000 xtn 3339

II. Course location

- Online location—Sakai resources being used (i.e. Panopto, Lessons, Tests & Quizzes. Assignments, etc.)
- Aperio/ Leica digital microscopy at www.slidehosting.com

III. Prerequisite and/or co-requisite courses

- Physiology
- Basic cellular processes
- All present term three courses

IV. Required resources

- Resources: Long class notes (where provided) and power-point lectures
- Laboratory manual for Veterinary clinical pathology Fall 2020

V. Recommended resources

- Laptop specs need functional microphone and camera
- Thrall MA, Weiser G, Allison RW and Campbell TW. (2012). Veterinary hematology and clinical Chemistry, 2nd Edition. Wiley-Blackwell.
- **Stockham SL and Scott MA (2008). Fundamentals of veterinary clinical pathology. 2nd Edition. Blackwell Publishing (**Dr. Wilkerson follows this textbook very closely**)
- *eclinpath website; online textbook. Website: <http://www.eclinpath.com/>
- Villers E, Ristic J and Blackwood L (2016). BSAVA manual of canine and feline clinical pathology. 3rd Edition. <https://mycampus.sgu.edu/group/mycoach-vet/integrating-example>

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

- Reliable internet

VIII. Course rationale

Daily, veterinarians mostly in small and large animal practice, but in other practices (diagnostics, research, teaching, exotics) are required to select appropriate tests and reliable referral laboratories for common and rare diseases of their patients. They are expected to collect specimens that include (but not limited to), blood, urine and fine needle aspirates and to ensure that the samples are examined before they deteriorate, and thereby yielding inaccurate or misleading results. Most importantly veterinarians are expected to interpret results correctly with due regard to biological and non-biological factors which can influence results. Generally, clinical pathology, sometimes known as laboratory medicine, allows the veterinarian to evaluate the status and function of internal organs by assessing laboratory analytes from whole blood, serum or plasma, urine, and fluids, and interpreting cytologic samples. Clinical pathology, the subspecialty that deals with the use of laboratory methods (clinical chemistry, hematology, urinalysis, cytology) for the diagnosis and treatment of disease, is integral to nearly all diagnostic investigations.

IX Course learning outcomes (See Appendix for more explanation)

CLO1. Identify explain pre-analytical and analytical aspects of laboratory analytes

CLO2. Interpret laboratory data by being able to identify abnormalities using classifications and propose pathologic states, physiologic conditions, or specific diseases that might cause the abnormalities

CLO3. Describe the pathogenesis of the laboratory data abnormalities (the series of events that lead to the disease or pathologic state and abnormal laboratory data)

CLO4. Identify cells microscopically, digitally or abnormalities in cells that are of diagnostic/pathologic importance including microscopic features of cells in blood films, cavitory effusions, and aspirates from lesions in tissues (marrow, lymph nodes, & common inflammatory or neoplastic lesions).

X. Lesson learning outcomes

1. Introductory concepts

Part 1

- a. Identify and differentiate between blood samples (whole blood, plasma, and serum) and blood tubes
- b. Identify differences in types of assays (i.e. qualitative or quantitative)

Part 2

- a. Define reference intervals, reference range, and differentiate which analytes typically have Gaussian or non-Gaussian reference interval distributions
- b. Distinguish between preanalytical, analytical, and post analytical errors
- c. Distinguish between precision, accuracy, analytical sensitivity, analytical specificity and detection limit

Introduction to CBC (Erythrogram, leukogram, thrombogram)

2. Erythrocytes (Review erythron pools, iron, and use Classify Anemia)

- a. Define the function of the bone marrow and the tissue pools and contrast differences in the spleen of the cat compared to other species
- b. Identify tissue stores for iron
- c. Define reticulocytes and polychromatophils and explain their significance
- d. Be able to interpret erythrocyte data and provide a classification of the anemia using marrow responsiveness ([Retic]), morphologic criteria (Wintrobe Indices) or pathophysiologic criteria

3. Erythrocytes morphology of RBCs and hemoparasites

- a. Identify and define discocytes, rubricytosis, hypochromia, anisocytosis (macrocytes, microcytes, spherocytes) and inclusions other than parasites such as basophilic stippling & Howell jolly bodies
- b. Identify and define abnormal erythrocyte shapes: poikilocytes, schizocytes, spherocytes, echinocytes, elliptocytes, codocytes, acanthocytes, eccentrocytes, pyknocytes, keratocytes
- c. Identify hemoparasites and species they target: *Anaplasma marginale*, *A. centralie*, *Cytauxzooan*, *Babesia*, *Mycoplasmas sp.*

4. Erythrocytes - Analytical principles of Wintrobe Indices and Nonregenerative anemia

- a. Recognize which analytes impedance analyzers measure (MCV, RBC, Hgb)
- b. Recognize which analytes are calculated HCT, MCHC, MCH and what they measure.
- c. Be able to calculate absolute reticulocyte concentration
- d. Identify the disorders associated with nonregenerative anemias and describe the pathogenesis of the anemia in inflammation, renal disease, erythroid hypoplasia and ineffective erythropoiesis

5. Erythrocytes (regenerative anemias)

- a. Identify the disorders associated with regenerative anemias (blood loss and hemolytic) and describe the pathogenesis of anemia in blood loss disorders (acute vs chronic)
- b. Describe the pathogenesis of extravascular and intravascular hemolytic anemias and the morphologic findings you expect for each disorder and the morphologic findings expected with each.

6. Regenerative anemias – hemolytic anemias

- a. Identify the disorders associated with hemolytic anemia
- b. Explain the difference between Rouleaux and agglutination
- c. Identify the tests to determine if immune mediated hemolytic anemia is present
- d. Describe pathogenesis and expected erythrocyte morphology with:
 - Immune mediated
 - Infectious agents
 - erythrocyte metabolic defects due to oxidative injury results in
 - Heinz body anemia, hypophosphatemia, eccentrocytic anemia
 - erythrocyte fragmentation

7. Analytical Methods In-Office Hematology (Dr. George Daniel, Abaxis)

- a. Describe the basic principles of hematology analysis of red blood cell mass [RBC], [Hct], [Hgb], WBC, and Platelets using:
 - Manual counting/hemocytometer (used more in exotics and CSF)
 - Impedance analyzers* (SGU uses these analyzers and this is most important)
 - Dual impedance/optical or flow cytometry-based analyzers

8. Erythrocytes (Fe tests/Erythrocytosis)

- a. Interpret [Fe], TIBC, ferritin, and stainable Fe in the context of Fe deficiency, inflammation, and hemolysis.
- b. Be able to identify erythrocytosis in a CBC
- c. Describe causes and pathogenesis of erythrocytosis

9. Intro to Leukocytes (pools, migration, analytic principles, and neutrophil shifts)

- a. Describe the myeloid bone marrow pools and time spent in each neutrophil pool in health and during inflammation (monocyte pools are similar)
- b. Describe and contrast 3 lymphocyte migration paths
- c. Describe how [nRBC] > 10 interferes with [WBC]
- d. Describe how you determine differential white cell counts and concentrations
- e. Define left shifts of neutrophil concentrations (regenerative vs degenerative)
- f. Describe the reason for and significance of hypersegmented neutrophils

10. Leukocytosis (Neutrophilia, lymphocytosis, monocytosis, eosinophilia, and basophilia)

- a. Describe, define, and identify toxic neutrophils
- b. Describe expected patterns and pathogenesis for mature segmented and band neutrophils in acute inflammatory neutrophilia, chronic inflammatory neutrophilia, steroid or stress neutrophilia, and physiologic neutrophilia
- c. List diseases and conditions that cause lymphocytosis.
- d. Describe pathogenesis of chronic lymphocytosis, physiologic (shift) lymphocytosis, and lymphoproliferative lymphocytosis
- e. Describe reactive lymphocytes and significance
- f. List common causes of monocytosis, eosinophilia, and basophilia

11. Leukopenia (neutropenia and lymphopenia)

- a. List diseases and conditions that cause neutropenia.
- b. Describe pathogenesis of inflammatory (overwhelming) neutropenia
- c. Describe pathogenesis of granulocytic hypoplasia
- d. List diseases and conditions of lymphopenia.
- e. Describe pathogenesis of inflammatory lymphopenia, stress lymphopenia, and depletion lymphopenia

12. Leukocytes, abnormal morphology, organisms, and leukemia

- a. Describe and identify leukocyte organisms
- b. Describe and contrast myeloid, lymphoid, erythroid, and megakaryocytic leukemia
- c. Identify the CD molecule used to distinguish acute from chronic leukemia
- d. Identify CD molecules that distinguish myeloid from monocytic from lymphocytic leukemias
- e. Recognize the purpose of the PARR test

13. Thrombogram (analytical principles, thrombocytopenia and thrombocytosis)

- a. Review the physiology and functions of platelets
- b. Describe the analytical principles of determination of platelet concentration via impedance, optical, and manual methods (slide estimate)
- c. Describe the causes of platelet clumping and how it effects the accuracy of the platelet concentration
- d. Identify the canine breeds that have macroplatelets and pseudothrombocytopenia
- e. List the causes of thrombocytopenia
- f. Describe the pathogenesis of immune mediated and consumptive thrombocytopenia.
- g. Describe the pathogenesis of inflammatory, Fe deficiency, and exercise induced thrombocytosis

14. Proteins Part 1

- a. Describe production sites for proteins
- b. Describe physiologic functions of albumin, globulins, fibrinogen
- c. Define Inflammatory protein groups (Acute phase proteins and Delayed response)
- d. Describe analytical principles of measuring TP (plasma and serum), albumin, globulin, and fibrinogen
 - o Recognize interferences in refractometry and BCG
 - o Be able to interpret serum protein electrophoresis (SPE) patterns
 - o Differences between total solids concentration and total protein concentration
 - o Define and explain processes that cause dysproteinemias (hyperproteinemia and pathologic states)

15. Proteins Part 2, (Hypoproteinemia)

- a. Interpret serum and plasma protein concentrations that indicate:
- b. Protein loss e.g. PLD, PLN, PLE, decreased synthesis or protein catabolism
- c. Describe the pathogenesis of the serum/plasma protein concentrations in
 - PLD, PLN, PLE, decreased synthesis or protein catabolism (hepatic insufficiency, malabsorption, cachexia)
 - Factitious hyperalbuminemia in a BCG assay (pseudo hyperalbuminemia)

16: Primary hemostasis

- a. List the major facts about hemostasis
- b. List major differences between bleeding and thrombosis
- c. Describe the process that leads to the formation of a platelet plug

- d. Outline the main function of platelets in primary hemostasis
- e. Outline the antithrombotic and prothrombotic properties of endothelial cells
- f. List hemorrhagic patterns associated with primary hemostatic disorders
- g. Outline the main regulatory proteins of the primary hemostasis
- h. Interpret qualitative test results used to assess primary hemostatic disorders
- i. Interpret quantitative test results used to assess primary hemostatic disorders
- j. List some differential diagnoses for primary hemostatic disorders

17: Secondary hemostasis

- a. Outline the main goal of secondary hemostasis
- b. Outline the main regulatory proteins of the coagulation
- c. Describe the main steps of the cell-based model of thrombin generation
- d. List hemorrhagic patterns associated with secondary hemostatic disorders
- e. List the role (and factors) of the contact pathway
- f. Interpret tests used to assess intrinsic and common pathway disorders
- g. Interpret tests used to assess extrinsic and common pathway disorders cascade
- h. List key differential diagnoses for secondary hemostatic disorders

18: Tertiary hemostasis and thrombosis

- a. Outline the main goal of tertiary hemostasis
- b. Outline the main regulatory proteins of the tertiary hemostasis
- c. List the anticoagulant properties of thrombin
- d. Outline the major causes of thrombosis
- e. Describe the relationship between hemostasis and inflammation
- f. Interpret tests used to assess thrombi formation and/ or antithrombotic processes
- g. List major differential diagnoses
- h. Interpret CBC and coagulation test results in clinical cases of bleeding

19: Principles of cytological examination

- a. Describe good aspiration, imprint and smearing techniques
- b. List the indications, advantages for cytology, and limitations
- c. Outline the “systematic approach” to the interpretation of cytologic specimens
- d. Describe characteristics of good cytologic preparations
- e. Describe characteristics of non-diagnostic preparations
- f. Recognize artifacts in cytologic preparations

20: Inflammatory vs neoplastic processes

- a. Apply “cytologic algorithm” criteria to cutaneous masses
- b. Describe the components of inflammatory processes
- c. Recognize common microorganisms in septic inflammatory lesions
- d. Memorize specific stains used to identify organisms
- e. Recognize degenerate neutrophils
- f. Recognize non-degenerate neutrophils
- g. Describe the biologic behavior of neoplastic lesions
- h. Outline features (criteria) for malignancy
- i. Recognize epithelial and mesenchymal cell neoplasms

21: Benign neoplasms, round cell neoplasms and lymph nodes

- a. List examples of benign neoplasms
- b. List the various round cell neoplasms
- c. List the biologic behavior of round cell neoplasms
- d. Describe distinct features of round cell neoplasms
- e. List some special stains for round cell neoplasms
- f. List the common indications for lymph node aspiration
- g. Categorize lymphadenopathy based on cytology
- h. List advanced diagnostic techniques for lymphomas

22: Internal organs and respiratory tract cytology

- a. List the common indications for aspiration of internal organs and the risks
- b. Stage estrus in a dog based on cytologic findings
- c. Recognize the major cytologic findings in the prostatic diseases
- d. List common cytologic findings in major hepatopathies
- e. List the sampling techniques for the respiratory tract
- f. Recognize oro-pharyngeal contamination of samples
- g. Classify respiratory samples as neoplastic or inflammatory based on images

23: Cavitory effusions

- a. Outline the major techniques for analyzing fluids
- b. Discuss the pathogenesis of fluid accumulation within these spaces
- c. Differentiate between protein-poor and protein-rich transudates
- d. Describe the relationship between renal failure and fluid accumulation
- e. Differentiate between neoplastic and inflammatory effusions
- f. Recognize mesothelial cells
- g. List several causes and features of protein-poor transudates
- h. List several causes and features of protein-rich transudates

24: Specific cavitory effusions

- a. List several causes and features of exudates
- b. List major causes and features of septic exudates
- c. Differentiate iatrogenic from pathologic hemorrhage
- d. Differentiate chyle from pseudo-chyle
- e. Classify equine peritonitis based on cytological findings
- f. Describe cytologic features of FIP
- g. Describe cytologic features in uroperitoneum
- h. Describe cytologic features in bile peritonitis

25: Synovial fluid cytology and cerebrospinal fluid

- a. Describe the collection and handling of synovial fluid
- b. Describe the major cells in normal joint fluid
- c. Describe the major cells in acute and chronic arthritis
- d. Differentiate thixotropism from mucin clot
- e. Describe techniques unique to joint fluid analysis

- f. Describe the collection and handling of CSF samples
- g. Explain the basis for urgent analysis of CSF
- h. List the key elements and unique tests of CSF analysis
- i. Describe the common findings in “normal” CSF
- j. Explain the underlying causes for abnormal findings in CSF

27. Urinary

- a. Define azotemia and uremia
- b. Define and recognize chronic renal insufficiency/failure based on lab data
- c. Define and recognize acute renal failure based on lab data
- d. Interpret UN & CREAT concentrations in serum with/without USG_{ref} and urinalysis;
 - o Describe mechanisms of pre-renal, renal, and post renal azotemia
 - o List tests that evaluate renal disease

28. Interpret Urinalysis data regarding:

- a. physical characteristics of urine, qualitative or semi-quantitative chemical characteristics of urine (pH, protein, glucose, ketone, bilirubin, urobilinogen, heme)
- b. $USG_{ref} < 1.007$, $1.008 - 1.013$, > 1.013 in dehydrated states,
- c. $USG_{ref} > 1.013$ when glucosuria or proteinuria is present
- d. Interpret significance in urine sediment findings (i.e. cells, casts, crystals, organisms)
- e. Interpret Protein/Creatinine Ratio in PLN and hematuria (voided sample)
- f. Differentiate between pre – renal and post renal proteinuria
- g. Urinalysis – Videos for urine chemistry / sediment
<https://www.youtube.com/watch?v=jhmzkUcAbIM> (8mins, 44 secs)
 Idexx – the urine sediment examination
<https://www.youtube.com/watch?v=dswfnZXb3nM>
 (10mins, 43 secs)

29. Explain mechanisms of polyuria in the following disorders

- Chronic renal failure
- Diabetes Mellitus
- Central Diabetes Insipidus
- Nephrogenic Diabetes Insipidus
- Hyperadrenocorticism
- Hypoadrenocorticism
- Hypercalcemia
- Hepatic insufficiency

30. Electrolytes, total body sodium, potassium, water, osmolality

- a. Recognize, list, and explain causes of hypernatremia, hyponatremia, and normonatremia.
- b. Interpret Na and CL- data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
- c. Recognize, list, and explain causes of hyperkalemia and hypokalemia.
- d. Be able to interpret K data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
- e. Calculate and interpret osmolality
- f. Interpret serum chemistry data (especially electrolyte and total solute concentrations) that indicate or suggest:
 - Different forms of dehydration (i.e., hypertonic, isotonic, & hypotonic)

- Hypoadrenocorticism
- Metabolic acidoses and alkaloses
- Uroperitoneum
- Oliguric or anuric renal failure
- Anorexia
- Ketoacidotic diabetes mellitus
- Equine sweating
- Upper gastro-intestinal obstruction in dogs, cats, or ruminants
- Lactic acidosis
- Ethylene glycol toxicosis

31. Chloride and bicarbonate (HCO_3^- or TCO_2), Anion Gap

- Recognize, list, and explain causes of increased or decreased bicarbonate. Be able to interpret HCO_3^- or TCO_2 data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
- Recognize, list, and explain causes of increased or decreased anion gap. Be able to interpret anion gap (AG) data from a clinical scenario and determine which anions are most likely (i.e. inorganic vs organic) and the conditions responsible.
- Calculate the AG

32. Blood gases / Acid Base

- Define Acidemia, Alkalemia, Acidosis, Alkalosis, Hypercapnia, Hypocapnia, Hypoxemia, Hypoxia
- Interpret blood gas data including:
 - Increases and decreases in plasma pH values
 - Increases and decreases in plasma PaCO_2
 - Increases and decreases in plasma PaO_2
 - Increases and decreases in plasma HCO_3^- concentrations
 - Increases and decreases in plasma total CO_2 concentrations
- Interpret blood gas data that indicate or suggest:
 - Metabolic acidosis,
 - Metabolic acidosis with compensatory respiratory alkalosis
 - Metabolic alkalosis
 - Metabolic alkalosis with compensatory respiratory acidosis
 - Respiratory acidosis
 - Respiratory acidosis with compensatory metabolic alkalosis
 - Respiratory alkalosis
 - Respiratory alkalosis with compensatory metabolic acidosis
 - Hypoxemia due to pulmonary disease
 - Hypoxemia due to impaired respiratory exchange of gases
- Explain, list, or recognize the reasons for:
 - Decreased serum HCO_3^- concentration due to poor sample handling
 - Decreased PaCO_2 due to sample being exposed to air or when collected with excess heparin
 - Increased PaO_2 due to sample being exposed to air or when collected with excess heparin
 - Decreased PaO_2 and decreased pH when there is delayed analysis of a heparinized blood sample
 - Increased PaCO_2 due to respiratory disease or disorders that restrict respiration or as a compensation to alkalemia

- Decreased PaCO₂ as a response to hypoxemia or acidemia
- Acidemia due to disorders that cause lactic acidosis, ketoacidosis, renal failure, or extensive pulmonary disease
- Alkalemia due to disorders that cause gastric or abomasal loss of HCl, bovine renal failure, or hypoxemia
- Decreased PaO₂ due to pulmonary disease
- Increased PaO₂ during gas anesthesia
- PaO₂ is within reference intervals when anemia is causing hypoxia
- Tissue hypoxia when there is not hypoxemia

33. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

- Explain the difference in the regulation of [fCa⁺⁺] in horses compared to other species.
- Explain, list, or recognize the physiologic and pathologic processes or mechanisms that cause:
 - Hypercalcemia in hyperparathyroidism, malignancies, cholecalciferol & other toxicosis, equine renal failure, canine hypoadrenocorticism, and canine renal failure, hyperproteinemia
 - Hypocalcemia in hypoparathyroidism, chronic renal disease (dogs, cats, and cattle), post parturient state or during early lactation, toxic causes
 - Alterations in free Ca²⁺ concentrations due to acidemia or alkalemia
 - Hyperphosphatemia due to dehydration, renal failure, uroperitoneum, urinary tract obstruction, hypoparathyroidism, and myopathies
 - Hypophosphatemia due to anorexia, hyperparathyroidism, hyperinsulinism, and milk fever
 - Hypomagnesemia due to renal failure
 - Hypomagnesemia due to grass tetany or prolonged anorexia
 - Increased iPTH concentrations due to parathyroid neoplasm, chronic renal disease, or a diet with a low Ca²⁺:PO₄ ratio, and Increased PTHrp concentrations due to malignancies

34. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

- Explain, list, or recognize the reasons for hypocalcemia or hypomagnesemia due to hypoproteinemia and/or hypoalbuminemia
- Hyperphosphatemia due to in vitro hemolysis or delayed blood sample handling
- Pseudo hypocalcemia due to collection of blood into an EDTA anticoagulant
- Decreased fCa²⁺ concentration when blood sample collected with excess heparin
- Altered fCa²⁺ concentrations when blood or serum sample is not handled anaerobically

34. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

- Interpret serum [tCa⁺⁺] or plasma calcium [fCa⁺⁺], phosphorus, magnesium, and their regulatory hormone data including:
 - Hypercalcemia, hypocalcemia, and alterations in free Ca²⁺ concentrations
 - Hyperphosphatemia and hypophosphatemia
 - Hypermagnesemia and hypomagnesemia

- Increases in iPTH or PTHrp concentrations, decreases in iPTH concentrations, or iPTH concentrations WRI with a concurrent hypercalcemia

35. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

- a. Recognize typical total calcium and phosphorus concentrations, and their regulatory hormone [iPTH, PTHrp, vit. D] data that suggest or indicate:
 - Primary hyperparathyroidism
 - Primary hypoparathyroidism
 - Humoral hypercalcemia of malignancy
 - Secondary hyperparathyroidism
 - Hypervitaminosis D
 - Renal insufficiency/failure in dogs, cats, cattle, and horses
 - Milk fever

36. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

a. Interpret serum magnesium for

- Decreased GFR
- Hemolysis
- Hypoproteinemia
- Osmotic diuresis
- Ketonuria
- Bovine grass tetany

37. Enzymes including Muscle, Liver, pancreas

- a. Define and identify leakage enzymes vs. inducible enzymes
- b. Identify different liver enzymes used for evaluating liver disease in small and large animals.
- c. Explain, list, or recognize the physiologic and pathologic processes or mechanisms that cause the following:
 - Increased activities of ALP, ALT, AST, GGT, GMD, ID, and LD due to hepatic, biliary, or hepatobiliary disorders or conditions
 - Increased activities of ALP due to glucocorticoids in dogs and hyperthyroidism in cats
 - Increased activities of AST, LD, CK, or ALT due to muscular disorders
 - Increased activities of AMS or LPS due to pancreatic disease, dehydration, or renal disease
 - Increases in PLI concentration due to pancreatic disease
 - Decreases in TLI due to exocrine pancreatic insufficiency
- d. Explain, list, or recognize the reasons for:
 - Alterations in AST, LD, or CK activities due to in vitro hemolysis or delayed blood sample handling
 - Different enzyme data when assays are performed at different temperatures or with different substrates

38. Enzymes

- a. Interpret serum enzyme data including increased activities of ALP, ALT, AMS, AST, CK, GGT, GMD, ID, LD, and LPS

b. Interpret serum enzyme data that indicate or suggest:

- Hepatocellular damage
- Cholestasis
- Hepatic lipidosis
- Muscle damage
- Pancreatic acinar cell damage
- Changes associated with glucocorticoids
- Decreased glomerular filtration rate

39. Liver function

a. Explain, list, or recognize the physiologic and pathologic processes or mechanisms that cause the following:

- Hypoproteinemia due to hepatic disorders
- Ammonium biurate crystalluria due to hepatic disorders
- Hyposthenuria due to hepatic disorders
- Hyperbilirubinemia due to in vivo hemolysis, anorexia (horses, cattle), and cholestasis (obstructive or functional)
- Bilirubinuria due to in vivo hemolysis or cholestasis
- Increased bilirubin, unconjugated bilirubin, conjugated bilirubin, or δ -bilirubin concentration in pathologic or physiologic states
- Hypercholelemia (increased bile acid concentration) due to portosystemic shunts, diffuse liver disease, and cholestasis (obstructive or functional)
- Hyperammonemia or increased bile acids due to portosystemic shunts, diffuse liver disease, and, in horses, intestinal disease

b. Interpret CBC, serum chemistry, or urinalysis data that suggest or indicate

- Hepatic dysfunction including evidence of:
 - Raised bile acids
 - Hepatic lipidosis in cats
- Decreased number of functional hepatocytes
 - Portosystemic shunt
- Decreased hepatocyte uptake of bilirubin
- Decreased biliary excretion of bilirubin or bile acids
 - Extravascular hemolysis
 - Intestinal disease in horses
- Explain, list, or recognize the reasons for:
 - Falsely decreased serum bilirubin concentration after sample is exposed to daylight
 - False elevations or decreases in bile acid concentrations due to lipemia or hemolyzed blood samples respectively

40. Lipids

a. Explain, list, or recognize the physiologic or pathologic mechanisms and interpret increases and decreases of cholesterol and / or triglycerides that are associated with the following:

- hypercholesterolemia
- protein-losing nephropathy, hypothyroidism, cholestasis, diabetes mellitus, metabolism disorders in specific breeds, liver disease (cholestasis) and eating a meal

- Hypertriglyceridemia – post prandial, equine & camelid hyperlipemias, acute pancreatitis, metabolism disorders in specific breeds, and diabetic disorders
- Hypocholesterolemia due to hepatic insufficiency.
- Explain the mechanism of production of ketones and NEFAs in ruminants during negative energy balance with hepatic lipidosis.

41. Pancreas (exocrine) and Intestinal disorders

- Explain, list, or recognize the physiologic or pathologic processes or mechanisms that cause the following:
 - Hyperamylasemia, hyperlipasemia, increased PLI concentration in acute pancreatitis
 - Decreased TLI concentration in chronic pancreatitis or pancreatic acinar cell atrophy (exocrine pancreatic insufficiency)
 - Increased TLI concentration, amylase and lipase in azotemic dogs
 - Decreased cobalamin or folate concentrations due to pancreatic or intestinal disorders
 - Increased fecal α 1-PI concentration in dogs and cats with intestinal diseases
 - Flat glucose absorption curves in horses with intestinal diseases
 - Microbial dysbiosis
- Interpret
 - increased serum AMS & LPS activities
 - increased PLI concentration
 - decreased serum TLI concentration
 - decreased cobalamin concentration
 - decreased and increased folate concentration
 - increased fecal α 1-PI concentration
 -

42. Pancreas (exocrine) and Intestinal disorders

- Interpret laboratory test results related to exocrine pancreas and intestine that suggest or indicate:
 - Acute pancreatitis
 - Exocrine pancreatic insufficiency
 - Azotemic disorders
 - Diffuse or segmental disease of intestinal mucosa
 - Protein-losing enteropathy
- Explain, list, or recognize the reasons for:
 - Increased TLI concentrations in a nonfasted dog
 - False feline TLI (or PLI) data if a canine assay is used
 - False folate concentration if there is in vitro hemolysis
 - False cobalamin concentration if the sample is exposed to daylight

43. Glucose / Endocrine pancreas

- Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
 - Hyperglycemia due to excitement, eating a meal, stress, β -cell destruction, feline pancreatic insular amyloidosis, acute pancreatitis, hyperadrenocorticism, equine hyperpituitarism, pheochromocytoma, steroid therapy, intravenous glucose therapy, xylazine & detomidine therapy, and insulin overdose
 - Hypoglycemia due to functional β -cell neoplasm, hypoadrenocorticism, hepatic insufficiency, xylitol toxicosis, spontaneous bovine ketosis, and insulin overdose, hypoglycemia in sepsis, young animals, small breeds

- Increased fructosamine concentration in persistent hyperglycemic states
- Decreased fructosamine concentration in persistent hypoglycemic states, hypoproteinemic states, or hyperthyroidism
- Increased fructosamine in persistent hyperglycemic states
- Hyperinsulinemia (inappropriate) relative to glucose in functional β -cell neoplasm and insulin in hyperglycemic disorders
- Hypoinsulinemia due to β -cell damage or hypoglycemic disorders

44. Glucose / Endocrine pancreas

- Interpret serum (blood, plasma) glucose, ketoamine, and insulin concentrations including:
 - Hyperglycemia
 - Hypoglycemia
 - Increased fructosamine concentration
 - Hyperinsulinemia
 - Hypoinsulinemia
- Interpret serum (blood, plasma) glucose, ketoamine, and insulin concentrations that indicate or suggest:
 - Recent ingestion of a meal
 - Diabetes mellitus due to a variety of disorders
 - Functional β -cell neoplasm
 - Hepatic insufficiency/failure
- Explain, list, or recognize the reasons for:
 - Pseudo hypoglycemia due to delayed removal of serum from clotted blood, marked leukocytosis, or marked erythrocytosis
 - Artifactual hypoglycemia due to collection of blood into NaF-oxalate tubes

45. Adrenal hormones

- Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
 - Typical hematology and Chemistry changes seen in hyper- and hypoadrenocorticism
 - The common presentation in terms of organ involved – ie primary, secondary and tertiary organ
 - Normocortisolemia in a dog with hyperadrenocorticism
 - Increased urinary cortisol to creatinine ratio due to hyperadrenocorticism or nonadrenal disease
 - Increased ACTH concentration in hypoadrenocorticism
 - Increased ACTH concentration in hyperadrenocorticism
 - Decreased ACTH concentration in hyperadrenocorticism
 - Inadequate cortisol suppression in LDDST in PDH, FAN, or nonadrenal disease
 - Inadequate cortisol suppression in HDDST in PDH, FAN, or nonadrenal disease
 - Escape from suppression in LDDST or HDDST
 - Adequate cortisol suppression in PDH or nonadrenal disease
 - Exaggerated cortisol response to ACTH in PDH, FAN, or nonadrenal disease
 - Poor cortisol response to ACTH in FAN

- Normal cortisol response to ACTH in PDH, FAN, or nonadrenal disease
- Explain, list, or recognize the reasons for:
 - Falsely low ACTH concentrations if sample is not handled properly

46. Adrenal hormones

- a. Interpret serum or plasma cortisol and ACTH concentrations and urine cortisol:creatinine ratios including:
 - Hypercortisolemia
 - Hypocortisolemia
 - Increased ACTH concentration with concurrent hypercortisolemia or hypocortisolemia
 - Decreased ACTH concentration with concurrent hypercortisolemia or hypocortisolemia
 - Increased cortisol:creatinine ratio

47. Adrenal hormones

- a. Interpret serum or plasma cortisol and ACTH concentrations and urine cortisol:creatinine ratios that indicate or suggest:
 - Hyperadrenocorticism due to pituitary neoplasm
 - Hyperadrenocorticism due to adrenal neoplasm
 - Iatrogenic hyperadrenocorticism
 - Primary hypoadrenocorticism
 - Iatrogenic hypoadrenocorticism
 - Nonadrenal disease that is causing hypercortisolemia or secondary hyperadrenocorticism
- a. Differentiate between tests and be able to apply to disease syndromes associated with hypo – and hyperadrenocorticism
- b. Describe the sensitivity and specificity of tests used for diagnosis of hyperadrenocorticism

48. Thyroid hormones

- a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
- b. The most common organ involved – i. e. primary, secondary or tertiary organ
- c. Important changes in hematology and chemistry associated with hypo- and hyperthyroidism
- d. Understand euthyroid sick syndrome and list the factors that cause this
- e. Hyperthyroxemia due to thyroid neoplasm or administration of TSH
- f. Absence of hyperthyroxemia in feline hyperthyroidism due to thyroid adenoma

49. Thyroid hormones

- a. Hypothyroxemia or decreased free [T4] due to lymphocytic thyroiditis (or other causes of thyroid gland damage), nonthyroidal disease, and some drug treatments
- b. Increased TSH concentrations due to lymphocytic thyroiditis (or other causes of thyroid gland damage)
- c. Increased TgAA concentration due to lymphocytic thyroiditis
- d. Failure to suppress [T4] with T3 treatments in a cat
- e. List the main breeds of dogs which have lower RIs for T4
- f. Explain, list, or recognize the reasons for:
 - Positive interference by thyroxine autoantibodies on measurement of thyroxine concentration

50. Thyroid hormones

- a. Describe the feedback mechanism in control of thyroid hormones and list which hormones are the most active and which ones are involved in the feedback mechanism
- b. Describe why freeT4 by equilibrium dialysis is the gold standard test for assessing the thyroid.
- c. Interpret serum thyroxine, free thyroxine (by equilibrium dialysis), TSH, and TgAA concentrations including:
 - Hyperthyroxemia
 - Hypothyroxemia
 - Hyperthyroxemia with concurrent free thyroxine concentrations
 - Hypothyroxemia with concurrent free thyroxine concentrations
 - Increased TSH concentration
 - Increased TgAA concentration

Learning objectives for the laboratory sessions

Lab 1. Online Videos presented in Sakai

<https://eclinpath.com/hematology/instructional-videos/>

- Observe and describe how to handle EDTA blood samples appropriately
- Observe and describe how to make an adequate blood film
- Observe and describe how to perform a spun HCT (PCV)
- Observe and describe how to perform a plasma total protein by refractometer
- Be able to determine the HCT of microhematocrit tube using microhematocrit reader (exercise in Lab 1)
- Observe and be able to describe the basic principles of the Abaxis HM5 hematology analyzer for RBC, HCT, Hgb, and WBC concentration determinations via PowerPoint and online video. <https://www2.zoetisus.com/diagnostics/instruments/vetscan-hm5#>
-

Lab 2. Blood film evaluation of healthy animals (dog, cat, and horse)

Leica online Slide hosting site and prior PowerPoint lectures

Slide hosting site and log in information

<http://www.slidehosting.com/Login.php>

Username = SGUGUEST, password Leic@2020

Click on Course PTHB 532 Folder (Vet. Clin. Path)

Click on Lessons and select Lab 2.

- Identify and describe the morphologies of RBCs (crenation/echinocytes from healthy animals)
- Identify and describe the morphologies of platelets from healthy animals
- Identify and describe the morphologies of WBCs from healthy animals
- Be able to perform a differential WBC count and an absolute WBC count
- Perform platelet estimates via blood film review
- Compare obtained results with data from HM5 (dog and cat samples)

Lab 3. Blood film evaluation of Anemia cases (3 dog films, information posted in Sakai

Lessons and on Leica online slide hosting site)

<http://www.slidehosting.com/Login.php>

Username = SGUGUEST, password Leic@2020

Click on Course PTHB 532 Folder (Vet. Clin. Path)

Click on Lessons and select Lab 3.

- Identify morphologic abnormalities of RBC (anisocytosis, macrocytes, microcytes, hypochromasia, polychromasia, spherocytes, and platelets (clumping) and describe clinical significance
- Recognize a left shift and be able to identify leukocyte patterns
- Practice interpretation of the hematology data
- Be able to classify anemia, leukocyte patterns, and thrombogram

Lab 4. Zoom Session

- Instructor will model how to approach case data interpretations
- Instructor will introduce the Team Cases and expectations for participation via the forum in Sakai and presentations by Zoom for Lab 5.

Lab 5. Zoom Sessions (2 sections, Teams 1 -7 3- 4 pm, 8 – 14, 4:15 – 5:15 pm)

- Each member of each Team will be asked to provide an answer to a question for the case they are assigned too. The member will provide answers in the Forum on Sakai. For complete answers each Team can receive 6 points.
- During the Zoom session, instructors will ask each Team member to briefly summary the case and review each of the questions for the other Teams. Instructors will ask Team members randomly, so that each Team member needs to be familiar with all aspects of the case. These oral responses will be worth up to 2 points (see rubric below). Cases 1 – 7 will be discussed by Teams 1 – 7 during the first lab session. At the second lab session, Cases 8 -14 will be discussed by Teams 8 -14. Each zoom will be recorded.
- There will be a set of 14 questions (MCQ) available after the lab (due one week later) for all students to fill out for 14 points. These questions will address major concepts (Erythrogram, leukogram, thrombogram, or hemostasis concepts) in each of the cases.

Lab 6 Leica online slide hosting site

<http://www.slidehosting.com/Login.php>

Username = SGUGUEST, password Leic@2020

Click on Course PTHB 532 Folder (Vet Clin. Path)

Click on Lessons and select Cytology slides Lab 6.

- Recognize bacteria in a digital image
- Recognize degenerate and non-degenerate neutrophils in digital images
- Identify “criteria for malignancy” using digital images
- Recognize epithelial and mesenchymal neoplasms using digital images
- Describe characteristics of all round cells neoplasms using digital images
-

Lab 7

- Cytology case discussions including on cytology using digital images that emphasize cytological findings suggestive of malignant and benign neoplasms, acute, septic, or chronic inflammation

Being professional in forum/participation/assignments Introduction to how to make blood films, perform microhematocrit readings, describe how to use a refractometer to read USG and total proteins, and perform urinalysis.	C. Core Clinical Competencies (Skills)
Course level outcome	SGUSVM program level outcome
CLO1:	A. Core Medical Knowledge B. Core Professional Attributes C. Core Clinical Competencies (Skills)

XII. Course Schedule

Wk.	Lecture topic and lecture hour equivalents	Lab Assign	Assessment (f = formative) S= Summative	Instructor
1	1. Introductory concepts 2. Classify anemias 3. Erythrocyte morphology & parasites 4. Wintrobe indices/ non-regenerative anemias		1.0 points (S) (3 f Q - 0 pt) 0.5 points (S) 1.0 points (S) (4 f Q - 0 pt)	Dr. Wilkerson
2	5. Regenerative anemias 6. Hemolytic anemias 7. Hematology analyzers 8. Lab 1: Manual CBC methods online		(4 f Q - 0 pt) 0.5 point (S) Lab 1.0 point (S) Erythrocyte Section Quiz 2.5 points (S)	Dr. Wilkerson Dr. Daniel
3	9. Fe testing/ Erythrocytosis 10. Leukocytes (left shift) 11. Leukocytosis 12. Leukopenia 13. Lab 2: Blood film evaluation digital slides	Zoom /Aperio Digital slides (2 sessions, Teams 1-7, 3 – 4 pm, Teams 8 -14 4:15 -5:15)	(1 f Q- 0 points) Lab 2: 1.0 points (S)	Dr. Wilkerson
4	14. Leukocyte morphology and parasites 15. Platelets 16. Proteins 1 17. Proteins 2 18. Lab 3: Abnormal Blood film and case evaluation digital slides	Zoom /Aperio Digital slides (2 sessions, Teams 1-7, 3 – 4 pm, Teams 8 -14 4:15 -5:15)	Lab 1.0 point (S) Leukocytes, Platelets, proteins Quiz 4.5 points (S)	Dr. Wilkerson
5	19. Primary hemostasis 20. Secondary hemostasis 21. Tertiary hemostasis			Dr. Kabuusu

	22. Lab 4: Instructor models cases and provides instruction for Lab 5.	Zoom		
6	23. Principles of cytology 24. Inflammatory & neoplastic processes 25. Round cell neoplasms & lymph nodes 26. Internal organs and respiratory tract 27. Lab 5: CBC case presentations by TEAMS	Zoom (2 sessions Teams 1-7, 3- 4 pm Teams 8 – 14, 4:15 – 5:15 pm)	6 points (S) 6 points for Team work 2 points for individual on CBC cases (S) 14 MCQs (S)	Dr. Kabuusu Dr. Wilkerson
7	28. Cavitory effusions 29. Synovial fluids and CSF cytology 30. Case discussions (zoom) 31. Lab 6: Cytology cases using digital slides 32. Lab 7: Cytology cases using zoom	Zoom /Aperio Digital slides (2 sessions Teams 1-7, 3- 4 pm Teams 8 – 14, 4:15 – 5:15 pm)	2 points for team (S) 2 points for indiv (S) 6 points MCQ (S)	Dr. Kabuusu
8	No Mid-term Exam			
9	33. Physiologic processes of the Nephron 34. Urinary system 35. Interpret urinalysis data 36. Mechanisms of polyuria		4.0 points (S) (4MQC cases)	Dr. Seddon
10	37. Na, K, H ₂ O, osmolality 38. Cl, HCO ₃ , Anion Gap 39. Blood gases & acid base 40. Lab 8: Urinalysis online	Zoom cases Q&A case discussion 3 – 4 pm	4.0 points (S) (4MQC cases) 2.0 points (S) (Images lab MQC)	Dr. Seddon
11	41. Ca, Vit D, PTH, PTHrp, Phos 42. Ca, Vit D, PTH, PTHrp, Phos 43. Ca, Vit D, PTH, PTHrp, Phos 44. Ca, Vit D, PTH, PTHrp, Phos	Zoom Q&A case discussion 3 – 4 pm	4.0 points (S) (4MQC cases)	Dr. Seddon
12	45. Enzymes: muscle, liver, pancreas 46. Enzymes: muscle, liver, pancreas 47. Liver function 48. Lipids 49. Lab 9: Chemistry case discussions	Zoom Q&A case discussion 3 – 4 pm	4.0 points (S) (4MQC cases)	Dr. Seddon
13	50. Exocrine pancreas 51. GI disorders 52. Endocrine pancreas 53. Glucose		4.0 points (S) (4MQC cases)	Dr. Seddon
14	54. Adrenal hormones 55. Adrenal hormone 56. Thyroid hormones 57. Thyroid hormones 58. Review 59. Lab 10: chemistry case presentations by TEAMS	Zoom (2 sessions, Teams 1-7, 3 – 4 pm, Teams 8 -14 4:15 -5:15)	4.0 points (S) (4MQC cases) 6 points for Team work 2 points for individual on Chem / endo cases (S) 14 MCQs (S)	Dr. Seddon
15	No Final Exam			

XIII. Grading and assessment policy, and grading rubrics

Final grading will be based on cumulative performance in all examinations.

Letter	Grade Points	Grade Points Meaning
A 89.5-100	4.00	Excellent Pass
B+ 84.5-89.49	3.50	Good Pass
B 79.5-84.49	3.00	Good Pass
C+ 74.5-79.49	2.50	Acceptable Pass
C 69.5-74.49	2.00	Acceptable Pass
D + 64.5-69.49	1.50	Conditional Pass
D 59.5-64.49	1.00	Conditional Pass
F 1-59.49	0.00	Fail
I 0-0.99		Incomplete

Matrix for Assessments (Learning Activities, CLO, Points, Avail/Due Dates)

CLO	Assessment	Learning Activity	Points	Avail Date/ Due Date
Hematology (15 Lectures)				
CLO1. Explain pre-analytic and analytical concepts of lab data	Sakai Intro Quiz	2 Matching Q on Lecture 1 part 1 6 MCQ on Lecture 1 part 2	0.25 0.75	Aug. 17/ Aug. 24
CLO2. Interpret laboratory data using classifications (Classify anemia)	Sakai Quiz (Doogie Case)	2 - MCQ Lecture 2 Classifying Anemias	0.5	Aug. 17/ Aug. 24
CLO4. Identify abnormal erythrocyte morphology	Sakai Quiz	2 - Matching Q Lecture 3 Erythrocyte Morph	1	Aug. 17/ Aug. 31
CLO4. Identify abnormal erythrocyte morphology and explain significance	Sakai Quiz	6-MCQ Lectures 4-8 (Erythrocyte section)	2.5	Aug. 24/ Sept. 7
CLO4. Identify leukocyte subsets in blood films of	Sakai Short answer polling question on	Lab 2. Digital Microscopy viewing healthy blood films	1	Aug 31/ Sept. 7

equine, canine and feline	Poppy data of Lab 2			
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis CLO4. Identify Abnormal cells in a blood film	Sakai Lab 3 Quiz	Lab 3. Digital Microscopy viewing abnormal blood films in 3 dogs	1	Sept.7/ Sept. 14
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Sakai quiz	8- MCQ on Leukocytes, Platelets, thrombocyte Lectures 9-15	5	Sept. 7/ Sept. 14
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Written Forum	Lab5 Team work on forum Each team member responds to one question in forum Teams need to collaborate on their responses so all members agree on all responses for each question	6	Sept. 8/ Sept. 21
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Rubric (see below)	Lab 5. Individual verbal responses Verbal response to Instructors questions regarding the case via Zoom. Each member of the team will be selected randomly by instructor to explain a part of the case	2	Sept. 16/ Sept. 23
CLO2. Interpret laboratory data using classifications CLO3. Describe pathogenesis of abnormal lab. data	Sakai Quiz over Lab 5 cases	Lab 5. 14- MCQ	14	Sept. 16/ Sept. 28
Hemostasis (3	Sakai Quiz		10	Oct 2/

lectures) /Cytology (7 lectures) CLO1. Explain pre-analytic and analytical concepts of lab data CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data CLO4. Identify cells in cyto preps				Oct 9
CLO3. Describe pathogenesis CLO4. Identify cells in cyto preps	Q&A (oral)	Lab 6. A randomly-selected team member on digital microscopic cytological images	2	Oct 1/ Oct 1
CLO3. Describe pathogenesis of lab data CLO4. Identify cells in cyto preps	Q&A (oral)	Lab. 7. A randomly-selected team member answers the question	2	Oct 2/ Oct 2
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis of lab data CLO4. Identify cells in cyto preps	Sakai MCQ based on Lab 6 and Lab 7	Lab 6 & lab 7 MCQ	6	Oct 2/ Oct 9
Chemistry (25 lectures)				
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis CLO4. Identify structures / cells in urine	Sakai Quiz	Case based MCQ on Renal system & urinalysis 12-16 Oct	4	Oct 12/ Oct 19
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Sakai Quiz Rubric	Zoom 14 Oct Lab 8 Q&A case discussion 3 – 4 pm Images for UA Lab	2	Oct 19/ Oct 26

		MCQ Cases	4	
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Sakai Quiz	Case based MCQ on Ca, Vit D, PTH/PTHrP, Mg and Phos Zoom 28 Oct case discussion 3 – 4 pm	4	26 Oct/ Nov 2
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Sakai Quiz	Case based MCQ on Enzymes: muscl, liver, pancreas, lipids Zoom 4 Nov Lab 9 Q&A case discussion 3 – 4 pm	4	Nov 2/ Nov 9
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Sakai Quiz	Case based MCQ on Exocrine pancreas & GI disorders Endocrine pancreas and glucose	4	Nov 9/ Nov 16
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Sakai Quiz	Case based MCQ on Endocrine - Adrenal (hypo/ Hyper-adrenocorticism) and Thyroid (Hypo/ hyperthyroidism) Zoom 18 Nov (2 sessions, Teams 1-7, 3 – 4 pm, Teams 8 - 14 4:15 -5:15) Team work - Forum Verbal response to Instructors questions regarding the case via Zoom. Each member of the team will be selected randomly by instructor to explain a part of the case Teams need to collaborate on their responses so all members agree on all	4 6 2	Nov 16/ Nov 19

		responses for each question MCQ on all cases	14	
Total Points for Course			102	

Rubric for oral participation of Zoom Labs (5, 7, and 10)

During the zoom sessions, faculty will ask team members questions on the cases that were filled out in the forum by the team). The rubric below will be followed. Each team member needs to be familiar with the forum responses to each question from the case. Faculty will ask team members randomly to summary the case and answer specific questions. If the student is not able to participate in the Zoom session or not able to respond because of connectivity or mic issues, they will be asked to submit a brief audio response to the instructor via panopto recording.

Team # _____	Criteria of Standards of Performance including evidence of Professionalism			Total Points (2)
	Areas of development	Proficient	Advanced (Areas of strength)	
	1. attempts explanation, but is incomplete (0.5 pt)	1. Provide an explanation to the question that partially applies concepts (0.5 pt)	1. Provides a complete thorough explanation to the question (1 pt)	
	2. Does not attempt a response to follow up questions (0 pt)	2. Respond partially to follow up faculty or student questions (0.5 pt)	2. Provides a complete response to the follow up faculty or student question (1 pt)	
Member name				
1				
2				
3				
4				
5				
6				
7				
8				
9				

XIV. Recommended study strategies

Relative to other term three courses, clinical pathology is a difficult course. It depends mostly on a student's ability to understand and apply learned material. Only a small part of it depends on strict memorization of material.

Students are encouraged to determine their individual learning styles (visual, tactile or auditory) and apply these appropriately. Briefly; a visual learner likes to see the information they are trying to understand, to take notes or makes charts when reading; a tactile learner likes a hands-on approach (lab sessions – this terms labs will be converted to video and digital technology to view glass slides) while an auditory learner prefers to listen or talk to others (study groups).

Students are also encouraged to study the material sooner rather than later and to set studying schedules and stick to them.

We also recommend practicing applying the learned concepts to the cases that are posted to Sakai for the laboratories and presentations.

XV. Instructor's expectations of the student

The student is expected to review the online lectures prior to the zoom sessions.

XVI. Professionalism statement

Students are expected to conduct them themselves professionally during forums, zoom sessions, and during exams. If in doubt, please refer to the student and lab manuals, as well as to the syllabus.

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Team forum participation is mandatory and will be scored. Participation by Zoom sessions for case presentations is mandatory, unless a student has difficulty with the internet or the scheduled time. If this occurs the student is expected to contact the instructor (via email) at least 24 to 48 hours prior to the activity so alternative participation can be planned (i.e. submission of assignment online)

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@squ.edu OR support@squ.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@squ.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices

Detail description of CLOs

CLO1. Explain *pre-analytical and Analytical Aspects of laboratory analytes*. A student should be able to explain when the reported laboratory data represent poor sample handling, poor sample quality, unique sample properties, or the limitations of an analytical procedure. A student should also be able to describe the basis of the analytical principle of the assay for each laboratory analyte.

CLO2. *Be able to interpret Laboratory Data*, there are two recurring tasks for the cases.

- State appropriate terms to describe abnormalities and use classifications if appropriate (e.g., acute inflammatory leukogram, renal azotemia, hypernatremia or hypoglycemia)
- Propose appropriate pathologic states, physiologic conditions, pathologic syndromes, or specific diseases that might cause the defined abnormalities. The specificity of the proposed disorders should be appropriate for the available information (or the conclusion that can be justified); e.g., the leukogram justifies a conclusion that the animal has an inflammatory disease (but do not know where, why, or the cause), or the data can justify a conclusion of acute bacterial cystitis.

CLO3. Describe pathogeneses of laboratory data found in common clinical disorders and conditions (***most objectives of this course fall into this area***).

- Be able to identify or distinguish how a variety of clinical disorders and conditions can produce the same laboratory test result.
- Describe the *hows* and *whys* of pathogenic states so that laboratory data can provide clues to the variety of clinical disorders and conditions that occur in animals.

Pathogenesis (*patho-* disease; *-genesis* origin, creation, production) is the sequence of events that occur during the development of or the response to a disease. In the context of clinical pathology, *pathogenesis* of laboratory data starts with the initial pathologic event that causes changes in tissues, cells, or body fluids which eventually produce abnormal laboratory data.

The different pathogenesis levels can be divided as follows.

- Organ: changes in an organ that creates the abnormal laboratory data – rarely an adequate explanation in this course
- **Cellular**: what happens to cells; or how do cells create the abnormality – **common level for abnormal cell concentrations or the microscopic features of cells**
- **Physiologic**: what are the cellular or physiologic responses to hormones, to tissue damage, or to cellular or tissue dysfunction – **common level for clinical chemistry abnormalities**
- Biochemical: what happens in biochemical pathways – occasional level for either clinical chemistry abnormalities or microscopic features of cells
- Molecular: what happens with a molecule's interaction with other molecules – this level of understanding is usually not needed for clinical disorders or conditions

Other major pathogenesis concepts should be remembered when describing the processes that result in abnormal laboratory data.

- An abnormal analyte concentration in a body fluid typically represents a disruption of equilibrium. Blood concentrations in health reflect a balance between an analyte entering the blood and the analyte leaving the blood. An abnormal concentration indicates an imbalance in those processes.
- An abnormal analyte concentration in a body fluid was caused by either an initial event (e.g., pathologic, physiologic, or pharmacologic) or a physiologic response to the initial change (e.g., destruction of pancreatic β -cells leads to decreased insulin release which lead to decreased glucose utilization by cells which leads to hyperglycemia). Therefore, to understand pathogenesis, we need to know what the initial event is.
- When considering potential reasons for abnormal blood analyte concentrations, one should think of basic processes that might cause such concentrations.
 - If there is an increased analyte concentration, is it due to increased rate of entering blood (if so, how?) or a decreased rate of leaving blood (if so, how?).
 - If there is a decreased analyte concentration, is it due to decreased rate of entering blood (if so, how?), an increased rate of leaving blood (if so, how?), or destruction within the blood (if so, how?).

CLO4. Be able to identify normal and abnormal cells. A student should be able to identify cells or abnormalities in cells that are of diagnostic importance using a microscope. This would include microscopic features of cells in blood films, cavitory effusions, and aspirates from lesions in tissues (marrow, lymph nodes, & common inflammatory or neoplastic lesions).



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PUBLIC HEALTH: A GLOBAL PERSPECTIVE SYLLABUS (2 Credits)
PTHB 537 (Term 5 and 6)
Fall 2020

I. Course Faculty and Staff Information

Course Director: Dr. Rohini Roopnarine, DVM M.Phil EdD (Higher Ed.), MRCVS
Professor, Veterinary Public Health,

Office Location: Trailer Building

Tel: 444-4175 ext 3678

Email Address: rroopnarine@sgu.edu

Office Hours: By appointment

Guest Faculty: Dr. Eleni Michalopoulou,, DVM, PhD, MSc
Senior Lecturer in Veterinary Public Health and Epidemiology,
University of Liverpool, UK.

II. Course location

Online location- Sakai tools being used: Announcements, Resources, Syllabus, Lessons, Forums, Tests and Quizzes, Panopto, Zoom, email

III. Prerequisite and/or co-requisite courses

A solid background knowledge of virology, bacteriology, immunology and parasitology.

IV. Required resources

Veterinary Public Health class notes and PowerPoints, functional computer headphones, microphone and camera. Students must activate the Panopto tool within Sakai to access the recordings, and also ensure they activate the zoom tool within Sakai.

Readings provided as follows:

Animal disease Surveillance:

- Animal Disease Surveillance and Survey Systems, 2008, Ed. M. Salman, Pub. Wiley & Sons:
 - Chapter 1: Surveillance and monitoring systems for animal health programmes and disease surveys.

- Chapter 2: Application of Surveillance and Monitoring Systems in Disease Control Programs

Animal Notifiable diseases

- DEFRA and APHA: Notifiable diseases in animals:
<https://www.gov.uk/government/collections/notifiable-diseases-in-animals>

Animal Welfare

- Wotton S. (2006) 'Humane slaughter'. Chapter 5.1 in Buncic S. 'Integrated Food Safety and Veterinary Public Health'. Published 2006 by CABI, Wallingford, Oxfordshire.
- Farm Animal Welfare in Great Britain: Past, Present and Future, 2009, Farm Animal Welfare Council. Paragraphs: 1 to 17, 36 to 71, 81 to 106 and all the recommendations
[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/319292/Farm Animal Welfare in Great Britain - Past Present and Future.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/319292/Farm_Animal_Welfare_in_Great_Britain_-_Past_Present_and_Future.pdf)

Food Safety

- in Buncic S. 'Integrated Food Safety and Veterinary Public Health'. Published 2006 by CABI, Wallingford, Oxfordshire. Part I and Part II

V. Recommended resources

- Humblet, M, Vandeputte, S, Albert, A, Gosset, C, Kirschvink, N, Haubruge, E, Fecher-Bourgeois, F, Pastoret, P, & Saegerman, C 2012, 'Multidisciplinary and Evidence-based Method for Prioritizing Diseases of Food-producing Animals and Zoonoses', Emerging Infectious Diseases, 18, 4, p. e1, CINAHL Plus, EBSCOhost
- Goodchild, A, Jones, J, Clifton-Hadley, R, Watkins, G, & Sayers, A 2012, 'Geographical association between the genotype of bovine tuberculosis in found dead badgers and in cattle herds [electronic resource]', Veterinary Record Journal Of The British Veterinary Association, 170, 10, p. 259, Agricola, EBSCOhost
- APHA animal disease surveillance reports:
<https://www.gov.uk/government/collections/animal-disease-surveillance-reports>
- SAVSNET : <https://www.liverpool.ac.uk/savsnet/>
- Vet Compass : <http://www.rvc.ac.uk/vetcompass>
- OIE, Animal Health in the World: overview: <http://www.oie.int/en/animal-health-in-the-world/oie-listed-diseases-2016/>
- DEFRA guidance and codes of practice - Welfare at slaughter:
<https://www.gov.uk/government/collections/welfare-of-animals-at-the-time-of-killing>
- DEFRA guidance and codes of practice – On Farm:
<https://www.gov.uk/guidance/animal-welfare>
- DEFRA guidance and codes of practice - Welfare of pets:
<https://www.gov.uk/guidance/animal-welfare-legislation-protecting-pets>
- OIE: <http://www.oie.int/en/animal-welfare/animal-welfare-at-a-glance/>

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. In this course, all assessments are allocated a period of one week for students to complete. Hence, as has been confirmed by Ms. Andrea Blair, double time will not be allocated for completion of the assessments.
- c. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Good internet capabilities and speed, headphones, Zoom.

VIII. Course rationale

This course is designed to ensure that students meet the standards of the RCVS requirements for practicing in the United Kingdom. The course covers the veterinarians' role in regulatory medicine regarding inspection of animals for food for human consumption and reporting requirements as it pertains to identification of zoonotic diseases.

Course goals

- To prepare students to effectively carry out the public health responsibilities of veterinarians as it pertains to the requirements established by the RCVS Day One Competences for Veterinary Public Health and Food Hygiene.
- To prepare students to effectively carry out the public health responsibilities of veterinarians as it pertains to the requirements established by the European Association of Establishments for Veterinary Education (EAEVE)
- To prepare students to effectively carry out the public health responsibilities of veterinarians as it pertains to the requirements established by the World organization for Animal Health (OIE).

IX. Course Level-learning Outcomes

Upon successful completion of this course, the student will be able to...

1. Describe the principles of UK and European union legislation as they relate to the veterinarian's role in public health.
2. Describe the role of the agencies involved in Animal Health regulation in the UK and the principles of International Animal health Trade as indicated by the OIE frameworks
3. Identify the 10 principles the Veterinary Surgeon is expected to apply when preparing veterinary certificates
4. Describe the principles of risk-based assessments including risk analysis, risk monitoring, risk assessment, risk management as it relates to Food Hygiene within the UK official food controls

1. Describe the principles of the UK legislation as it pertains to Animal Welfare on the farm, during transport and at slaughter

X. Lesson Level Learning outcomes

Course delivery is through tutorials consisting of both presentations and discussion of recommended texts.

Who is Who in UK State Veterinary medicine and Public Health

At the completion of this lecture the student will be able to:

- Identify the different UK and international organisations that have a role in the design and application of Veterinary State Medicine and Public Health in the UK
- Identify the principal statutory instruments underpinning Animal Health, Animal Welfare and Food Safety legislation in the UK.
- Recognise and apply legal requirements as they apply to the veterinary profession in relation to Animal Health, Animal Welfare and Food Safety in the UK.

Animal Health Surveillance principles and UK practice and Animal Notifiable Diseases

At the completion of this lecture the student will be able to:

- Describe the principles of Animal Health Surveillance in the UK and its principal applications for companion and farm animals
- Discuss the role of international organizations and trade in setting the principles of animal health surveillance
- Identify the legal framework that underlies statutory surveillance
- Identify diseases notifiable under UK legislation and their control systems
- Identify the principles of certification for veterinary certificates

Food Safety in the UK

At the completion of this lecture the student will be able to:

- Describe the principles required to conduct risk assessment, risk monitoring, management and risk-based performance as it relates to Food Safety.
- Identify and apply principles of UK Food-Hygiene legislation, as it relates to food safety, health certification, international trade of animal products intended for human consumption, environmental contamination, human and animal health economics. Safety of food with respect to microbiological, chemical, pharmaceutical and environmental
- Identify UK specified conditions affecting the quality and safety of products of animal origin and condemnation of entry to the human food-chain (to include statutory notifiable diseases at slaughter), processing of offal and edible by-products, food chain information and assurance, GMP/GHP/HACCP risk specific issues
- Identify and describe the principles of harvesting logistics, food hygiene, food science, food chemistry and food technology and molecular diagnostics involved in the production of animal feed or animal products intended for meat for human consumption. Interpret information returned by a Food Business operator to improve production and address public health.

Animal by-products

At the completion of this lecture the student will be able to:

- Identify and describe the principles applied in the risk-based approach to the handling and treatment of animal by-products
- Identify the different risk categories and associated controls and treatment

Animal Welfare in the UK

At the completion of this lecture the student will be able to:

- Identify and discuss the principles underlying Animal Welfare application in the UK (5 freedoms)
- Identify the main provisions of UK animal Welfare legislation
- Identify and recognise the main applications of the provisions of UK Animal Welfare legislation for farm animals
- Identify and recognise the main applications of the provisions of UK Animal Welfare legislation for companion animals
- Identify and recognise the main applications of the provisions of UK Animal Welfare legislation for transport and slaughter

XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies

Program Competencies	Course Learning Objective #
A. Core Medical Knowledge	
1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.	
3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases.	
4. Explain the relationship between disease processes and clinical signs.	
5. Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.	3
6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.	3
7. Evaluate and analyze normal versus abnormal animal behavior.	4
8. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.	1

9. Apply the principles of veterinary public health for the promotion of human and animal health.	1, 2, 3, 4
10. Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.	
B. Core Professional Attributes	
1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	1
2. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.	4
3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	
4. Model lifelong continuing education and professional development.	
5. Demonstrate and model adaptability and resilience.	
6. Demonstrate and model self awareness including understanding personal limitations and willingness to seek advice.	
8. Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.	
C. Core Clinical Competencies (Skills)	
1. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.	3
7. Design and execute plans for health promotion, disease prevention, and food safety.	3
8. Demonstrate and model effective client communication and ethical conduct.	
9. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.	

XII. Course Schedule

08/09/2020, 13:00 to 14:00: Introduction
09/09/2020, 13:00 to 14:00: Food Safety, Official controls and underlying principles
11/09/2020, 13:00 to 14:00: Food Safety: Scenarios
14/09/2020, 13:00 to 14:00: Animal Health surveillance systems
15/09/2020 13:00 to 14:00: Animal Welfare on farm and at slaughter
16/09/2020, 12:00 to 14:00: Animal Health Surveillance Scenarios
18/09/2020, 12:00 to 14:00: Animal Welfare Scenarios
19/09/2020, 12:00 to 14:00: Revision

XIII. Grading and assessment policy, and grading rubrics

Grade Scale

Percentage	Letter Grade
>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Types of Assessments:

There will be a final exam for the course, which will consist of multiple-choice questions and short essay questions. The examination shall cover the material described in the lectures, PowerPoints, readings and class study exercises. The aspects of parasitology, virology and bacteriology relevant to veterinary public health that were taught during the previous terms are considered part of the exam material. Students are responsible for reviewing those notes and referring to recommended books and readings uploaded on the SAKAI network if needed. The assessment (Quiz) is to be completed and graded within the Sakai "Tests and Quizzes" tool.

Assessment	Date	Points
Quiz/Exam	24/09/2020 to 29/09/2020	20

XIV. Recommended study strategies

Active participation in turning technology sessions and study exercises are recommended to enable applicability of core concepts to veterinary practice.

XV. Instructor's expectations of the student

Students are expected to adhere to the Professionalism Policy (see XVII), and at all times demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public.

XVI. Professionalism statement

The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards for 2019/2020 [https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/..](https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/) Students are expected to be polite in responding to peers and faculty via email or through the other online communication tools. It is essential that if a student is unable to complete a mandatory assessment due to illness or other emergency, that they inform the course director in a timely fashion. Please refer to XVII below.

XVII. Attendance policy

The policy relating to class attendance is detailed in the SGU student manual <https://www.sgu.edu/studentmanual/school-of-veterinary-medicine/>. Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed

Communication Methods and Expectations

It is mandatory that students check the following communications from the Course Instructor:

Announcements

The lesson plan for the week will be announced to the class. (Instructor – class). There will be reminders about deadlines and mandatory requirements to engage with the course.

Email

Normal email communications. Replies to student inquiries. (Instructor-to-individual)

Email to the class representative to determine the need for a zoom session depending on questions students may have on the weekly lessons. (Instructor -class representative)*

ZOOM sessions - ZOOM will be used for:

Office Hours – To be determined based on email feedback from the class representative*

The ZOOM sessions are recorded and posted for students to watch later.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to appear for an examination without a valid reason (see student manual: Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

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Appendix:

N/A



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

PATHOBIOLOGY DEPARTMENT

SYLLABUS – Transboundary Animal Disease (1 credit)

PTHB539 (Selective and GVHT)

Fall 2020

I. Faculty and Staff Information

- a. Course Director:
 - i. Dr. Brian Butler, DVM, MPH, PhD, Dipl. ACVP, *Professor*
 - ii. Email: bbutler@sgu.edu
 - iii. Office Location: SVM trailer
 - iv. Office Hours: by appointment

- b. Staff members:
 - i. Ms. Cindy Edwards, Executive secretary, cedwards@sgu.edu

II. Course location

Online only for Fall 2020.

III. Prerequisite and/or co-requisite courses

Successful completion of all DVM Term 4 courses.

IV. Required resources

- a. Course materials provided in My Courses > Resources: Lecture notes, lecture slides, prescribed readings, and access to online Initial Accreditation Training (IAT).
- b. Student logins for the IAT will be provided at the beginning of the term.

V. Recommended resources

Pathologic Basis of Veterinary Disease. Zachary and McGavin. Sixth ed.

Atlas of Transboundary Animal Diseases. Fernandez and White. OIE publication. 2010.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None

VIII. Course rationale

Veterinarians play an integral role in the surveillance of animal diseases and the preservation of global health. In this course students will learn how to recognize the clinical signs and diagnostic lesions associated with the most important transboundary animal diseases as identified by the World Organization for Animal Health [French translation: Office International des Épizooties (OIE)]. Students will learn about the authoritative organizations, both in the Americas and within the relevant agencies in the United Kingdom and European Union, which coordinate surveillance systems and response mechanisms to identify and control animal disease outbreaks. A combination of seminars, small group activities, and web-based content will be utilized as teaching modalities in this course.

This course includes web-based lessons and hypothetical learning scenarios which are provided by the Emerging and Exotic Diseases of Animals (EEDA) web-based course. Completion of the web-based training modules will fulfill the Initial Accreditation Training for the USDA National Veterinary Accreditation Program. All students that successfully complete the EEDA/Initial Accreditation Training will receive a certificate of completion and will be eligible to take the USDA Orientation Program during Year 4 Clinical Training.

This selective course is particularly relevant for all veterinary students pursuing careers in large/mixed animal practice, as well as those students interested in careers in animal production, pathology, laboratory diagnostics, epidemiology, research, public health, government/military, and veterinary preventive medicine. Course material will be relevant to students of all nationalities including the USA- and UK-based students as part of the AVMA and RCVS requirements, respectively.

IX. Course goals

- a. Examine the importance of OIE-listed diseases and provide the most appropriate resources for staying current about emerging animal diseases. Determine the implications of OIE-listed diseases on animal production, animal welfare, international trade, and public health.
- b. Determine the structure, organization, and hierarchy of local, state, federal, and international organizations that contribute to animal health worldwide. Also, identify career opportunities within the veterinary profession relating to animal disease surveillance and outbreak response teams.
- c. Explain the USDA Veterinary Accreditation Program. Identify the legal and ethical responsibilities of an accredited veterinarian. Each student will fulfill the requirements for the USDA Initial Accreditation Training.

- d. Provide clinical case-based learning scenarios that will allow each student to practice how to properly make diagnoses, collect and process samples, and notify the appropriate authorities when a notifiable animal disease is suspected.
- e. Provide each group of students with an opportunity to research an important animal disease outbreak scenario. Students will give a short presentation that will demonstrate what they have learned from this historical research. Presentations will highlight clinical signs, lesions, differential diagnoses, diagnostic challenges, biosecurity, outbreak response, economic impact, and public health implications of the outbreak.

X. Course-level outcomes

Upon successful completion of this course, the student will be able to...

1. Know the implications of transboundary animal diseases (TADs) on animal production, animal welfare, international trade, and public health.
2. Identify the responsibilities of a veterinarian with regards to tracking animal movement and transport, disease surveillance, initiation of a rapid outbreak response, and preservation of public health.
3. Identify and evaluate where to find relevant up-to-date information about current events pertaining to emerging or re-emerging infections.
4. Recognize the official veterinarian who should be contacted if a notifiable disease is identified or suspected in your country.
5. Identify which animal diseases require compulsory notification by the veterinarian to the prescribed regional and national authority to mitigate disease transmission.
6. Recognize and evaluate the most used methods of livestock identification, traceability, and oversight by the relevant veterinary authority.
7. Classify, compare, and evaluate the clinical signs, clinical course, diagnostic lesions, transmission potential (including vectors), and etiologic agents associated with select TADs.
8. Recognize and compare the current global distribution of select TADs and identify where to find up-to-date information on this matter.
9. Explain and critique a historical account of an animal disease outbreak and apply knowledge and concepts covered throughout the course.

XI. Lesson-level outcomes

Please refer to the appended table for Lesson Level Outcomes (LLO) at the end of this document.

XII. Alignment of Course Learning Outcomes with Program Learning Outcomes

Please refer to the appended table for Lecture Level Outcomes (LLO) at the end of this document.

XIII. Course Schedule: Weekly Lectures and Assignments with Student CHECKLISTS

Week #	Start Date	Weekly <u>Learning Schedule</u> <i>Please use the checklists below to keep track of your progress through the EEDA online modules - Black.</i> *Live Zoom Sessions (2) – Red <i>*real-time sessions scheduled at 1:00 pm Eastern Standard Time</i>	<u>Assignment</u> <i>This course has ONE assignment (TEDA Clinical Case Scenario) with a due date of Friday, September 25th at 11:59 pm.</i> <i>Assignment may be uploaded to <u>Sakai</u> > <u>Assignments</u> anytime prior to the deadline.</i>
1	Aug 17	<p><u>Live Zoom Session – Course Intro and discussion</u></p> <p><u>Thursday, Aug 20th at 1:00 pm EST.</u></p> <p>Veterinary Accreditation Lessons:</p> <ul style="list-style-type: none"> <input type="radio"/> Introduction to Vet Accreditation <input type="radio"/> Certifications for Animal Movement <input type="radio"/> Reportable and Program Diseases 	
2	Aug 24	<p>Emerging and Exotic Diseases of Animals:</p> <ul style="list-style-type: none"> <input type="radio"/> Causes and Consequences of Transboundary and Emerging Diseases of Animals (TEDA) <input type="radio"/> Routes of Transmission 	
3	Aug 31	<p>Emerging and Exotic Diseases of Animals (continued):</p> <ul style="list-style-type: none"> <input type="radio"/> Response to a Foreign Animal Disease Outbreak (USA) <input type="radio"/> A Veterinarian’s Role in an Animal Health Emergency 	
4	Sep 7	<p>Disease Incursions:</p> <ul style="list-style-type: none"> <input type="radio"/> Intro and Learning Objectives <input type="radio"/> Highly Pathogenic Avian Influenza 	

		<input type="radio"/> Canine Influenza	
5	Sep 14	<p><u>Live Zoom Session – Progress report and discussion</u></p> <p><u>Thursday, Sep 17th at 1:00 pm EST.</u></p> <p>Disease Incursions (continued):</p> <input type="radio"/> New World Screwworm	
		<input type="radio"/> Swine Fevers	
6	Sep 21	<p>Disease Incursions (continued):</p> <input type="radio"/> Monkeypox	<p>Assignment <u>DEADLINE</u>:</p> <ul style="list-style-type: none"> • Friday, September 25th at 11:59 pm. • <i>Please upload your assignment in Sakai > Assignments as a single Word doc.</i>
		<input type="radio"/> Foot and Mouth Disease	
7	Sep 28	<p>Disease Incursions (continued):</p> <input type="radio"/> West Nile Virus	
		<input type="radio"/> Porcine Epidemic Diarrhea	
8 MIDTERMS	Oct 5	<p><i>This course does not have a midterm examination.</i></p>	
End of Course			
9	Oct 12		
10	Oct 19		
11	Oct 26		
12	Nov 2		
13	Nov 9		
14	Nov 16		
15	Nov 23		
16 FINALS	Nov 30	<p><i>This course does not have a final examination.</i></p>	
17 FINALS	Dec 7		
18 CAPPS	Dec 14		

XIV. Grading and assessment policy, and grading rubrics (*In compliance with SGU and SVM assessment guidelines.*)

All students are expected to be familiar with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. Please refer to the Student Manual for details.

- Grading scale. *Please refer to the SVM Student Manual.*
- **Assessment plan:**
 - i. Evaluation of student performance is based upon **three** components:
 - 1. Emerging and Exotic Diseases of Animals (EEDA) web-based modules**
 - a. Each module is followed by a Quiz that requires a passing score of 80% to proceed to the next module.
 - b. These courses must be completed with the deadlines in your Weekly Learning Schedule. Please use the provided checklists to keep track of your progress.
 - 2. Assignment: TEDA Clinical Case Scenario**
 - a. Each student will choose ONE of the available Scenarios from the EEDA content provided online.
 - b. Download and complete the Study Guide. Upload the completed Word Document to Sakai > Assignments.
 - c. **Deadline is Friday, Sept 25th at 11:59 pm**
 - 3. Zoom Session participation:**
 - a. Attendance and participation for the TWO scheduled real-time Zoom Sessions is required to receive participation points.
 - b. Participation will include asking and answering questions during the real-time Zoom Sessions.
 - c. If you are unable to attend, please email your Course Director (bbutler@sgu.edu) prior to the scheduled session.
- **Assessment breakdown:**

	Points
EEDA web-based modules (15)	150
Assignment: TEDA Clinical Case Scenario	25
Zoom Session attendance:	
Session 1	25
Session 2	25
Total points	225

XV. Recommended study strategies

- Know the syllabus.
- Know the learning outcomes.
- Pre-read material before Zoom Sessions and be sure to know all new vocabulary before class.
- **Learning through repetition is key for long-term retention.**
 - Pre-read material, then attend seminars, then complete modules, self-study, then group study, then final review. Create study outlines that will aid with NAVLE review in the future.

XVI. Instructor's expectations of the student

Each student is expected to complete the EEDA online modules, complete the assignment, and participate during seminars.

XVII. Professionalism statement

Please refer to SVM Student Manual.

XVIII. Attendance/Participation Policy (In compliance with SGU and SVM assessment guidelines.)

Attendance is mandatory for all sessions in this course. Any absence from class requires the necessary documentation from the Dean of Students Office. Please contact the Dean of Students Office directly of details and procedures. Any unexcused absence may lead to failure of the course at the discretion of the Course Director.

General statement for Fall 2020 Online course delivery: Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XIX. Policy regarding missing examinations and/or failure of submission of assignments

- Students who fail to attend an examination or fail to submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.
- Students who have technical issues during the examination MUST inform the Course Director (bbutler@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 866-429-8889) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.
- Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.

- a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
- b. [The Examsoft student perspective video 30mins](#)
- c. [The Examsoft/ExamID FAQ](#)
- d. Examsoft information page
- e. [The general Reminders/Guidelines](#)

XXI. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited. Students that do not respect this policy may be charged with academic dishonesty which can result in dismissal.

Appendices:

Detailed course content: Lecture Level Learning Outcomes

Course Introduction:

1. Explain the term Transboundary Animal Disease (TAD). What consequences may these diseases have on animal production practices and on the economies of nations?
2. Describe the significance of OIE-Listed diseases.
3. List the most important resources for staying current on updates about emerging diseases.
4. Become familiar with ProMed and HealthMap. Subscribe to ProMed email server and monitor emerging diseases in your home state/country/region throughout the course and report to the class.

Module 1: Introduction to Veterinary Accreditation: Rules, Responsibilities, Requirements, Rewards

1. Explain what veterinary accreditation is, including its mission and the governmental agency responsible for managing it.
2. List activities restricted to an accredited veterinarian (AV), including the importance of attention to detail in those activities and the potential consequences for failing to perform activities correctly.
3. Explain the two-category system of veterinary accreditation and identify which category of accreditation is required for a given species.
4. Describe the ethical responsibilities of an AV and the consequences for ethical lapses
5. List and/or identify the official guidelines/books/documents that govern and describe the role and responsibilities of an AV.
6. List the steps/requirements for becoming an AV and requirements for maintaining accreditation
7. Explain why a veterinarian would want to be accredited, including several benefits of being an AV.

Module 2: Certifications for Animal Movement: The Role of the Accredited Veterinarian (USA)

1. Explain the purpose of health certifications and the legal and ethical responsibilities associated with them.
2. Describe the difference between a certificate of veterinary inspection (CVI) and a health certificate.
3. When given a scenario for movement of an animal or animals (including livestock and pets), determine what is required for legal movement of the animal(s).
4. Recognize the common violations and errors made on health certifications that prevent successful movement of animals.
5. Describe the important steps in the import and export of animals and where you would find accurate information to assure the successful import or export of an animal.
6. List the agencies involved in the importation of pets and a brief description of their involvement.

Module 3: Reportable and Program Diseases: Eradication, Certification, Control, and Surveillance

1. Compare and contrast USDA Program Diseases, OIE Listed diseases, reportable diseases, foreign animal diseases, and transboundary diseases.
2. List the general characteristics of diseases that may be designated as USDA Program Diseases.
3. List the four different general types/categories of the USDA Disease Programs, and provide a brief description of each. Also provide examples of diseases in each type/category.
4. Explain what laboratories perform tests for USDA Program Diseases and how to find their contact information.
5. Find the contact information for reporting a disease occurrence to animal health officials.
6. Use content in this lesson and/or links to appropriate websites to answer questions regarding activities associated with the USDA Program Diseases.

Module 4: Causes and Consequences of Transboundary and Emerging Diseases of Animals: Role of the Veterinarian

1. Describe the veterinarian's responsibility to human health as stated in the veterinarian's oath and list ways in which a veterinarian can fulfill that responsibility.
2. Define the terms emerging, exotic, transboundary, epizootic, and zoonotic disease.
3. Describe the goal of the One Health initiative.
4. List the main functions of the World Organization for Animal Health (OIE).
5. List and briefly explain factors that impact disease emergence and reemergence.

Module 5: Routes of Transmission and the Introduction of Transboundary Animal Diseases

1. List the portals of entry by which foreign animal diseases can enter the United States, and describe ways to reduce the risk from each portal of entry.
2. Define infectious disease, contagious disease, communicable disease and infestation.
3. Give an example of a disease that is communicable but not contagious, and describe how the control of such a disease would differ from the control of a highly contagious disease.
4. Define the various routes of infectious disease transmission and explain, with examples, how an agent's route of transmission affects its introduction into a new area.
5. Define fomite, biological vector, mechanical vector and reservoir host.
6. Explain why vector-borne diseases can be particularly difficult to control.

Module 6: Response to a Foreign Animal Disease Outbreak in the United States

1. Name the primary agencies responsible for international animal health and U.S. animal health.
2. Recognize the three operational units of APHIS-Veterinary Services and the basic functions of each and important functions/agencies within them.
3. Explain who is responsible for border patrol and who is responsible for the importation of animals, briefly overview the importation process.

4. Describe the difference between an Assistant Director (AD) and a State Animal Health Official (SAHO).
5. Explain the roles of the National Veterinary Services Laboratories (NVSL), the National Animal Health Laboratory Network (NAHLN), and international reference laboratories in diagnosing an exotic disease in the United States.
6. In general, explain the important components/steps and responsible persons/agencies in handling a FAD incursion, include in your explanation recognition, reporting, response, investigation, recovery, the practitioner, FADD, EMRS, AD, SAHO, USDA APHIS, NVSL, and OIE.
7. List several activities that might be part of an animal health emergency response.

Module 7: A Veterinarian's Role in an Animal Health Emergency

1. Give an example of an animal health emergency response team a practicing veterinarian could be a part of, and describe, in general, how he/she would become part of that team.
2. Explain why veterinarians must be part of a recognized emergency response team when assisting with an animal health emergency rather than just showing up to help.
3. Diagram the basic organizational structure of the incident command system and indicate which section most veterinarians would work in.
4. List some of the most likely tasks veterinarians would be doing in an animal health emergency response resulting from: infectious disease outbreak; natural disaster; and/or man-made disaster.
5. Create an emergency response plan for your veterinary business and your home.

Fall 2020

PTHB 541: Food Hygiene and Meat Inspection

Course Pre-requisite:

- Enrollment in the Global Veterinary Health (GVH) track of the Doctor of Veterinary Medicine (DVM) Program
- Completion of the term 4 DVM course: Veterinary Public Health

Course Overview:

The aim of this course is to prepare students for the role of a veterinarian in the regulatory practices and procedures towards promoting food safety.

This course is a field based experience towards providing students with theoretical and practical knowledge and skills in food hygiene and meat inspection in an abattoir setting, a full throughput commercial poultry processing plant and a fish processing plant.

This course consists of preparatory sessions in Grenada and Trinidad to be completed after pre-requisites followed by a one week abattoir rotation at Langford abattoir at the University of Bristol, UK.

Course Director

Satesh Bidaisee

Professor of Public Health

Department of Public Health and Preventive Medicine

St. George's University

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Email: sbidaisee@sgu.edu

Office: Caribbean House, True Blue Campus.

Course Collaborators:

Dr. Eleni Michalopoulou and Dr. Austin Kirwan

Course Aims and Objectives

(Sun Aug 16, 2020 12:00 AM - Mon Nov 30, 2020 11:55 PM)

The aim of this course is to prepare students for the role of a veterinarian in the food system. Emphasis will be on the processes involved in producing safe meat products from healthy animals, but where relevant, links will be made with practice and role of the veterinarian in ensuring that animals are healthy when they are sent for slaughter and their welfare is not compromised.

Specific objectives for the course will include:

- To expose students with the processes involved in slaughtering and processing of animals
- To familiarize students with welfare aspects of the slaughtering process
- To demonstrate to students practical meat inspection

Overall, students will also be expected to develop the following skills and attributes:

Verbal communication with colleagues, written records/reports, teamwork and professional behavior, evidence of enquiry, awareness of personal limitations, responsible use of medicines, understanding public health risks, health and safety, hygiene and biosecurity awareness and the application of knowledge, practical skills and clinical reasoning (including assignments and wet labs specimen reports).

Course Description

(Sun Aug 16, 2020 12:00 AM - Mon Nov 30, 2020 11:55 PM)

This course is a field based experience towards providing students with theoretical and practical knowledge and skills in food hygiene and meat inspection in an abattoir setting, a full throughput commercial poultry processing plant and a fish processing plant. Students will be exposed to procedures, standards, regulations, food safety assurance and health and safety for the United Kingdom, United States and the Caribbean region. Students will familiarize themselves with slaughter processes of cattle, sheep and pigs at the Langford Abattoir as a one week intensive. The one week intensive will provide exposure to processes involved in slaughtering of animals as well as animal health, food safety and welfare controls that are carried out. The role of the veterinarian in relation to animal welfare and safety of food products of animal origin will be emphasized.

Course Methodology

(Sun Aug 16, 2020 12:00 AM - Mon Nov 30, 2020 11:55 PM)

This course consists of preparatory sessions in Grenada and Trinidad to be completed after pre-requisites followed by a one week abattoir rotation at Langford abattoir at the University of

Bristol, UK.

The Grenada experience will include preparatory lecture sessions and visits to the Mirabeau Abattoir to observe ante mortem, slaughter and post mortem inspections and Gouyave Fish Market to observe the processing of fish from landing to package products. The Trinidad experience will involve a visit to Arawak Farms which is a fully integrated poultry farm and processing enterprise.

Upon completion of term 6 of the DVM program, students can proceed to the week rotation at Langford abattoir is a Royal College of Veterinary Surgery (RCVS) approved clinical rotation for DVM 4th year DVM students of Bristol University and of the Royal Veterinary College, London. This rotation is offered throughout the year and SGUSVM GVH track students will make arrangements with GVH Track Coordinator to arrange their week long placement.

Course Schedule

(Sun Aug 16, 2020 12:00 AM - Mon Nov 30, 2020 11:55 PM)

A. Preparatory sessions in Grenada:

- 2 hrs of lecture:
 - Introduction to Food Hygiene and Meat Inspection
 - Principles of Ante Mortem and Post Mortem Inspection
- 2 hrs of ante mortem, slaughter and post mortem demonstration at Mirabeau Abattoir
- 1 hr of fish processing at Gouyave Fish Market

B. Preparatory session in Trinidad

- 2 hrs of lecture on the integrated farm enterprise, food safety standards and practice
- 2 hrs of poultry farm visit
- 2 hrs of poultry processing inspection
- 2 hrs of poultry product processing

C. Langford Abattoir, University of Bristol one week rotation

Monday: self study and preparation day

Materials to be studied includes principles of meat inspection, hygiene in the food chain, Hazard Analysis Critical Control Points (HACCP), parasitology, Tuberculosis in cattle, animal welfare during transport, lairage and stunning, European Regulation 854/2004 on ante mortem and post mortem inspection procedures.

Tuesday: first day of abattoir

Students will receive the workbook with the mandatory assignments for the week during the induction that day. Mostly sheep and cattle will be slaughtered on this day. At the start of the day, students will be quizzed about the materials from day 1 study. Students will also be

expected to assemble and disassemble a cash special captive bolt gun and to shoot it at least once in a removed head of a cow.

Wednesday: second day of abattoir

During this day, students will be required to carry out a structural and facilities audit of the abattoir on the basis of a pre-prepared form.

Thursday: wet lab practical and post mortem inspections

Mostly pigs will be slaughtered this day. Some sheep and cattle may be processed as well. Either on Tuesday or on Thursday students will be required to perform and observed a complete post mortem examination of a cow, sheep/goat or pig. This will be part of the student's examination.

Friday: self study, completion of assignments

Course Evaluation

(Sun Aug 16, 2020 12:00 AM - Mon Nov 30, 2020 11:55 PM)

The following components contribute equally to a passing grade (70% and above)

At Grenada Course Term

- Food Safety and Hygiene Blog Discussion Forum: 12.5%
- Ante Mortem and Post Mortem Written Assignment: 12.5%
- Report on Abattoir Field Trip: 25%
- Report on Fish Processing Field Trip: 25%
- Report on Poultry Processing Field Trip: 25%

Total: 100%

At Langford Abattoir:

- Oral exam at the start of Langford abattoir work
- Abattoir case report; a draft of this must be peer-reviewed by another student (template is available) prior to submission of final version
- A wet lab specimen report for two specimens to be chosen from post mortem room practical
- A report on a structural and facility audit of the abattoir (group task; verbal report)
- A completed reflective logsheet/assessment form and written report to be submitted

Course Resources

All resources required for this course will be provide with the Sakai Course Platform



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT of Small Animal Medicine and Surgery (SAMS)

RADIOLOGY I SYLLABUS (1 credit)

SAMS 501, TERM I

Fall 2020

I. Course Faculty and Staff Information

Course Director:

Thomas Hanson DVM, MS

Professor of Diagnostic Imaging SAMS, SVM SGU

Office Location: Cassia building, True Blue Campus, Lower floor

Email address Thanson3@sgu.edu

Office Hours: by appointment via e-mail for zoom session

Participating Faculty:

Hester McAllister, MVB, DVR, Dip ECVDI

European specialist in Veterinary Diagnostic Imaging,

Professor Diagnostic Imaging, SAMS, SVM, SGU (part time) and

University College Dublin, Ireland, (adjunct professor)

Email Address: hmcallister@sgu.edu

Administration: Ms Ruth Thornhill

SAMS, Cassia building, lower floor, True Blue Campus

Email Address: rthornhill@sgu.edu

II. Course Material (see XII. for schedules)

Lectures: Powerpoint lectures and Panopto recordings of lectures in My Courses

Labs: Powerpoint labs, self study questions , answer keys and panopto recordings of answer keys In My Courses

Examination- One quiz delivered within My courses Test and quizzes

Final examination will be delivered by *Examsoft*

III. Prerequisite and/or co-requisite courses

Co-requisite course: Veterinary Anatomy I

IV. Required reading resources:

The student is required to read the following text sections, which will be provided on SAMS 501 My Courses/ Resources: **Thrall, D.E. Textbook of Veterinary Diagnostic Radiology**, 6th Edition, Elsevier/ Saunders, 2013: **Chapter 1:** Radiation Protection and Physics of Diagnostic Radiology, pages 2 to 21.

V. Recommended resources

Students are NOT required to acquire a textbook. However we recommend the following:

Main recommended textbook:

Thrall, D.E. **Textbook of Veterinary Diagnostic Radiology**, 7th Edition, Elsevier/ Saunders 2018. Includes chapters on physics of radiology and normal radiographic anatomy of Canine, Feline and Equine species. This is a very good reference for more in-depth reading. It covers all the material that will be discussed in lectures and labs. Available at the library.

Additional recommended textbooks:

Ayers, Susie. **Small Animal Radiographic Techniques and Positioning**, Wiley& Blackwell, 2012.

Thrall, D.E. and Robertson, I.D. **Atlas of Normal Radiographic Anatomy & Anatomic Variants in the Dog and Cat**. 2nd edition, Elsevier, 2016.

Websites: These are definitively worth looking at:

Radiology website with normal radiographic anatomy of main domestic species of the University of Illinois:

http://vetmed.illinois.edu/courses/imaging_anatomy/index.html

London Royal Veterinary College website on normal radiographic anatomy:
<http://www.onlineveterinaryanatomy.net/>

VI. Special accommodation

Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs.

VIII. Course rationale

The student should at the end of the course be able to competently recognize the normal radiological anatomy of cats and dogs, know the basic principles of how the images are created and know the basics of image interpretation. Students should be familiar with the standard projections, the anatomy they show and how they are obtained. The course offers the theoretical and practical basis for learning and understanding radiological anatomy of the cat and dog. The course serves as a basis for Radiology II in Term 2 and clinical radiology in terms 5 and 6.

Lectures:-The course consists of **8 lectures available on the online video Panopto system in My Courses SAMS501- Panopto and as powerpoints available in the Resources tab of My Courses** . The first two lectures cover the basic principles of x-ray and radiographic image formation including the components of an x-ray generator and how it works and radiation safety/ protection. Basic image interpretation will be included (technique, terminology, image contrast, artefacts). The content of the first two lectures will be applied in the first lab. The subsequent lectures cover the anatomical regions of small animals that will be discussed in the labs that follow. Lectures will be on the forelimb, hindlimb and pelvis, vertebral column, the skull, thorax and abdomen in dogs and cats. Lecture schedule, times and course study plan is detailed in the appendices

Lab Classes:- These will be provided as powerpoints with a series of questions to work through as well as self-study questions. Subsequently the answer key to the lab and self study questions will be released as well as a panopto video presentation of the lab and available via My courses (see *Appendices* for release dates, suggested study schedule and contents). There are **7 lab classes dealing with the following topics:**

Physics of radiology and radiation safety, radiography and radiological anatomy of the small animal forelimb, small animal pelvis and hindlimb, small animal vertebral column, small animal skull, small animal thorax and abdomen.

Individual labs sessions are dedicated to different anatomical regions. Each lab covers one or several anatomical region(-s) and images will be supplied with questions to identify/ recognise anatomy, the projections and differences between the adult and juvenile skeleton and between species. The labs are a regular and continuous *formative assessment*.

- Students are expected to evaluate radiographs and give answers to formative questions, which will be provided in the lab ppt on My Courses. The cases/ questions will focus on the material covered in the lecture(-s) prior to the Lab session which deals with basic radiological anatomy. Emphasis will be on the use of correct radiographic and radiological terminology and identification of projections for the radiological anatomy presented.
- Students are expected to prepare for the laboratory sessions and revise the anatomy (as far as possible) and the corresponding lecture/-s, as this will make the Lab material more fruitful and the labs more effective for learning. An effort is made to harmonise the material taught with the Anatomy I course.
- Once the whole class has had a time period to complete each lab, an *answer key and panopto recording for the key* including the images and any additional explanations will be made available on 'My Courses', '2020-01-SAMS501-V-0-Radiology I', 'Resources', 'Radiology Labs' for review.
- The Lab sessions are **mandatory** and students must make sure to complete the allocated lab session.
- Work schedules and study plan for both lectures and lab sessions are appended under '**Appendices**' at the end of this Syllabus.
- Note that Lab completion does **not** incur points towards the final course grade, however unexcused negative lab completion may negatively influence the final course grade.
- Optional Zoom "Office hours" sessions will occur on Mondays with Dr. Hanson where any questions that students may have can be asked and answered.

The course should prepare the student to be competent in:

- understanding the basic principles of x-ray formation and x-ray interaction with tissues and the environment
- understanding the basic principles of image formation
- recognising common artefacts

- learning about consistent radiographic technique to ensure good quality diagnostic radiographs
- knowing how to label and identify radiographs
- knowing the standard radiographic projections that are used to visualize the discussed anatomical regions in cats and dogs in practice and be aware of the importance of correct and consistent positioning
- understanding basic principles and the radiological terminology of image interpretation
- recognising normal radiological anatomy in juvenile and adult cats and dogs and recognising specific species differences
- awareness of the health hazards of using ionizing radiation and how to minimize them

The Lectures are all available as Powerpoint pdfs on MyCourses/ Resources since beginning of term

The Panopto lecture recordings will be available on the Monday of the week the lecture is scheduled.

The Lab questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the lab is scheduled.

The self -study questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week to which the lab they refer to is scheduled.

On the Friday of each week with Labs/ self-study questions , the corresponding answers to the lab questions and self study questions will be published on MyCourses/ Resources as Powerpoint pdfs, including explanations. In addition, Labs keys for labs 1,2,3,4,5, 6, and 7 are supplied as Panopto recordings.

ZOOM OFFICE HOURS: These will be held according to the work schedule (see *Appendices*) usually on Mondays at 11am. These are OPTIONAL sessions. They are an opportunity for any questions or points of clarification, arising from the teaching material provided in the previous weeks, can be asked and clarified by Dr. Hanson.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to

- explain the basic principles of how an x-ray generator works and x-rays are generated
- explain the basic principles of how a radiograph is created
- discuss image quality, radiographic technique, sources of potential artefacts and their prevention
- list and identify the standard projections used in radiography of canine and feline anatomy and how these projections are obtained
- identify the normal radiological anatomical features and anatomical variations in the young and adult dog and cat
- apply the basics of image interpretation
- employ correct radiological terminology
- state the potential radiation hazards to personnel, patient and the public when using ionizing radiation to ensure its safe use in clinical practice

X. Lesson Level Outcomes

Lessons include the Lectures and Laboratory Sessions and together with the Course Level Outcomes are appended as a table at the end of the syllabus as part of the course schedule under *Appendices*.

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course Level Outcome (CLO)	SGU SVM Program Level Outcome (PLO)
Explain the normal radiological anatomy of the body systems of the juvenile and adult canine and feline species and variations thereof.	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
List, explain and apply the commonly used radiographic projections in dogs and cats to radiograph the body systems including axial and appendicular skeleton, skull, thorax and abdomen.	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
Explain the basic principles of X-ray and image formation in radiology (physics).	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>

<p>Discuss image quality, radiographic technique, sources of potential artefacts and their prevention</p>	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
<p>Integrate, explain and apply the principles of radiation safety and awareness of the risks of the medical use of ionizing radiation to the patient, staff, the public and the environment.</p>	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p>
<p>Demonstrate proficiency in the correct use of medical terminology when verbally describing and reporting diagnostic radiographic studies of cats and dogs.</p>	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals</p> <p>PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>

XII. Course Schedule

Appended under ***Appendices***.

XIII. Grading and assessment policy

Types of assessment: There will be 1 formative quiz during the course available in My Courses; Test and quizzes tab . The examination will consist of MC question type questions and a number of the questions will include images. It will account for 11% of the overall points. The final examination will be cumulative and cover course material since the quiz and will account for 91% of the overall points. Resit/ Make-up and Completion exams may include question types other than MC. Students need to be familiar with the use of the test and quizzes software in My Courses and Examsoft prior to the examinations. A 'practice examination' can be downloaded in ExamSoft to practice image manipulation.

Examination material will be based on all of the information provided on *My Courses*, in lectures and radiology labs including lecture notes, lecture and lab Powerpoint pdfs, panopto recordings, self-study questions and any additional material as indicated on *My Courses*. Exam- type questions will be supplied to become familiar with the type of questions asked and no breakdown of the questions prior to the exam will be provided. An effort is made to communicate Exam details prior to the examinations. The only time when questions can be viewed is during the exam. *There will be no detailed breakdown of questions published prior to the exam quizzes.*

In all exams, a maximum of 1 point is awarded per question answered correctly. Questions may be complex and correct answers must be given to obtain the point.

If there are queries regarding exam content after the exam, these should be submitted in writing via the class representative(s) to the course director/ instructors. The content of such queries must be worded professionally and reviewed and edited by the class representative prior to submission.

The SGU SVM grading

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

scale applies:

Examination details: SAMS 501, Radiology I

Examination/quizzes

<u>Examination</u> <u>Test/quiz</u>	<u>Date</u>	<u>Number of</u> MCQs:	<u>Maximum</u> <u>points:</u>	<u>Lecture content:</u>	<u>Lab content</u>
Quiz 1 Via My courses Test and Quizzes tab	Week 5 Week of September 14th	Total 10	5 points 0.5 pts per question	Lectures 1 and 2	Lab 1
: <u>Final</u> <u>Examssoft</u>	December 2nd	<u>Total 40</u>	<u>40</u> <u>questions</u> <u>@ 1 pt</u>	<u>Lectures 3-8</u> <u>inclusive</u>	Labs 2-7 inclusive
<u>Total</u>		<u>Total 45</u> <u>points</u>			

Grading criteria: Grading is objective. There is a maximum of one point per correct answer, i.e. the number of total points making up the final course grade is the sum of correct answers achieved in the final exam and test quiz.

Note that Lab attendance does **not** incur points towards the final course grade, however unexcused negative lab attendance may negatively influence the final course grade

Student feedback for outcomes assessment evaluation

Students are encouraged to leave constructive comments, suggestions and criticism, at the end of the course, for faculty and instructors to review and consider. Professionalism is expected.

XIV Recommended study strategies

Students should read all the material provided in lectures and labs. A weekly study schedule is provided in the appendices and it is important to work to this schedule in order to ensure the material each week is covered in a steady and efficient manner. When studying for examinations, all the material relating to that exam that is provided on *MyCourses* must be reviewed. Exam contents are summarised under XIII and will be announced prior to the exam. Since DI works with images, the images supplied in the lecture and lab material are good examples of the anatomy discussed and must be recognized. Reviewing images in the listed additional sources will increase confidence in recognition of the radiological appearance of normal anatomy. If the visual aspect of DI is a challenge, drawing the regions/ projections may be of help to be able to visualise them. Reviewing 3D Anatomy specimens or models may help with understanding the three-dimensional aspects of radiology. Students are requested to ask for support (request office hours, make use of DOS) in a timely and professional manner, i.e. prior to the exam, so support can be given and potential problems can hopefully be solved.

XV. Instructor's expectations of the student

The student should at the end of the course be able to competently recognize the radiological anatomy of the dogs and cats including some examples/ comparisons of these species, know the basic principles of how the images are created, the standard projections for each anatomical region and the radiographic appearance of the anatomy in the various projections, know the basics of image interpretation and follow good radiographic practice (including technique and radiation safety principles). Students are expected to read the supplied documentation. Revision of corresponding material from Anatomy I prior to the lectures and revision of the lecture prior to radiology labs is recommended. The material is provided on *My Courses*. The radiology labs cover the preceding lecture material unless the timetable does not allow it, and students are expected to be familiar with the material taught in lectures, so it can be applied during the lab classes.

XVI. Professionalism statement

Students are expected to behave professionally, courteous and respectful towards their peers, staff and faculty at all times. Cell phones should be turned off or set on silent during zoom sessions and office hours. The use of computers, tablets or phones for different purposes other than for following the lecture or Lab being given (i.e. Twitter, facebook, blogs et al) is unprofessional and should not occur. Personal video and audio

recording of lectures or labs are not allowed, *panopto* recordings are created for each lecture and uploaded on MyCourses.

XVII. Attendance policy

Students are requested to refer to the Student manual (available on the Carenage website):

Students are expected to virtually attend, engage with online content, participate in and complete all classes for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. (please refer to student handbook).

Students are requested to refer to the Student manual (available on the Carenage website)-for description of attendance policy and **reporting of absences**.

Lecture participation policy: Students are expected to listen and complete all lectures.

Laboratory session participation policy: Radiology I: If for some reason (for example a medical problem) a student cannot complete the allocated Lab session, then the student must contact Dr. Hanson (Thanson3@sgu.edu) in advance to advise him that a lab will not be completed at the assigned time.

Note that Lab completion does **not** incur points towards the final course grade, however unexcused non-completion from lab sessions may negatively influence the final course grade.

XVIII. Policy regarding missing examinations

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination **MUST** inform the **Course Director Dr Hanson** email address Thanson3@sgu.edu and IT

(tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), **AND Dean of Students** (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School. ***Carenage/ Medical Excuse Submissions/ SVM Examinations*** will be accepted. If you don't think you are healthy enough to take an exam, please notify the Dean of students **PRIOR** to the time of the exam. Excuses that are issued **after** the examination has started/ been given will not be accepted. If an extended absence is required, a **leave of absence** form from the Dean of Students office must be submitted. University protocol limits you to 2 medical excuses per year only, and then you need a medical leave of absence. Students who fail to appear for an examination without a valid reason (see student manual: SGU SVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. ExamSoft policy/Test and quizzes policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examssoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to contact the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) (if on island) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

On Exam Day

1. All examinees scheduled to sit a computer-based exam are required to bring their laptops and all necessary accessories, (mouse, Ethernet cable and power cord/battery charger), for use on exam day.
2. An examinee who is experiencing a **computer problem** should **notify the course director** Dr Hanson immediately:- email address Thanson3@sgu.edu AND IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND the Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.
3. Examinees must reset the clock on their laptops to the correct local time and time
- 4. No communication of any kind is permitted between examinees once the exam has started**
- ~~5.~~ Examinees are not allowed to use a telephone or other communication device at any point during the examination.
6. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with the exam’s security features will be subject to academic disciplinary action.
7. Permitted Items—only the following items will be allowed into the exam venue:
 - Laptop and accessories
 - SGU ID
 - Completely clear (see-through) bottle of plain water

- Items specified by Course Director or permitted by Dean of Students (DOS) office

If there are queries regarding exam content after the exam, these should be submitted in writing via the class representative(s) to the course director/ instructors. The content of any such query must be worded professionally and if necessary edited by the class representative prior to submission. Students are encouraged to not send questions that may be answered by reviewing the teaching material provided.

Note: For Diagnostic imaging examinations students should familiarize themselves with the use of image manipulation such as magnifying images and panning (using the cursor to 'move' the image which is larger than the actual display) the images, which will be needed to assess images, especially when small screens are used.

XX. Copyright policy (if applicable):

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited. This includes publication on publica pages on the internet, e.g. *facebook*.

Appendices:

Appended: XXI and XXII: Lecture and Lab Course Schedule and Learning Outcomes

XXI. Lecture schedule:

Date Time	Lecture content	Lecture learning outcome
Week 2 Week of August 24th	Lecture 1: Physics of radiology: X-ray generator, interaction of the x-ray with patient/ matter, image formation and	1 explain how an x-ray generator works and identify the individual parts and their function 2 explain the generation of x-rays 3 explain the principle of x-ray interaction with tissue/ matter 4 explain scatter formation, prevention and the function and use of grids 5 explain the properties of radiographic films/ detectors and screens and how a radiograph is created

	interpretation, image contrast	6 explain radiographic image quality: film blackening, image contrast
Week 3 Week of August 31st	Lecture 2: Artefacts and Radiation safety: Time, shielding, technique, monitoring, methods of radiation protection (ALARA)	1 Explain definition, causes, examples and prevention of typical artefacts 2 Explain causes, advantages and disadvantages of image distortion and magnification 3 explain the sources of radiation hazard in using X-rays in veterinary medicine and list how radiation hazards can be controlled/ minimised 4 list which areas of the body are sensitive to radiation 5 recommend standard radiation safety protocols when undertaking radiography of animals
Week 4 No lecture Week of September 7th	LAB 1	
Week 5 Week of September 14th	Quiz	Quiz is based on Lectures 1, and 2, AND lab 1 10 MCQ questions with/without images Total points 5
Week 6 Week of September 21st	Lecture 3: Radiographic technique and anatomy of the canine and feline forelimb	1 list and identify the standard projections for radiographing the forelimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the forelimb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal forelimb 4 demonstrate an understanding of principles of radiation safety
Week 7 Week of September 28th	Lecture 4: Radiographic technique and anatomy of the canine and feline hindlimb and pelvis	1 list and identify the standard projections for radio-graphing the hindlimb and pelvis in dogs and cats 2 identify and interpret the normal and comparative radio-graphic anatomy of the hindlimb and pelvis in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal hindlimb and pelvis 4 demonstrate an understanding of principles of radiation safety
Week 9 Week of October 12th	Lecture 5: Radiographic technique and anatomy of the canine and feline vertebral column	1 list and identify the standard projections for radio-graphing the vertebral column in dogs and cats 2 identify and interpret the normal and comparative radio-graphic anatomy of the vertebral column in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal vertebral column 4 demonstrate an understanding of principles of radiation safety
Week 10	Lecture 6:	1 list and identify the standard projections for radiographing the thorax in dogs and cats

Week of October 19th	Radiographic technique and anatomy of the canine and feline thorax	2 identify and interpret the normal and comparative radiographic anatomy of the thorax in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal thorax 4 demonstrate an understanding of principles of radiation safety
Week 11 Week of October 26th	Lecture 7: Radiographic technique and anatomy of the canine and feline abdomen	1 list and identify the standard projections for radiographing the abdomen in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the abdomen in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal abdomen 4 demonstrate an understanding of principles of radiation safety
Week 12 Week of November 2nd	Lecture 8: Radiographic technique and anatomy of the canine and feline skull	1 list and identify the standard projections for radiographing the skull in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the skull in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal skull 4 demonstrate an understanding of principles of radiation safety
Weeks 13-15 Weeks of November 9th - 23rd	Revision for final exam	Revise lectures 3,4,5,6,7 and 8 AND labs 2,3,4,5,6 and 7
Week 16	Final exam	December 2nd
Quiz 1 -Week of September 14th – week 5 Final December 2nd week 16		

XXII. Radiology Labs:

Week number	Date	Lab No & content	Lab learning outcome
Week 4	Week of September 7th	1 Physics of radiology/ Artefacts/ Radiation safety/ Radiographic technique	1 explain how an x-ray generator works and identify the individual parts and their function 2 explain the generation of x-rays 3 explain scatter formation, prevention and the function and use of grids 4 explain radiographic image quality: film blackening, image contrast

			<p>5 identify examples of artefacts and their prevention</p> <p>6 explain causes, advantages and disadvantages of image distortion and magnification</p> <p>7 explain the sources of radiation hazards in using X-rays in veterinary medicine and list how radiation hazards can be controlled</p>
<p>Week 5</p> <p>Week of September 14th</p>	Quiz		Revise lectures 1 and 2 and Lab 1
<p>Week 6</p>	Week of September 21st	<p style="text-align: center;">2</p> <p>Forelimb</p> <p>Radiographic technique and anatomy of the canine and feline forelimb</p>	<p>1 list and identify the standard projections for radiographing the forelimb in dogs and cats</p> <p>2 identify and interpret the normal and comparative radiographic anatomy of the forelimb in dogs and cats</p> <p>3 demonstrate an understanding of radiographic technique relevant to the small animal forelimb</p> <p>4 demonstrate an understanding of principles of radiation safety</p>
<p>Week 7</p>	Week of September 28th	<p style="text-align: center;">3</p> <p>Pelvis and Hindlimb</p> <p>Radiographic technique and anatomy of the canine and feline fore- and hindlimb</p>	<p>1 list and identify the standard projections for radiographing the hindlimb in dogs and cats</p> <p>2 identify and interpret the normal and comparative radiographic anatomy of the hindlimb in dogs and cats</p> <p>3 demonstrate an understanding of radiographic technique relevant to the small animal hindlimb</p> <p>4 demonstrate an understanding of principles of radiation safety</p>
<p>Week 9</p>	Week of October 12th	<p style="text-align: center;">4</p> <p>Vertebral Column</p> <p>Radiographic technique and anatomy of the canine and feline vertebral column</p>	<p>1 list and identify the standard projections for radiographing the hindlimb in dogs and cats</p> <p>2 identify and interpret the normal and comparative radiographic anatomy of the vertebral column in dogs and cats; recognize features of the juvenile vertebral column</p> <p>3 demonstrate an understanding of radiographic technique relevant to the small animal vertebral column</p>

			4 demonstrate an understanding of principles of radiation safety
Week 10	Week of October 19th	5 Thorax Radiographic technique and anatomy of the canine and feline thorax	1 list and identify the standard projections for radiographing the thorax in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the thorax in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal thorax 4 demonstrate an understanding of principles of radiation safety
Week 11	Week of October 26th	6 Abdomen Radiographic technique and anatomy of the canine and feline abdomen	1 list and identify the standard projections for radiographing the abdomen in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the abdomen in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal abdomen 4 demonstrate an understanding of principles of radiation safety
Week 12	Week of November 2nd	7 Skull Radiographic technique and anatomy of the canine and feline skull	1 list and identify the standard projections for radiographing the skull in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the skull in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal skull 4 demonstrate an understanding of principles of radiation safety
Weeks 13-15	Weeks of November 9th-23rd	Revise lectures 3,4 5,6,7 and 8 AND labs 2,3 4,5,6 and 7	
Week 16	December 2nd	Final	

Point Allocation SAMs 501:	45
Total points = 45	Explanation of point allocation:
<i>Total points breakdown:</i>	
1Quiz:	Lectures 1 and 2 are both on physics and content is covered in Lab 1, 9 Questions 0.5 pts each
Final	Final is on 6 lectures and 6 labs =40 questions @ 1 point each and 1 question @0.5 pts

XXIII

SVM Course Code: **SAMS 501**

Course Director: Dr T Hanson

Fall 2020 Online Student Coursework schedule

Course Lectures/Labs:	Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Week 2 During the week: August 24th Lecture 1 Physics of radiology: X-ray generator, interaction of the x-ray with patient/ matter, image formation and interpretation, image contrast	Lecture 1 on MyCourses/ Resources	During the week: August 24th ZOOM introduction to the course Monday August 24 th at 11.00am Dr. Hanson 1. Review lecture 1 powerpoint 2. Listen to Lecture 1 panopto recording 3. Read Thrall chapter	N/A

<p>Week 3 During the week: August 31st</p> <p>Lecture 2: Artefacts and Radiation safety: Time, shielding, technique, monitoring, methods of radiation protection (ALARA)</p>	<p>Lecture 2 on MyCourses/ Resources</p>	<p>During the week: August 31st</p> <p>ZOOM office hours/ Q & A Monday August 31st at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review lecture 2 powerpoint 2. Listen to lecture 2 panopto 3. Read Thrall chapter 	<p>N/A</p>
<p>Week 4 During the week: September 7th</p> <p>Lab 1 Physics of radiology/ Artefacts/ Radiation safety/ Radiographic technique</p>	<p>Lab 1 Physics and radiation safety questions on MyCourses/ Resources</p> <p>Self study questions for Lab 1 on MyCourses/ Resources</p> <p>Key for Lab 1 questions on MyCourses/ Resources and Panopto</p> <p>Key for Lab 1 self study questions on MyCourses/ Resources</p>	<p>During the week: September 7th</p> <p>ZOOM office hours/ Q & A Monday September 7th at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Work through Lab 1 questions 2. Work through Lab 1 self study questions to Lab 1 <p>On Friday check Lab 1 answer key and Panopto recording on My Courses/panopto</p> <p>On Friday Check answer key of the Lab 1 self study questions on MyCourses/ Resources</p>	<p>Prepare for Quiz 1 Week 5</p> <p>Lectures 1 and 2 and Lab 1</p>
<p>Week 5 During the week: September 14th</p> <p>QUIZ</p>	<p>Quiz- 10 questions= 5 points</p>	<p>During the week: September 14th</p> <p>ZOOM office hours/ Q & A Monday September 14th at 11.00 am Dr. Hanson (optional)</p>	<p>Quiz</p> <p>Lectures 1 and 2 and Lab 1</p>

<p>Week 6 During the week: September 21st Lecture 3 and Lab 2:</p> <p>Radiographic technique and anatomy of the canine and feline forelimb</p>	<p>Lecture 3 canine and feline forelimb on MyCourses/ Resources</p> <p>Lab 2 Canine and feline forelimb on MyCourses/ Resources</p> <p>Self study questions for Lab 2 on MyCourses/ Resources</p> <p>Key for Lab 2 questions on MyCourses/ Resources and Panopto</p> <p>Key for Lab 2 self study questions on MyCourses/ Resources</p>	<p>During the week: September 21st</p> <p>ZOOM office hours/ Q & A Monday September 21st at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review Lecture 3 powerpoint 2. Listen to lecture 3 panopto recording 3. Work through Lab 2 questions 4. Work through Lab 2 self study questions <p>On Friday check Lab 2 answer answer key and Panopto recording on My Courses/panopto</p> <p>On Friday check answer key of the self study questions on MyCourses/ Resources</p>	<p>N/A</p>
<p>Week 7 During the week: September 28th Lecture 4 and lab 3 :</p> <p>Radiographic technique and anatomy of the canine and feline hindlimb and pelvis</p>	<p>Lecture 4 Canine and forelimb hindlimb and pelvis on MyCourses/ Resources</p> <p>Lab 3 Canine and feline hindlimb and pelvis on MyCourses/ Resources</p> <p>Self study questions for Lab 3 on MyCourses/ Resources</p>	<p>During the week: September 28th</p> <p>ZOOM office hours/ Q & A Monday September 28th at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review Lecture 4 powerpoint 2. Listen to lecture 4 panopto recording 3. Work through Lab 3 questions 4. Work through Lab 3 self study questions 	<p>N/A</p>

	<p>Key for Lab 3 questions on MyCourses/ Resources and panopto</p> <p>Key for Lab 3 self study questions on My Courses/Resources</p>	<p>On Friday check Lab 3 answer key and Panopto recording on My Courses/panopto</p> <p>On Friday check answer key of the Lab 3 self study questions on MyCourses/ Resources</p>	
<p>Week 9 During the week: October 12th</p> <p>Lecture 5 and lab 4 Radiographic technique and anatomy of the Canine and feline vertebral column</p>	<p>Lecture 5 Vertebral column on MyCourses/ Resources</p> <p>Lab 4 : Canine and feline vertebral column on MyCourses/ Resources</p> <p>Self-study questions to Lab 4 on MyCourses/ Resources</p> <p>Key for Lab 4 on MyCourses/ Resources and Panopto</p> <p>Key for Lab 4 self study questions on My Courses/Resources</p>	<p>During the week: October 12th</p> <p>ZOOM office hours/ Q & A Monday October 12th at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review Lecture 5 Powerpoint pdf 2. listen to lecture 5 Panopto recording 3. Work through Lab 4 questions 4. Work through the self-study questions to Lab 4 <p>On Friday check answer key and Panopto recording on My Courses/panopto</p> <p>On Friday check answer key of the self study questions on MyCourses/ Resources</p>	N/A
<p>Week 10 During the week: October 19th</p> <p>Lecture 6 and lab 5</p>	<p>Lecture 6 Canine and feline thorax on MyCourses/ Resources</p>	<p>During the week: October 19th</p> <p>ZOOM office hours/ Q & A Monday October 19th at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1 Review Lecture 6 Powerpoint pdf 	NA

<p>Radiographic technique and anatomy of the Canine and feline thorax</p>	<p>Lab 5 Questions on MyCourses/ Resources</p> <p>Self-study questions for Lab 5 on MyCourses/ Resources</p> <p>Answer Keys to Lab 5 questions on MyCourses/ Resources and Panopto</p> <p>Answer key to lab 5 self study questions on My Courses/Resources</p>	<p>2 listen to lecture 6 Panopto recording</p> <p>3 Work through Lab 5 questions</p> <p>4 Work through the self-study questions to Lab 5</p> <p>On Friday check answer key and Panopto recording on My Courses/panopto</p> <p>Check answer key of the Lab 5 self study questions on MyCourses/ Resources</p>	
<p>Week 11 During the week: October 26th</p> <p>Lecture 7 and lab 6</p> <p>Radiographic technique and anatomy of the Canine and feline abdomen</p>	<p>Lecture 7 Canine and feline Abdomen: Powerpoint pdf on MyCourses/ Resources</p> <p>Lab 6 Questions on MyCourses/ Resources</p> <p>Self-study questions for Lab 6 on MyCourses/ Resources</p> <p>Answer Keys to Lab 6 and panopto recording on MyCourses/ Resources</p>	<p>During the week: October 26th</p> <p>ZOOM office hours/ Q & A Monday October 26th at 11.00am Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review Lecture 7 Powerpoint pdf 2. listen to the Panopto recording Lecture 7 3. Work through Lab 6 4. Work through the self-study questions to Lab 6 <p>On Friday check answer key and Panopto recording on My Courses/panopto</p> <p>On Friday check answer key of the self study questions on MyCourses/ Resources</p>	<p>N/A</p>

	Answer key to self study questions on My Courses/Resources		
Week 12 Week of November 2nd-8th Lecture 8 Radiographic technique and anatomy of the Canine and feline skull	Lecture 8 Canine and feline Skull Powerpoint pdf on MyCourses/Resources Lab 7 Questions on MyCourses/Resources Self-study questions for Lab 7 on MyCourses/Resources Answer Keys to Lab 7 and self-study questions on MyCourses/Resources Panopto recording of answer key for lab questions questions	During the week: November 2nd ZOOM office hours/ Q & A Monday November 7 th at 11.00am Dr. Hanson (optional) 1. Review Lecture 8 Powerpoint pdf 2. listen to the Panopto recording of lecture 8 3. Work through Lab 7 4. Work through the self-study questions to Lab 7 On Friday check Lab 7 and self study answer keys on My Courses/resources O Friday check Panopto recording of the Lab 7 questions on MyCourses/ Panopto	NA
Week 13-15 During the weeks: November 9th TO November 23rd Revision for FINAL EXAM	Review lectures 3-8 Review Labs 2-7	During the weeks: November 9th TO November 23rd ZOOM office hours/ Q & A Mondays at 11.00am Dr. Hanson (optional) Study all material related to Lectures 3,4, 5, 6,7 and 8 AND Labs 3,4,5,6,7 for the FINAL exam	

Week 16 DECEMBER 2ND Final EXAM	Final EXAM Lectures 3 to 8 Labs 2 to 7 40 questions, MCQ, / 40 points	During the week: December 2nd	Final Lectures 3-8 Labs 2-7 40 points
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Dear Students of Radiology I:

The Lectures are all available as Powerpoint pdfs on MyCourses/ Resources since beginning of term.

The Panopto recordings will be available on the Monday of the week the lecture is scheduled.

The Lab questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the lab is scheduled.

The self -study questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the lab they refer to is scheduled.

On the Friday of each week with Labs/ self-study questions , the corresponding answers will be published on MyCourses/ Resources as Powerpoint pdfs, including explanations as you are accustomed to from previous labs.

ZOOM OFFICE HOURS/QUESTION AND ANSWER SESSIONS ARE OPTIONAL AND WILL BE HOSTED BY THE COURSE DIRECTOR Dr. HANSON USUALLY ON MONDAYS AT 11.00am

Assessment Summary:

Point Allocation for course:	Point Allocation On line
Total lectures: 8 Total Radiology Labs: 7	Total points = 45 <i>Total points breakdown:</i> Quiz- 5 points Final exam 40 points- Cumulative

Course content remains unchanged from previous semester courses. Facilitating learning by supplying additional self-study questions.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT

RADIOLOGY II SYLLABUS (1 credit)

SAMS 502, TERM II

Fall 2020

I. Course Faculty and Staff Information

Course Director: Thomas Hanson DVM, MS

Professor Diagnostic Imaging, SAMS, SVM, SGU

Email Address: thanson3@sgu.edu

Office Location: Cassia building, True Blue Campus, Lower floor

Office Hours: by appointment via e-mail for zoom session

Participating Faculty: - off site fall 2020

Hester McAllister, MVB, DVR, Dip ECVDI MRCVS

European specialist in Veterinary Diagnostic Imaging,

Professor Diagnostic Imaging, SAMS, SVM, SGU (part time) and in

University College Dublin, Ireland, (adjunct professor)

Email Address: hmcallister@sgu.edu

Administration:

Ms Ruth Thornhill

SAMS, Cassia building, lower floor, True Blue Campus

Email Address: rthornhill@sgu.edu

II. Course Location-Online (see XII. for schedules)

Lectures: Provided in My Courses as powerpoints and panopto recordings

Labs, lab keys and self study questions are provided in My Courses as powerpoints and panopto recordings

Examination- One quiz delivered within My courses Test and quizzes

Final examination will be delivered by examsoft

III. Prerequisite and/or co-requisite courses

Prerequisites: Radiology I and Veterinary Anatomy I

Co-requisite: Veterinary Anatomy II

Physics of radiology as taught in Term I

IV. Required reading resources (texts, journal articles, course notes, laptop specs, etc.)

Radiology I course notes

Anatomy I and II for reference

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

Students are NOT required to acquire a textbook, the recommended textbooks are listed below:
Main recommended textbook: Thrall, D.E. **Textbook of Veterinary Diagnostic Radiology**, 7th Edition, Elsevier/ Saunders 2018. Includes chapters on physics of radiology and normal radiographic anatomy of Canine, Feline and Equine species. This is a very good reference for more in-depth reading. It covers all the material that will be discussed in lectures and labs.

Available at the library.

Additional recommended textbooks:

Butler, J.A., Colles, C.M., Dyson, S.J., Kold, S.J. and Poulos, P.W., **Clinical Radiology of the Horse**, 4th Edition. Wiley-Blackwell 2017. Kindle edition available.

'Handbook of Equine Radiography' by Martin Weaver and Safia Barakzai, Saunders and Elsevier, 2010

Websites: These are definitively worth looking at:

Radiology website with normal radiographic anatomy of main domestic species of the University of Illinois: http://vetmed.illinois.edu/courses/imaging_anatomy/index.html

London Royal Veterinary College website on normal radiographic anatomy:

<http://www.onlineveterinarvanatomy.net/>

VI. Special accommodation

Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs.

VIII. Course rationale

The student should at the end of the course be able to competently recognize the normal radiological anatomy of equines and bovines. The basic principles of how the image formation and interpretation are reapplied building on Term 1/ SAMS 501 knowledge. Students should be familiar with the standard projections, the anatomy they show and how they are obtained. The course offers the theoretical and practical basis for learning and understanding radiological anatomy of the equine and bovine species. The course serves as a basis for clinical radiology taught in terms 5 and 6.

Lectures are scheduled ahead of the lab classes. **available on the online video Panopto system in My Courses:-** (see *Appendices* for release dates, suggested study schedule and contents). The course contains **7 lectures**. Lectures will be provided on normal bovine and equine radiological anatomy, standard projections, examples of the juvenile and adult skeleton of both species and species differences. The lectures will cover the distal and proximal fore and hindlimbs, thorax, vertebral column and the skull. One lecture is dedicated to basic radiological technique and anatomy of the avian species.

Lab Classes are provided according to the schedule. **These will be provided as Powerpoints with a series of questions to work through as well as self study questions. Subsequently the answer key to the lab and self study questions will be released as well as a panopto video presentation of the lab and self study questions and available via My courses** (see *Appendices* for release dates, suggested study schedule and contents). The individual labs are dedicated to different anatomical regions as listed in the schedule. There will be **6 Labs**, the initial lab focuses on the bovine and the following 5 labs are dedicated to the equine species, with reference to the bovine/ other species where applicable. Each lab covers one or several anatomical region(-s) and questions with images will be supplied to identify anatomy, the projections and compare between species. Some examples of the juvenile skeleton will be provided. The labs are a continuous *formative* assessment throughout this course.

- Students will be expected to evaluate radiographs and give answers to formative questions which will be provided in writing on the slide ppt on My Courses.. The cases/ questions will focus on the material covered in the lecture(-s) prior to the Lab session. The radiological

anatomy will be assessed, and emphasis will be on the use of correct terminology and identification of projections for the radiological anatomy presented.

- Students are expected to prepare for the laboratory sessions in advance and revise the anatomy (as far as possible) and the corresponding radiology lecture material, as this will make the labs more effective with regards to learning. An effort is made to harmonize the material taught with the Anatomy II course.
- Once the whole class has had a time period to complete each lab, an *answer key and panopto recording for the key* including the images and any additional explanations will be made available on 'My Courses', '2020-08-SAMS502-V-0- Radiology II', 'Resources', 'Radiology Labs' for review.
- The Lab sessions are **mandatory** and students must make sure to complete the allocated lab session.
- Work schedules and study plan for both lectures and lab sessions are appended under '*Appendices*' at the end of this Syllabus.
- Note that Lab completion does **not** incur points towards the final course grade, however unexcused negative lab completion may negatively influence the final course grade.
- Optional Zoom "Office hours" sessions will occur on Mondays with Dr. Hanson where any questions that students may have can be asked and answered.

The Lectures are all available as Powerpoint pdfs on MyCourses/ Resources since beginning of term.

The Panopto recordings will be available on the Monday of the week the lecture is scheduled.

The Lab questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the lab is scheduled.

The self -study questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the lab they refer to is scheduled.

On the Friday of each week with Labs/ self-study questions , the corresponding answers will be published on MyCourses/ Resources as Powerpoint pdfs, including explanations. In addition, Labs 1,2,3,4,5, 6 and 7 are supplied as Panopto recordings.

ZOOM OFFICE HOURS: These will be held according to the work schedule (see *Appendices*) usually on Mondays at 11am. These are OPTIONAL sessions. They are an opportunity for any questions or points of clarification, arising from the teaching material provided in the previous weeks, can be asked and clarified by Dr. Hanson.

IX. Course level outcomes

Upon successful completion of this course, the student will be able to...

- Have knowledge on the basic principles of radiographic technique, sources of potential artefacts and their prevention as taught in Radiology I
- Recognise the standard *projections* used in equine and bovine radiology
- Recognise the function of the different projections, i.e. what anatomical structures are highlighted in what projection
- Identify and explain the normal radiological anatomy of the skeletal and thoracic systems of the equine, bovine and body systems of avian species, juvenile specimens and variations thereof
- Explain how to obtain and label equine and bovine radiographs correctly
- Apply the correct radiographic and radiological terms used in describing radiographs
- Acquire skills in verbally describing radiographs
- Be aware of the potential radiation hazards to personnel, patients and the public when performing equine/bovine and avian radiographs in order to ensure its safe use in clinical practice

X. Lesson level outcomes

Lessons include the lectures and Laboratory Sessions and together with the Course Level Outcomes are appended as a table at the end of the syllabus as part of the course schedule under *Appendices*.

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course level outcome (CLO)	SVM program level outcome (PLO)
Identify and explain the normal radiological anatomy of the skeletal system and thorax of the juvenile and adult equine and bovine and the body systems of the avian species and variations thereof.	PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.
Identify, list and explain the commonly used radiographic projections in equine, bovine and avian species to radiograph the axial and appendicular skeleton, skull and thorax of equine and bovine species and all the body systems of the avian species	PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.

<p>Apply the principles of image interpretation and discuss image quality, radiographic technique, sources of potential artefacts and their prevention.</p>	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
<p>Integrate and explain the principles of radiation safety and awareness of the risks of the use of ionizing radiation in veterinary medicine to the patient, staff, the public and the environment.</p>	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>
<p>Apply imaging terminology correctly when writing or verbally describing and reporting diagnostic radiographic studies of horses, cattle and birds.</p>	<p>PLO 1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine PLO 12 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p>

XII. Course Schedule

Appended as a table under ‘*Appendices*’.

XIII. Grading and assessment policy

Types of assessment: There will one quizzes during the course and will be available in My Courses: Tests and quizzes tab. The examination will consist of MC question type questions and a considerable part of the questions will include images. It will account for 9% of the overall points. The final examination will be available via Examssoft and will be cumulative and cover course

material since the quiz and will account for 91% of the overall points. Students need to be familiar with the use of the test and quizzes software and Examsoft prior to the examinations. Make-up and Completion exams may include question types other than MC. Students need to be familiar with the use of the test and quizzes in My Courses and the ExamSoft/ *Exemplify* software. A 'practice examination' can be downloaded in ExamSoft to practice image manipulation.

Examination material will be all information provided on My Courses including lectures, radiology labs, self study questions, lab and self study keys and panopto recordings and all the material made available for Radiology II/ SAMS 502 on 'My Courses'.

Exam- type questions will be supplied to become familiar with the type of questions asked and *no breakdown of the questions prior to the exam will be provided*. The exam is sequestered. The only time when questions can be viewed is during the exam.

In all exams, a maximum of 1 point is awarded per question answered correctly. Questions may be complex and correct answers must be given to obtain the point.

If there are queries regarding exam content after the exam, these should be submitted in writing via the class representative(s) to the course director/ instructors. The content of such queries must be worded professionally and reviewed and edited by the class representative prior to submission.

The SGU SVM grading

84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

scale applies:

Examination/Quiz details: SAMS 502 / Radiology II

Examination	Fall 2020	MCQs	Total points	Content
Quiz 1 Via My courses Test and Quizzes tab	Week of September 21st	10	5 0.5 pts per question	Lectures 1 to 2 Labs 1 to 2
Final Examsoft	December 9th	40	40 40 questions @ 1 pt 45	Lectures 3-7 Labs 3-6
Total		50		

Grading scale:

A maximum of 1 point is awarded per question answered correctly.

The SGU grading scale (as used in 'My Courses', 'Gradebook') applies:

89.5 -100 %	A
84.5-89.49 %	B+
79.5-84.49 %	B
74.5-79.49 %	C+
69.5-74.49 %	C
64.5-69.49 %	D+
59.5-64.49 %	D
<59.49 %	F

Grading criteria: Grading is objective. There is a maximum of one point per correct answer, i.e. the number of total points making up the final course grade is the sum of correct answers achieved in the final exam and test quiz.

Note that Lab attendance does **not** incur points towards the final course grade, however unexcused negative lab attendance may negatively influence the final course grade

Student feedback for outcomes assessment evaluation

Students are encouraged to leave constructive comments, suggestions and criticism, at the end of the course, for faculty and instructors to review and consider. Professionalism is expected.

XIV. Recommended study strategies

Students should read all of the material provided in lectures and labs. . A weekly study schedule is provided in the appendices and it is important to work to this schedule in order to ensure the material each week is covered in a steady and efficient manner. When studying for the examination, all the material that is provided on MyCourses must be reviewed for the relevant exam. Exam contents are roughly summarised under XIII and will be announced again prior to the exam. Since DI works with images, the images supplied in the lecture and lab material are good examples of the anatomy discussed and must be recognized. The common features and appearance on radiographs of the bovine, equine and avian anatomy discussed must be known. Reviewing images in the listed additional sources will increase confidence in recognition of the radiological appearance of normal tissues. If the visual aspect of DI is a challenge, drawing the structures may be of help to be able to visualise it. If the projections of some of the anatomy, especially oblique projections, are challenging, students are advised to use a torch and a whiteboard and imitate the projections in the anatomy lab using your hand to simulate a joint. Reviewing 3D Anatomy specimens or models may help with understanding the three-dimensional aspects of radiology. Students are requested to ask for support (request office hours, make use of DOS) in a timely and professional manner, i.e. prior to the exam, so support can be given and potential problems can hopefully be solved.

XV. Instructor's expectations of the student

Course goals (Instructor's point of view)

The student should at the end of the course be able to competently recognize the radiological anatomy of the equine and bovine species including some examples/ comparisons of these species, know the basic principles of how the images are created, the standard projections for each anatomical region and the radiographic appearance of the anatomy in the various projections, know the basics of image interpretation and follow good radiographic practice (including technique and radiation safety principles). Students are expected to read the supplied documentation. Revision of corresponding material from Anatomy II prior to the lectures and revision of the lecture prior to radiology labs is recommended. The material is provided on *My Courses*. The radiology labs cover the preceding lecture material unless the timetable does not

allow it, and students are expected to be familiar with the material taught in lectures, so it can be applied during the lab classes.

The course does offer the theoretical and practical basis for learning and understanding radiological anatomy of the horse, the limbs of the bovine and examples of the avian species. The course builds on Radiology I and serves as a basis for Diagnostic imaging in Terms 5 and 6. Knowledge of the basic principles of Physics of radiology as taught in Term 1 is expected.

XVI. Professionalism statement

Students are expected to behave professionally, courteous and respectful towards their peers, staff and faculty at all times. Cell phones should be turned off or set on silent during lectures and labs. The use of computers, tablets or phones for different purposes other than for following the lecture or Lab being given (i.e. Twitter, facebook, blogs et al) is unprofessional and should not occur. Personal video and audio recording of lectures or labs are not allowed, *panopto* recordings are created for each lecture and uploaded on MyCourses.

XVII. Attendance/Participation policy

Students are requested to refer to the Student manual (available on the Carenage website):

Students are expected to virtually attend, engage with online content, participate in and complete all classes for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, participation in and completion of classes may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Students are requested to refer to the Student manual (available on the Carenage website)-for description of attendance policy and **reporting of absences**.

Lecture attendance policy: Students are expected to listen and complete all of the lectures.

Laboratory session policy: Radiology II Lab sessions require mandatory completion. If for some reason (for example a medical problem) a student cannot complete the allocated Lab session, then the student must contact Dr. Hanson (Thanson3@sgu.edu) in advance to advise him that a lab will not be completed at the assigned time.

-> **Note** that Lab completion does **not** incur points towards the final course grade, however unexcused non-completion from lab sessions may negatively influence the final course grade.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director Dr Hanson on thanson3@sgu.edu and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School. . *Carenage/ Medical Excuse Submissions/ SVM Examinations* will be accepted. If you don't think you are healthy enough to take an exam, please inform Dr Hanson **PRIOR** to the time of the exam. Excuses that are issued **after** the examination has started/ been given will not be accepted. If an extended absence is required, a **leave of absence** form from the Dean of Students office must be submitted. University protocol limits you to 2 medical excuses per year only, and then you need a medical leave of absence. . Students who fail to appear for an examination without a valid reason (see student manual: SGU SVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. Test and Quizzes and ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to contact the IT department for assistance prior to exam day. If on Grenada examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

On Exam Day

1. All examinees scheduled to sit a computer-based exam are required to bring their laptops and all necessary accessories, (mouse, Ethernet cable and power cord/battery charger), for use on exam day.
2. Examinees must reset the clock on their laptops to the correct local time and time zone (Atlantic Standard Time - AST).
3. An examinee who is experiencing a **computer problem** should **notify the course director** Dr Hanson immediately:- email address Thanson3@sgu.edu AND IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.
4. **No communication of any kind is permitted between examinees once the exam has started.**
5. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
6. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Exam’s security features will be subject to academic disciplinary action.
7. Permitted Items—only the following items will be allowed for the exam:
 - Laptop and accessories
 - SGU ID
 - Completely clear (see-through) bottle of plain water
 - Items specified by Course Director or permitted by Dean of Students (DOS) office

If there are queries regarding exam content after the exam, these should be submitted in writing via the class representative(s) to the course director/ instructors. The content of any such query

must be worded professionally and if necessary edited by the class representative prior to submission. Students are encouraged to not send questions that may be answered by reviewing the teaching material provided.

Note: For Diagnostic imaging examinations students should familiarize themselves with the use of image manipulation in *Exemplify*, such as magnifying images and panning (using the cursor to ‘move’ the image which is larger than the actual display) the images, which will be needed to assess images, especially when small screens are used.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited. This includes publication on publica pages on the internet, e.g. *facebook*.

XXI Appendices:

Appended are the lecture and radiology lab schedules, lecture learning outcomes

SAMS 502 / Radiology II Lecture schedule

Date, Time Lecture No Lecturer	Lecture content	Lecture learning outcome
Lecture 1 Week 2 Week of August 24th Bovine radiography,	Bovine radiography, radiology and technique. Normal radiological anatomy, variations, labeling	Explain how the bovine limbs are radiographed, list and identify the standard projections, identify the normal radiographic anatomy of the juvenile and adult bovine limbs

<p>Lecture 4 Week 7</p> <p>Week of September 28th</p> <p>Equine radiology: Forelimb</p>	<p>The equine forelimb: Shoulder, elbow, carpus and metacarpus. Projections, radiological anatomy, variations, labeling.</p>	<p>Explain how the equine shoulder, elbow, carpus and metacarpus are radiographed.</p> <p>List and identify the standard radiographic projections, using correct descriptive terminology, for each of these joints and the metacarpus.</p> <p>List and identify the common oblique radiographic projections of the equine carpus and metacarpus and be aware of the reasons for their use.</p> <p>Identify the normal radiographic anatomy of the adult and juvenile equine carpus, metacarpus, elbow and shoulder and the anatomical variations.</p>
<p>Lecture 5 Week 10</p> <p>Week of October 19th</p> <p>Equine radiology: Hindlimb</p>	<p>The equine hindlimb: Stifle, tarsus and metatarsus. Projections, radiological anatomy, variations, labeling.</p>	<p>Explain how the equine stifle, tarsus and metatarsus, are radiographed. List and identify the standard radiographic projections, using correct descriptive terminology, for each of these joints and the metatarsus. List and identify the common oblique radiographic projections of the equine tarsus, metatarsus and stifle and be aware of the reasons for their use. Identify the normal radiographic anatomy of the adult and juvenile equine tarsus, metatarsus and stifle</p>
<p>Lecture 6 Week 11 Week of October 26th</p> <p>Equine radiology: Skull</p>	<p>The equine skull: Technique, standard projections, radiological anatomy, variations, labeling.</p>	<p>Explain how the equine skull is radiographed List and identify the standard radiographic projections, using correct descriptive terminology for the teeth, paranasal sinuses and pharynx. List and identify the common oblique radiographic projections of the equine skull and be aware of the reasons for their use. Identify the normal radiographic anatomy of the adult and juvenile equine skull and the anatomical variations.</p>

Lecture 7 Week 12 Week of November 2nd Avian Radiology	Avian Radiology: Projections, radiological anatomy, variations, labeling	Explain the practical aspects of avian radiography including positioning and the standard projections and radiation safety issues. Identify the normal radiographic anatomy of the avian species
WEEKS 13-17 WEEK OF NOV 2ND	Revision of Lectures 3, 4,5,6 and 7	Revise all material related to lectures 3, 4, 5,6 and 7
Week 18 December 9th 12:00-1:00 pm Final Exam		

Radiology II Lab Contents and Learning Outcomes:

Lab location: On line

Lab No	Lab groups Date & time	Lab content	Lab learning outcome
Lab 1 Bovine radiography	Week 2 Week of august 24th	Bovine Radiography; radiology and technique. Normal anatomy, variations, labeling	Explain how the bovine limbs are radiographed, list and identify the standard (including oblique) projections, identify the normal radiographic anatomy of the juvenile and adult bovine limbs
Lab 2 Equine and bovine thorax	Week 3 Week of August 31st	The equine and bovine thorax: Technique, projections, normal radiological	Explain how the equine and bovine thorax is radiographed. List and identify the standard radiographic projections for the thorax Identify the normal radiographic anatomy of the adult and juvenile equine and bovine thorax

		anatomy, variations, labeling	
Lab 3 Equine foot and fetlock	Week 4 Week of September 7th	The equine foot and fetlock: Projections, technique, radiological anatomy, variations, labeling.	<p>Explain how the equine foot, phalanges and fetlock radiographed. List and identify the standard and oblique projections of the foot, phalanges and fetlock</p> <p>Identify the normal radiographic anatomy of the equine foot and fetlock; juvenile and adult</p>
Week 5	Week of September 14th	Revision week	Revise all material related to lectures 1 and 2 and Labs 1 and 2
WEEK 6	Week of September 21st	QUIZ 1	
Lab 4 Equine radiology Forelimb	Week 7 Week of September 28th	The equine forelimb; shoulder, elbow, carpus and meta-carpus. Projections, radiological anatomy, variations, labeling	<p>Explain how the equine forelimb (including shoulder, elbow, carpus and metacarpus) is radiographed. List and identify the use of oblique projections of carpus and metacarpus.</p> <p>List and identify the standard projections</p> <p>Identify the normal radiographic anatomy of the equine forelimb</p>

Week 10 Lab 5 Equine radiology Hindlimb	Week of October 19th	The equine hindlimb; stifle, tarsus and metatarsus. Projections, radiological anatomy, variations, labeling	Explain how the equine hindlimb (including stifle, tarsus and metatarsus) is radiographed. List and identify the standard and oblique projections. Identify the normal radiographic anatomy of the equine hindlimb (including stifle, tarsus and metatarsus)
Week 11 Lab 6 Equine radiology Skull	Week of October 26th	The equine skull: Technique, standard projections, radiological anatomy, variations, labeling.	Explain how the equine skull is radiographed, including sinuses, teeth List, identify and explain the standard projections. Identify the normal radiographic anatomy of the equine skull
Week 12 Lab 7 Avian Radiology	Week of October November 2nd	Practical aspects of avian radiography including positioning and the standard projections and radiation safety issues. Identify the normal radiographic anatomy of the avian species.	Explain how birds radiographed, List, identify and explain the standard projections. Identify the normal radiographic anatomy of the common avian species
Weeks 13-15 Revision weeks	Revision of Lectures 3, 4,5,6 and 7	Revise all material related to lectures 3, 4,5,6 and 7	Revise all keys for the labs and self study questions for labs 3, 4,5, 6 and 7
Week 18 December 9th 12:00 – 1:00 pm Final Exam			

SVM Course Code: **SAMS 502**

Course Director: Dr T Hanson

Fall 2020 Online Course Work Schedule

Course content Lectures/Labs:	Resources provided:	Weekly Learning Schedule:	Assessment Schedule:
<p>Week 2</p> <p>During the week: August 24th</p> <p>Lecture 1 Bovine radiography, radiology and technique. Normal radiological anatomy, variations, labeling</p>	<p>Lecture 1 on MyCourses/ Resources</p> <p>Lab 1 power point pdf questions on My Courses/resources</p> <p>Self study questions for Lab 1 on MyCourses/ Resources</p> <p>Key for Lab 1 questions on MyCourses/ Resources</p> <p>Key for Lab 1 self study questions on MyCourses/ Resources</p> <p>Panopto recording of the lab 1 key</p>	<p>During the week: August 24th</p> <ol style="list-style-type: none"> 1. ZOOM introduction to course 12.30pm Monday Dr Hanson (optional) 2. Review lecture 1 powerpoint 3. Listen to Lecture 1 panopto recording 4. Work through Lab 1 questions 5. Work through Lab 1 self study questions to Lab 1 <p>On Friday check answer keys to the Lab 1 questions and the self study questions including the panopto recordings of the lab answer keys</p>	<p>N/A</p>
<p>Week 3</p> <p>During the week: August 31st</p> <p>Lecture 2 The equine and bovine thorax: Technique, projections, normal radiological anatomy, variations, labeling</p>	<p>Lecture 2 on MyCourses/ Resources</p> <p>Lab 2 powerpoint pdf questions on My Courses/Resources</p> <p>Self study questions for Lab 2 on MyCourses/ Resources</p> <p>Key for Lab 2 questions on MyCourses/ Resources</p> <p>Key for Lab 2 self study questions on MyCourses/ Resources</p>	<p>During the week: August 31st</p> <ol style="list-style-type: none"> 1. ZOOM office hours/ Q and A 12.30pm Monday Dr Hanson (optional) 2. Review lecture 2 powerpoint 3. Listen to Lecture 2 panopto recording 4. Work through Lab 2 questions 5. Work through Lab 2 self study questions to Lab 2 <p>On Friday check answer keys to the Lab 2 questions and the self study questions</p>	<p>N/A</p>

	Panopto recording of the lab 2 key	On Friday check panopto recording of the lab answer key	
Week 4 During the week: September 7th Lecture 3 The equine foot and fetlock : Projections, technique, radiological anatomy, variations, labeling.	Lecture 3 on MyCourses/ Resources Lab 3 power point pdf questions on My Courses/resources Self study questions for Lab 3 on MyCourses/ Resources Key for Lab 3 questions on MyCourses/ Resources Key for Lab 3 self study questions on MyCourses/ Resources Panopto recording of the lab 3 answer key	During the week: September 7th 1. ZOOM Q and A/ OFFICE HOURS 12.30pm Monday Dr Hanson (optional) 2. Review lecture 3 powerpoint 3. Listen to Lecture 3 panopto recording 4. Work through Lab 3 questions 5. Work through Lab 3 self study questions to Lab 3 On Friday check answer keys to the Lab 3 questions and the self study questions. On Friday listen to the Panopto recording of the lab answer key	
Week 5 During the week: September 14th Revision week for quiz	Review lectures 1 and 2 Labs 1 and 2	During the week: September 14th ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) REVIEW ALL CONTENT RELATING TO LECTURES 1 and 2 AND LABS 1 and 2	Study for Quiz 1 Which is next week Lectures 1 and 2 Lab 1 and 2
Week 6 During the week of September 21st	QUIZ	ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) Quiz week of September 21st	QUIZ WEEK 10 Questions = 5 points

<p>Week 7 During the week: September 28th</p> <p>Lecture 4 Equine radiology: Forelimb</p> <p>The equine forelimb: metacarpus, carpus, elbow, shoulder; radiography and normal anatomy</p>	<p>Lecture 4 on MyCourses/ Resources</p> <p>Lab 4 power point pdf questions in My Courses/resources</p> <p>Self study questions for Lab 4 on MyCourses/ Resources</p> <p>Key for Lab 4 questions on MyCourses/ Resources</p> <p>Key for Lab 4 self study questions on MyCourses/ Resources</p> <p>Panopto recording of the lab 4 answer key</p>	<p>During the week: September 28th</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) 2. Review lecture 4 powerpoint 3. Listen to Lecture4 panopto recording 4. Work through Lab 4 questions 5. Work through Lab 4 self study questions to Lab <p>On Friday check answer keys to the Lab 4 questions and the self study questions</p> <p>On Friday listen to the panopto recording of the lab key answers</p>	<p>N/A</p>
<p>Week 10 During the week of October 19th</p> <p>Lecture 5</p> <p>Equine radiology: Hindlimb radiography and normal anatomy</p>	<p>Lecture 5 is on MyCourses/ Panopto</p> <p>Lab 5 Questions: Powerpoint pdf on MyCourses /Resources</p> <p>Self-study questions for Lab 5 Powerpoint pdf on MyCourses/ Resources</p> <p>Key for lab 4 powerpoint questions on My Courses/resources</p> <p>Panopto recording of the lab 5 answer key</p>	<p>During the week of October 19th</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) 2. Review Lecture 5 Powerpoint pdf 3. listen to the Panopto recording of Lecture 5 4. Work through Lab 5 questions 5. Work through the self-study questions to Lab 5 <p>On Friday: Review answer Keys to Lab 5 as Powerpoint pdf and Panopto recording of the lab key on MyCourses/ Resources/ Panopto</p> <p>On Friday review answer key to lab5 self study questios</p>	<p>NA</p>

<p>Week 11</p> <p>During the week of October 26th</p> <p>Lecture 6 Equine radiology: Skull</p> <p>Technique, standard projections, radiological anatomy, variations, labeling.</p>	<p>Lecture 6 On MyCourses/ Resources</p> <p>Lab 6 Questions: Powerpoint pdf on MyCourses/Resources</p> <p>Self-study questions for Lab 6: Powerpoint pdf on MyCourses/ Resources</p> <p>Key to lab 6 powerpoint questions</p> <p>Panopto recording of the lab 5 answer key</p>	<p>During the week of October 26th</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) 2. Review Lecture 6 Powerpoint pdf 3. listen to the Panopto recording of Lecture 6 4. Work through Lab 6 questions 5. Work through the self-study questions to Lab 6 <p>On Friday: Review answer Keys to Lab 6 as Powerpoint pdf and Panopto recording on MyCourses/Panopto</p> <p>On Friday: review answer key to self study questions</p>	<p>NA</p>
<p>Week 12</p> <p>During the week of November 2nd</p> <p>Lecture 7 Avian Radiology</p> <p>Practical aspects of avian radiography including positioning and the standard projections and radiation safety issues. Identify the normal radiographic anatomy of the avian species.</p>	<p>Lecture 7 On MyCourses/ Resources</p> <p>Lab 7 Questions: Powerpoint pdf on MyCourses/Resources</p> <p>Self-study questions for Lab 7: Powerpoint pdf</p> <p>Answer key to Lab 7 powerpoint questions</p> <p>Answer key to Lab 7 self study questions</p> <p>Panopto recording of the lab 5 answer key</p>	<p>During the week of November 2nd</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 12.30pm Monday Dr Hanson (optional) 2. Review Lecture 7 Powerpoint pdf 3. listen to the Panopto recording of Lecture 7 4. Work through the lab 7 questions 5. Work through the self-study questions to Lab 7 <p>On Friday: Review answer Keys to Lab 7 as Powerpoint pdf and Panopto recording on MyCourses/Resources and Panopto</p> <p>On Friday review answer key to Lab 7 self study questions</p>	<p>NA</p>

<p>Weeks 13-15</p> <p>During the weeks of Nov 2nd to November 23rd</p> <p>Revision weeks</p>	<p>Prepare for Final exam:</p>	<p>During the week of November 2nd -23rd</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q & A 12.30pm Mondays Dr Hanson (optional) 1. Review all course material for Lectures 3, 4, 5,6,7 and 2. Review all labs 3, 4, 5,6,7 3. Review Lab keys for 3,4,5,6, and 7 and the self -study questions keys 4. Review all panopto recordings of labs 3,4,5, 6 and 7 	
<p>Week 18</p> <p>December 9th</p> <p>12:00 – 1:00 pm</p> <p>Final exam</p>	<p>Final exam</p>	<p>Week of December 7th</p> <p>course content of Lectures 3, 4, 5, 6 and 7</p> <p>Labs 3,4,5 and 6</p> <p>Self-study questions</p>	<p>40 questions 40 points</p>

Assessment Summary:

<p>Point Allocation:</p>	
<p>Total points = 45</p> <p>One quiz =5 questions</p> <p>Final exam=40 questions</p> <p><i>Total points breakdown:</i></p> <p>Quiz: 5</p> <p>Final exam: 40</p>	



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT of Small Animal Medicine and Surgery (SAMS)
DIAGNOSTIC IMAGING SYLLABUS (3 credits)
SAMS 513, TERM V
Fall 2020 class rep is Olivia Valente

Course Director

Tom Hanson DVM MS
Professor Diagnostic Imaging, SAMS, SVM, SGU
Cassia building ground floor
Office hours by appointment via email for zoom
Thanson3@sgu.edu

I. Course Faculty and Staff Information

Hester McAllister, MVB, DVR, DipECVDI
European specialist in Veterinary Diagnostic Imaging,
Professor Diagnostic Imaging, SAMS, SVM, SGU (part time)
Email Address: hmcallister@sgu.edu
Office Hours: via e-mail for appointment for Zoom

Visiting Professor

Regine Hagen Argudin Pina, Dr med vet, Cert VR, Dip ECVDI,
European specialist in Veterinary Diagnostic Imaging,
Associate Professor Diagnostic Imaging, SAMS, SVM, SGU
Email Address: rhagenar@sgu.edu
Office Hours: via e-mail for appointment for Zoom

Administration: Ms Ruth Thornhill

SAMS, Cassia building, lower floor, True Blue Campus

Email Address: rthornhill@sgu.edu

II. Course location – on-line see (XII for schedules)

Lectures: Provided in My Courses as powerpoints and panopto recordings
with lecture notes for most lectures

Labs: labs, lab keys and self study questions are provided in My Courses as powerpoints and panopto recordings

Examinations/quiz/tests-

Midterm will be delivered by examsoft

One quiz delivered within My Courses Test and quizzes

Final examination will be delivered by examsoft

III. Prerequisite and/or co-requisite courses

Radiology I and II
Veterinary Anatomy I and II

Knowledge of normal radiographic anatomy is expected and is not taught in this course. Updated Radiology I and II lectures (as taught in terms 1 and 2) are available on *MyCourses* for reference and as a basis for study.

As a reference for physics of radiology, Chapter 1: Radiation Protection and Physics of Diagnostic Radiology, pages 2 to 21 of the Textbook **Thrall, D.E. Textbook of Veterinary Diagnostic Radiology**, 6th Edition, Elsevier/ Saunders, 2013 are supplied on *MyCourses*. See below for printed resources.

IV. Required reading resources

All material supplied on MyCourses/ 2020-08-SAMS513-V-0- Diagnostic Imaging- (21139)

V. Recommended resources (texts, journal articles etc.)

Students are NOT required to acquire a textbook.

Main recommended textbook: Thrall, D.E. **Textbook of Veterinary Diagnostic Radiology**, 7th Edition, Elsevier/ Saunders 2018. Includes chapters on physics of radiology and normal radiographic anatomy of Canine and Equine species. This is a very good reference for more in-depth reading. It covers all the material that will be discussed in lectures and labs. Available at the library and online versions can be purchased.

Additional resources: Supplied on *My courses*:

This material contains additional background information which is *not* material that will be examined. Resource on Digital Radiography: **Thrall, D.E. Textbook of Veterinary Diagnostic Radiology**, 6th Edition, Elsevier/ Saunders, 2013: Chapter 2: Digital Radiographic Imaging, pages 22 to 37.

Additional recommended textbooks:

Kealy K., McAllister H. and Graham J.P. **Diagnostic Radiology and Ultrasonography of the Dog and Cat**, 5th edition. Saunders/ Elsevier 2011.

Holloway A. and McConnel F. **BSAVA Manual of Canine and Feline Radiography and Radiology; A Foundation Manual**, 1st edition. BSAVA 2014.

Kirberger R.M., McEvoy F. J. **BSAVA Manual of Canine and Feline Musculoskeletal Imaging**, 2nd edition. BSAVA 2016.

Schwarz T. and Johnson V. **BSAVA Manual of Canine and Feline Thoracic imaging**, 1st edition. BSAVA 2008

O'Brien, R. and Barr F. **BSAVA Manual of Canine and Feline Abdominal imaging**, 1st edition. BSAVA 2009.

Butler, J.A., Colles, C.M., Dyson, S.J., Kold, S.J. and Poulos, P.W., **Clinical Radiology of the Horse**, 4th Edition. Wiley-Blackwell 2017. Kindle edition available.

Mattoon J.S. and Nyland T.G. **Small Animal Diagnostic Ultrasound**. 3rd edition, Elsevier/ Saunders, 2015. Kindle edition available.

Penninck D. and d'Anjou M.A. **Small Animal Ultrasonography**, 2nd edition. Wiley/ Blackwell, 2015. Kindle edition available.

Barr F. and Gaschen L. **BSAVA Manual of Canine and Feline Ultrasonography**, 1st edition. BSAVA 2011.

Dennis R., Kirberger R.M., Barr F., Wrigley R.H. **Handbook of Small Animal Radiology and Ultrasound. Techniques and Differential Diagnoses**. 2nd Edition, Elsevier 2010.

Ayers Susie. **Small Animal Radiographic Techniques and Positioning**, Wiley& Blackwell, 2012.

Handbook of Equine Radiography by Martin Weaver and Safia Barakzai, Saunders and Elsevier, 2010.

Websites: These are definitively worth looking at:

Radiology website with normal radiographic anatomy of main domestic species of the University of Illinois:

http://vetmed.illinois.edu/courses/imaging_anatomy/index.html

London Royal Veterinary College website on normal radiographic anatomy:

<http://www.onlineveterinaryanatomy.net/>

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs.

VIII Course Rationale

At the end of the course the student should be able to competently interpret and comment on common radiological presentations of clinical disorders that she or he will encounter on the first day in clinical practice. The basic principles of how the image formation and interpretation are reapplied building on SAMS 501 and SAMS 502 knowledge. Students should be familiar with the standard projections, the anatomy they show and how they are obtained. The course does offer the theoretical and practical basis for learning and understanding the basics of diagnostic imaging that is applied in daily veterinary practice.

Lectures will be available according to the schedule provided under *Appendices*. **Lectures** are scheduled ahead of the lab classes. Lectures and if available **Lecture notes** are available as **Powerpoint pdf files** on *MyCourses* and as commented recordings on the **online video Panopto system in My Courses** (see *Appendices* for release dates, suggested study schedule and contents). The Panopto recordings will be available on the Monday of the week the lectures are scheduled. The course contains 33 lectures. Lecture content is indicated in the appendices. The course covers the basic principles of image interpretation in the current clinically used modalities and basic general clinical radiology in dogs, cats, horses and bovines. The course should prepare the student to be competent in diagnosing common pathologies using diagnostic radiology and ultrasound and be able to recommend the appropriate advanced imaging modalities as may be required on the first day of clinical practice. Students are expected to work independently through the provided lecture notes and lecture Powerpoint pdf files and Panopto recordings.

Lab Classes will be made available according to the schedule (see under *Appendices* for dates and content. These will be provided as **Powerpoint pdfs** with a series of questions to work through as well as self study questions. The Lab questions will be available on MyCourses as a Powerpoint pdf on the Monday of the week the labs are scheduled. Subsequently the **answer key** to the lab and self study questions will be released as a Powerpoint pdf file and will be available via *My courses* on the Friday of same week (see *Appendices* for release dates, suggested study schedule and contents). The course contains **6 Lab sessions**.

An effort is made that in each Lab session the cases/ questions will focus on material covered in the lectures preceding the Lab sessions. Lab sessions are for self- study. The lab sessions are a regular and continuous *formative assessment* throughout the course.

- Students will be expected to evaluate radiographs and give answers to formative questions which will be provided in writing on the lab slide ppt pdf on My Courses.
- Students are expected to work through each lab by reviewing the lecture material taught prior to the labs and answering the questions that are presented with the cases in each lab. The answers are not provided prior or concurrently to the lab sessions in order to encourage active involvement and simulate a clinical setting, where images have to be reviewed on the spot.
- For every lab session that is provided at the beginning of a week according to the schedule, an answer key for the cases, including the images and explanations, will be available on *MyCourses* for review at the end of that week. This gives the student time to work through the lectures and lab questions prior to having access to the answers.
- Lab content will be examined in the examinations (Midterm, Quiz, Final).
- When answering the questions on the cases, students should emphasize the use of correct descriptors for the abnormalities presented and use of correct anatomical and radiological terminology and formulate a correct **radiological diagnosis, differential diagnoses** and recommend **further investigations** and **other imaging studies** where appropriate before checking the answer key.

ZOOM “office hours”/question and answer sessions are offered on a regular basis on Monday mornings for Students to have an opportunity to ask questions to clarify the course material preceding the corresponding Question and Answer session. They are **OPTIONAL**. See Schedule in the appendices

IX. Course Level Outcomes

Note: Each lecture/lab learning outcome may relate to several Course Learning Outcomes (CL).

Upon successful completion of this course, the student will be able to...

- understand the basic principles of image formation and interpretation in radiology and ultrasound (image formation in radiology was covered mainly in term 1)
- understand the basic principles of image formation and interpretation in CT, MRI and Scintigraphy including the correct terminology to describe images.
- recognize the normal anatomical features and anatomical variations in the canine and feline species in radiological and ultrasonographic modalities
- recognize the normal anatomical features and anatomical variations in the equine and bovine species in radiological and ultrasonographic modalities
- identify radiological and ultrasonographic abnormalities of common clinical conditions in small animals; and some examples of typical appearances of common lesions as seen in CT, MRI and Scintigraphy modalities
- identify radiological and ultrasonographic abnormalities of common clinical conditions in large animals
- develop the ability to use correct radiological terms and descriptors in formulating an imaging report for small and large animals focusing on radiology and ultrasonography.
- acquire skills in describing abnormalities seen in the images of various modalities and compile structured reports using correct terms and descriptors.
- learn how to select appropriate diagnostic tests and imaging modalities and be familiar with their technique
- be aware of the potential radiation hazards to personnel when using ionising radiation and the hazards of working with MR equipment in order to ensure its safe use in clinical practice
-

X. Lesson Learning Outcomes

Lesson- level/ learning outcomes (LLOs) are appended as a table at the end of the Syllabus as part of the Course Schedule under *Appendices*.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Learning Outcome	SVM Program Level Outcome
Recognize and explain the normal radiological anatomy of the body systems of the common domestic species (equine, canine, feline, bovine) and variations thereof.	PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
List, explain and apply the commonly used radiographic projections in dogs and cats and	PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.

<p>horses and bovines to image the body systems including axial and appendicular skeleton, skull, thorax and abdomen.</p>	<p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Recognise and correctly interpret radiological signs associated with commonly recognized pathology of the body systems of the common domestic species (equine, canine, feline and some bovine).</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations. PLO 4 Explain the relationship between disease processes and clinical signs. PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Recognise and correctly interpret radiological signs associated with commonly recognized pathology of the abdominal parenchymal organs detected by abdominal ultrasound.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations. PLO 4 Explain the relationship between disease processes and clinical signs. PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Appraise the normal heart and great vessels and the common abnormalities/ pathologies thereof on both radiographs and echocardiograms.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of</p>

	<p>common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Explain the basic principles of image formation in radiology, ultrasound, CT, MRI and Scintigraphy.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Recognise the best use of advanced diagnostic imaging modalities (CT, MRI, Scintigraphy) and in which cases to recommend what modality.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>List the commonly used types of contrast media used in diagnostic imaging, the method of administration the most common types of studies</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p>

<p>performed and the risks and contraindications of their use.</p>	<p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Integrate, explain and apply the principles of radiation safety and awareness of the risks of the medical use of ionizing radiation to the patient, staff, the public and the environment.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Demonstrate proficiency in the correct use of medical imaging terminology when verbally describing and reporting diagnostic imaging studies and can communicate a radiological diagnosis and differential diagnoses to teachers/ colleagues/ co-workers / owners.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 12 Demonstrate, evaluate, and model</p>

	<p>effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Explain and recommend the use of ultrasound to perform interventional studies such as fluid/ tissue sampling and the standard practice of such.</p>	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>

XII. Course and Weekly Study Schedules

Appended as a table at the end of the Syllabus under *Appendices*

XIII. Grading and assessment policy, and grading rubrics

There will be **1 Midterm exam, 1 Quiz, and 1 Final exam**. All examinations will consist of MC question type and a considerable number of the questions will include images. The mid-term and final examinations will be in *ExamSoft*. Resit (Make-up) and Completion exams will take place using *ExamSoft*. The Quiz will be in the **Tests & Quizzes** tab in *My Courses*. Completion and Resit exams may include question types other than MC. The student has to be familiar with the use of *ExamSoft/ Exemplify* software as well as the *Tests & Quizzes* software in *My Courses* prior to the examinations.

Examination material will be based on all of the information provided on *MyCourses*, during lectures and Question and Answer zoom discussions including lecture notes, lecture and lab Powerpoint pdfs, Panopto recordings and any additional material as indicated and provided on *MyCourses*.

The Quiz, Midterm and Final exams will assess the material taught prior to these exams and thus be non- cumulative. Exam details will be communicated prior to the examinations via *MyCourses*. *There will be no detailed breakdown of questions published prior to the individual exams.* Exams and the Quiz are sequestered. The only time when questions can be viewed is during the exam.

Grading scale:

In all exams, a maximum of 1 point is awarded per question answered correctly.

The SGU SVM grading scale applies:

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

Examination details:

Examination	Fall 2020	Number of MCQs	Maximum points	Lecture content	Lab content
Midterm Examsoft	October 8th 12-1.30pm	69	69	Lectures 1 - 17	Labs 1+2+3
Quiz On MyCourses	Week of October 26th	14	14	Lectures 18- 22	Lab 4
Final exam Examsoft	December 7 th 12-1.30pm	55	55	Lectures 23 -33	Labs 5 and 6
Total		138	138		

Please note that the content of the individual exams may change if changes are applied to the schedule.

Grading criteria: Grading is objective. There is a maximum of one point per correct answer, i.e. the number of total points making up the final course grade is the sum of correct answers achieved in the Midterm, Quiz and Final exam.

Student feedback for outcomes assessment evaluation

Students are encouraged to leave constructive comments, suggestions and criticism, at the end of the course, for faculty and instructors to review and consider. Professionalism is expected.

XIV. Recommended study strategies

Students should read the material provided prior to working through lectures and labs. A weekly study schedule is provided in the appendices and it is important to work to this schedule in order to ensure the material each week is covered in a steady and efficient manner. When studying for examinations, all the material relating to an exam that is provided on *MyCourses* must be reviewed; this includes lecture notes, lecture powerpoint pdf files and Panopto recordings. Exam contents are roughly summarised under XIII and will be announced prior to each exam. Since DI works with images, the images supplied in the lecture and lab material are good examples of the pathologies discussed and must be recognized. The common features and appearance on radiographs (or other modalities in some cases) of the pathologies discussed must be known. Reviewing images in the listed additional sources will increase confidence in recognition of the radiological appearance of normal and abnormal tissues. If the visual aspect of DI is a challenge, drawing the lesions may be of help to be able to visualise it. Review of the material provided in the SMS 501 and SAMS 502 is advisable to refresh your knowledge of the normal radiological features. Students are requested to ask for support if needed (request office hours, make use of DOS) in a timely and professional manner, i.e. prior to the exam, so support can be given and potential problems can hopefully be solved.

XV. Instructor's expectations of the student

Students are expected to read the supplied documentation. Revision of corresponding material from Radiology I and II and radiological normal anatomy prior to the lectures/ radiology labs is strongly recommended. This material is provided on *My Courses 2020-08-SAMS513-V-0-Diagnostic Imaging; Resources*.

The radiology labs cover the preceding/concurrent lecture material and students are expected to be familiar with the material taught in lectures, as it is applied during the lab classes.

XVI. Professionalism statement

Students are expected to behave professionally, be courteous and respectful towards their peers, staff and faculty at all times. Cell phones should be turned off or set on silent during zoom

sessions. The use of computers, tablets or phones for different purposes other than for following the zoom session (i.e. Twitter, facebook, blogs et al) is unprofessional and should not occur.

XVII. Attendance policy

Students are requested to refer to the Student manual (available on the Carenage website):

Students are expected to virtually attend, engage with online content, participate in and complete all classes for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, participation in and completion of classes may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. Students are requested to refer to the Student manual (available on the Carenage website)- for description of attendance policy and **reporting of absences**.

Lecture attendance policy: Students are expected to listen and complete all of the lectures.

Laboratory session policy: Students must make sure to complete each allocated Lab session. If for some reason (for example a medical problem) the student cannot complete the allocated lab session, then the student must contact Dr. Hagen Argudin Pina or Dr. McAllister to advise them *in advance* that a lab/ session will be missed or not completed in the assigned time. Zoom office hours/Q & A sessions will take place regularly to discuss the course content in the preceding weeks

-> **Note** that Lab completion does **not** incur points towards the final course grade, however unexcused non-completion from lab sessions may negatively influence the final course grade.

ZOOM OFFICE HOURS: These will be held according to the work schedule (see *Appendices*). These are OPTIONAL sessions. They are an opportunity for any questions or points of clarification, arising from the teaching material provided in the previous weeks, can be asked and clarified.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination. Students who have technical issues during the examination MUST inform the Course Director - Dr Tom Hanson on Thanson3@sgu.edu and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School. **Carenage/ Medical Excuse Submissions/ SVM Examinations** will be accepted. If you don't think you are healthy enough to take an exam, please inform the course director Dr Tom Hanson on Thanson3@sgu.edu **PRIOR** to the time of the exam. Excuses that are issued **after** the examination has started/ been given will not be accepted. If an extended absence is required, a **leave of absence** form from the Dean of Students office must be submitted. University protocol limits you to 2 medical excuses per year only, and then you need a medical leave of absence. Students who fail to appear for an examination without a valid reason (see student manual: SGU SVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct. Examsoft policy applies for the online version of the course also.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to contact/visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

On Exam Day

1. All examinees scheduled to sit a computer-based exam are required to bring their laptops and all necessary accessories, (mouse, Ethernet cable and power cord/battery charger), for use on exam day.
2. Examinees must reset the clock on their laptops to the correct local time and time zone (Atlantic Standard Time - AST).
3. An examinee who is experiencing a **computer problem** should **notify the course director Dr Hanson; thanson3@sgu.edu AND IT (talexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu)** during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination
4. **No communication of any kind is permitted between examinees once the exam period has started.**
5. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
6. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Exam’s security features will be subject to academic disciplinary action.
7. Permitted Items—only the following items will be allowed for the exam:
 - Laptop and accessories
 - SGU ID
 - Completely clear (see-through) bottle of plain water
 - Items specified by Course Director or permitted by Dean of Students (DOS) office

Note: For Diagnostic imaging examinations students should familiarize themselves with the use of image manipulation in *Exemplify*, such as magnifying images and panning (using the cursor to ‘move’ the image which is larger than the actual display) the images, which will be needed to assess images, especially when small screens are used. Similarly, students should familiarise themselves with the Test and Quizzes software in My Courses I order to take the quiz

After the exam

If there are queries regarding exam content after the exam, these should be collected and submitted in writing via the class representative(s) to the course director/ instructor. The content of any such query must be worded professionally and if necessary edited by the class representative prior to submission. Students are encouraged to not send questions that may be answered by reviewing the teaching material provided. Answers to queries will be supplied on MyCourses for all students to see.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI Appendices:

Lecture Schedule – all on panopto for SAMS 513Fall 2020 and LLOs

Lecture No Lecturer	Week and date	Lecture content/ aim	Lecture Learning Outcomes
1 HMCA	Week 1 Aug 17 -23rd	Radiology of the normal thorax and normal variations. Pleural disease, mediastinal disease	Revision of the projections and various anatomical components of thoracic radiology and breed variations. Acquire basic concepts of radiology of pleural and mediastinal diseases
2 HMCA	Week 1 Aug 17 -23rd	Radiological features of the normal trachea and oesophagus and their common diseases.	To understand the principles of oesophageal radiology and the indications for contrast studies
3 HMCA	Week 1 Aug 17 -23rd	Radiology of the diaphragm and ribs	Acquire the basic concepts of the radiology and disorders of the diaphragm and ribs.
4 HMCA	Week 2	Small animal pulmonary disease (lung patterns,	To learn the classic features of pulmonary patterns and their typical distribution in various diseases.

	Aug 24 to 30th	pattern recognition for the evaluation of inflammatory, cardiac, allergic, parasitic and neoplastic disorders)	
5 HMCA	Week 2 Aug 24 to 30th	Principles of ultrasound (artefacts and practical issues)	To understand ultrasound generation and its clinical indications, limitations and applications
6 HMCA	Week 2 Aug 24 to 30th	Small animal cardiac radiology and ultrasonography1: (normal cardiac radiology and echocardiography).	To be able to recognize the standard types of Ultrasound images of the heart; 2D, M-mode, Doppler, image planes from the right side and the correct terminology for their descriptions
7 HMCA	Week 3 Aug 31 – Sep 6th	Small animal cardiac Radiology and ultrasonography 2: (abnormal cardiac radiology and echocardiography of common acquired cardiac diseases)	To recognize and describe the common abnormalities seen on ultrasonography of patients with acquired heart disease.
8 HMCA	Week 3 Aug 31 – Sep 6th	Small animal cardiac radiology and ultrasonography 3: (abnormal cardiac radiology and echocardiography of common congenital cardiac diseases)	To recognize and describe the common abnormalities seen on ultrasonography of patients with congenital heart disease.
9 HMCA	Week 3 Aug 31 – Sep 6th	Small animal abdomen 1: (normal radiology and ultrasonography of the peritoneal cavity)	To recognize the normal features of the canine and feline abdomen using radiology and ultrasound
10 HMCA	Week 4 Sep 7 – 13th	Small animal abdomen 2: (abnormal radiology and ultrasonography of the liver, spleen abdominal fluid)	To recognise common abnormal radiological and ultrasonographic findings of the peritoneal cavity, liver and spleen
11 HMCA	Week 4 Sep 7 – 13th	Small animal abdomen 3: (Abnormal GIT radiology and ultrasonography of the GIT including pancreas)	To be able to recognise common abnormal radiological and ultrasonographic findings of the GIT and pancreas
12 RHAP	Week 4 Sep 7 – 13th	Small animal abdomen 4: Radiology and ultrasonography of the kidneys	Recognise normal kidneys in the cat and dog on radiographs and ultrasonograms. Know normal renal anatomy, morphology (shape, size, opacity/ echogenicity) of cats and dogs. Recognise common renal pathologies and their typical radiological and sonographic changes. Apply radiological principles when assessing kidneys.
13 RHAP	Week 5 Sep 14 -20th	Small animal abdomen 5: Imaging of the urinary tract: Contrast studies: kidneys, ureters, bladder; Ultrasound of the ureters; normal and abnormal	Understand the indication, technique, interpretation of contrast studies (CS) and their potential risks/ complications; type of contrast medium; phases of CS; recognise normal and abnormal CS, describe and formulate a diagnosis.
14 RHAP	Week 5 Sep 14 -20th	Small animal abdomen 6: Ultrasound of the urinary bladder, Diagnostic	Recognise and interpret normal and abnormal sonographic appearance of the urinary bladder. Explain the imaging techniques, their advantages and dis-advantages. Explain

		imaging of the urethra, female and male urogenital apparatus	and assess diagnostic imaging of the normal and abnormal female and male urogenital apparatus including the urethra, ovaries, uterus, vagina, prostate and testicles. Assess normal and abnormal pregnancy in cats and dogs.
15 RHAP	Week 6 Sep 21- 27th	Small animal skeleton 1: Radiology of bone, bone development, morphology, bone changes, periosteal reactions.	Understand technique and interpretation of radiology of bone, bone structure, morphology, opacity, development, periosteal reactions, loss of bone vs bone production, associated soft tissue changes
16 RHAP	Week 6 Sep 21- 27th	Small Animal skeleton 2: Radiology of Aggressive vs Non-aggressive bone lesions	Understand the radiological patterns of bone destruction and classification of bone lesions into aggressive / non-aggressive lesions, typical behaviour of aggressive/ non-aggressive bone lesions, lytic vs proliferative lesions, patterns of bone destruction; which type of periosteal reaction goes with which class of bone lesion; progression of bone lesions.
17 RHAP	Week 6 Sep 21- 27th	Small animal skeleton 3: Radiology of bone: Fractures and fracture healing, normal and abnormal fracture healing, complications of fracture healing and asynchronous bone growth	Explain, list and interpret radiology of fractures (fx) including fx classification (location, morphology), age of fx, fx healing, complications of fx healing and complications of fx to growth plates and joint involvement.
18 RHAP	Week 7 Sep28 – Oct 4th	Small animal skeleton 4: Radiology of Small animal Congenital and Developmental skeletal lesions and Disorders of the immature skeleton	Understand the radiology of congenital and developmental bone/ skeletal/ joint lesions and be able to recognise typical radiological changes of specific (common)pathologies; monostotic, polyostotic and generalised presentations, disorders affecting bone and/ or joints, dysplasias, developmental joint disease: OC/ OCD; Legg-Calvé-Perthes disease
Week 8 Midterm Week			
SAMS 513 Midterm exam Fall 2020: Week 8:Thursday October 8th 12-1.30pm Lectures 1 to 17 and including Labs 1, 2 and 3; Midterm exam points: 69 / 138			
19 RHAP	Week 9 Oct 12th- 18th	Small animal skeleton 5: Developmental skeletal lesions and Disorders of joints / Dysplasia	Understand the radiology of congenital and developmental lesions affecting joints. Be able to recognise and interpret typical radiological changes of specific (common) pathologies and dysplasias affecting joints.
20 RHAP	Week 9 Oct 12th- 18th	Small animal skeleton 6: DI of joint disease; Radiology of Small animal joints and joint disease including, congenital, developmental, acquired and immune mediated joint disease	Explain and understand radiography of joints, techniques, projections, stressed projections and radiology of the joint and its components, ST swelling at the joint level/ joint effusion, joint congruency; subluxation vs luxation, osteophytes vs enthesophytes; septic arthritis; osteoarthritis / osteo-arthrosis/ degenerative joint disease; developmental joint disease: OC/ OCD, elbow dysplasia, hip dysplasia; patella luxation, immune mediated joint disease, polyarthropathies.
21 HMCA	Week 10 Oct 19th- 24th	EQ 1: General principles of radiography of the equine foot and recognition of the common radiological abnormalities of the distal	Explain how and be able to recognise equine foot projections and radiological technique with particular consideration of personnel safety.

		phalanges, navicular and distal interphalangeal joint (positioning; projections and terminology; protection)	Be able to identify/ recognise common radiological abnormalities of the distal phalanx, navicular bone and phalanges.
22 HMcA	Week 10 Oct 19th-24th	EQ 2: Equine fetlock (normal anatomy; specialized projections; common disorders)	Explain how and be able to recognise equine projections and radiological technique of the equine metacarpo/ metatarsophalangeal joints with particular consideration of personnel safety. Be able to identify and recognise common radiological abnormalities of the metacarpo/ metatarso-phalangeal joints
Week 11 SAMS 513 Quiz via My Courses:- Test and quizzes: week of Oct 26th- Submission by November 1st Lectures 18 to 22 (5 lectures) ; Lab 4 Quiz points: 14 / 14 points			
23 HMcA	Week 11 Oct26 – Nov 1st	EQ 3: Equine metapodi and carpus, elbow and shoulder (normal anatomy, special projections and common disorders)	Explain how and be able to recognise equine projections and radiological technique with particular consideration of personnel safety of the equine carpus. Be able to identify/ recognise common radiological abnormalities of the equine carpus, elbow and shoulder
24 HMcA	Week 11 Nov 2nd-8th	EQ 4: Equine tarsus and stifle (normal anatomy; specialized projections and common disorders)	Explain how and be able to recognise equine projections and radiological technique with particular consideration of personnel safety of the equine tarsus. Be able to identify/ recognise common radiological abnormalities of the equine tarsus and stifle.
25 HMcA	Week 12 Nov 2nd-8th	EQ 5: Radiography and Radiology of the equine spine and thorax	Explain how and be able to recognise equine projections and radiological technique with particular consideration of personnel safety of the equine spine and thorax. Be able to identify/ recognise common radiological abnormalities of the equine
26 RHAP	Week 12 Nov 2nd-8th	EQ 6: Equine Musculoskeletal ultrasound (normal equine tendon and common abnormalities of the meta-carpal/ -tarsal and phalangeal regions and the stifle of horses).	Know technique, application and interpretation of ultrasound of the normal metacarpal/-tarsal/ phalangeal region. Recognise normal anatomy and morphology of tendons, ligaments, synovial structures and bone in ultrasound. Identify common abnormalities of tendons, ligaments and synovial structures in the equine patient and recognise the sonographic appearance of acute and chronic lesions thereof.
27 RHAP	Week 12 Nov 2nd-8th	EQ 7: Diagnostic imaging of the Equine Head	Revise, explain and interpret radiographic projections of the equine skull, radiology of the nasal cavities, sinus, teeth, mandible, TMJ, orbit, ear, guttural pouches, pharynx and larynx. Recognise appearance of common pathologies in CT, MRI, Scintigraphy
28 RHAP	Week 13 Nov 9 th -13th	Principles of CT, MRI and Nuclear medicine – a brief outline of image formation, interpretation and application	Understand the basic concept of how the image is created, know terminology used to describe images, technique of image acquisition and applications of CT, MRI and Nuclear imaging
29 RHAP	Week 13 Nov 9 th -13th	Diagnostic Imaging of the canine and feline skull; pathologies. Radiology / Diagnostic imaging of the Skull / Eyes and orbit/ Brain: ocular ultrasound,	Recognise and interpret radiology of the normal and abnormal skull including the nose, sinuses, teeth and ears. Understand imaging of the eyes, retrobulbar space and orbit, recommend appropriate modality; ultrasound of the eye and common conditions, imaging hydrocephalus; examples of cross-sectional imaging of the skull and brain.

		imaging of hydrocephalus, CT and MRI of the skull and brain in cats and dogs – examples.	
30 RHAP	Week 13 Nov 9th-13th	Radiology of the small animal vertebral column: Anatomical variants, anomalies, acquired, inflammatory, degenerative, traumatic, metabolic and neoplastic pathologies; IV disc disease	Recognise normal and variant skeletal morphology, anomalies, inflammatory, traumatic, metabolic, degenerative and neoplastic diseases of the vertebral column and the techniques to demonstrate it.
31 RHAP	Week 14 Nov 16th-20th	Myelography: Normal and most common abnormal patterns. CT and MRI of the vertebral column; case examples	Understand the technique, application and interpretation of basic myelographic patterns. Examples of advanced (cross sectional) imaging of the small animal vertebral column
32 RHAP	Week 14 Nov 16th-20th	Diagnostic imaging of the Endocrine organs in cats and dogs	Explain the imaging techniques, applications and interpretation of images of the thyroid, parathyroid, adrenal, pituitary glands and the pancreas; recognise common pathologies of these organs and recommend the appropriate imaging modality
33 RHAP	Week 15 Nov 23rd-27th	Diagnostic imaging of the Skull / Eyes and orbit/ Brain; Musculoskeletal ultrasound in the dog and cat, Ultrasound of small parts	Understand the applications of Diagnostic Imaging of the skull, choice of modality and appearance of some of the more common pathologies. Examples include: Eyes and the orbit, CT of the orbit and eyes, Imaging of Hydrocephalus, Examples of: CT of the skull and brain and MRI of the skull and brain. Understand the technique and clinical application of ultrasound in small animal musculoskeletal pathological conditions
<p>Monday, December 7th 12-1.30pm SAMS 513 Final Exam Fall 2020 Lectures 22 to 33 (12 lectures) , Labs 5 and 6 Total final exam points : 55 / 138</p>			

Lab Schedule SAMS 513 Fall 2020 and [Zoom classes](#) for Q and A on lab material

Lab groups are appended after the Lab Schedule.

Labs are supplied as Powerpoint pdfs and there are multiple cases with questions for each Lab covering the material that was covered in the preceding lectures. The questions can be worked through independently and after completion of the associated lectures, a key with the answers to the questions will be distributed at the end of the corresponding week.

On the Monday after completion of the Lab questions and the associated lectures, there will be an OPTIONAL 50 minute Zoom “office hours” session to answer any questions arising related to the preceding Labs/lectures.

Lab Schedule SAMS 513 Spring 2020 and LLOs: and Optional ZOOM sessions

Group A=Surnames A -L Group B Surnames M-W. Group List at end of this Syllabus

DATE	TIME	GROUPS	Lab No; Content	Lab Learning Outcomes	Instructor
Week 2 Aug 24th -30 th			Lab 1 Thorax: Pleura, Mediastinum Diaphragm, Ribs	Revise normal thoracic radiological anatomy and interpretational pitfalls. Identify and interpret the common radiological conditions of the thoracic cavity of small animals including the pleura and mediastinum	HMCA RHAP
Week 3 Lab 1 Zoom (optional)	Monday Aug 31st 10.30 am	A			
Monday August 31st	Monday August 31st 10.30 am	B			
			Lab 2 Thorax: Pulmonary disease, Lung patterns, Cardiac radiology and ultrasound	Identify and interpret the common radiological conditions of the lungs, especially pulmonary pattern recognition and correlation with various lung diseases in small animals using case examples, question and answer discussions with instructors. Identify and interpret the common radiological conditions of the heart and correlation with ultrasonographic findings in various cardiac diseases in small animals using case examples with question and answer discussions with instructors.	RHAP HMCA
Week 4 Lab 2 Zoom (optional)	Monday Sept 7th 10.30 am	A			
Monday September 7h	Monday Sept 7th 10.30 am	B			
			Lab 3 Abdomen	Identify and interpret of examples of common radiological conditions of the abdomen including the organs, GIT and urinary system of small animals and the use of ultrasound using case examples with question and answer discussions with instructors.	HMCA RHAP
Week 6 Lab 3 Zoom (optional)	Monday Sept 21st 10.30 am	A			
Monday September 21st	Monday Sept 21st 10.30 am	B			
			Lab 4 Bones Aggr vs non-aggr Fractures, Developmental skeletal lesions,	Identify and interpret the common radiological appearance of developmental skeletal and joint conditions in small animals using case examples with instructor discussions	RHAP
Week 10	Monday Oct 19th	A			

Lab 4 Zoom (optional) Monday October 19th	10.30 am		Joints	Identify and differentiate aggressive vs non-aggressive bone lesions. Identify, characterize and classify case examples of fractures and assess fracture healing. Practice review of case examples with question and answer discussions with instructors.	HMA
	Monday Oct 19th 10.30 am	B			
			Lab 5 Equine radiology Limbs and Skull	Identify and interpret the common radiological conditions of the appendicular skeleton of the horse Identify and interpret the common radiological conditions of the equine skull. Practice review of case examples with question and answer discussions with instructors	
Week 13 Lab 5 Zoom (optional)	Monday Nov 9 th 10.30 am	A			HMA
Monday November 9 th	Monday Nov 9 th 10.30 am	B			RHAP
			Lab 6 CT, MRI Endocrine Vertebral column ... Myelography Skull	Revise the orientation principles and terminology of CT/ MR. Identify and interpret the common radiological conditions of the spine of small animals and the use of myelography . Identify and interpret the common radiological conditions of the skull including the nasal cavities, ears and teeth in small animals using case examples with question and answer discussions with instructors.	
Week 15 Lab 6 Zoom (optional)	Monday Nov 23 rd 10.30 am	A			RHAP
Monday November 23 rd	Monday Nov 23 rd 10.30 am	B			HMA

SVM Course Code: SAMS 513

Course Director: Dr. Tom Hanson

Fall 2020 Online Course Working/Study schedule

Week number and date	Course Content:	Weekly Learning Schedule:	5	Assess Sched
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<p>Week 1 August 17th- August 21st</p>	<p>Lectures 1 Radiology of the normal thorax and normal variations. Pleural disease, mediastinal disease</p> <p>Lecture 2 Radiological features of the normal trachea and oesophagus and their common diseases.</p> <p>Lecture 3-Radiology of the diaphragm and ribs ppts in My Course</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 1, 2 and 3</p> <p>Lecture Powerpoint pdfs supplied on MyCourses/ Resources</p> <p>Lectures via Panopto: 1,2 and 3 supplied on MyCourses/Panopto (online videos)</p> <p>Term 1 lecture powerpoints are supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>1. Lecture 1: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 2: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lecture 3 Read lecture notes Review Lecture pdf Listen to Panopto</p>	<p>Zoom office hours-Intro to course Monday August 17th 10.30 am whole class RH and HMA</p>	<p>N/A</p>
<p>Week 2 August 24th- August 28th</p> <p>Week 2 continued</p>	<p>Lecture 4 Small animal pulmonary disease (lung patterns, pattern recognition for the evaluation of inflammatory, cardiac, allergic, parasitic and neoplastic disorders)</p> <p>Lecture 5 Principles of ultrasound (artefacts and practical issues)</p> <p>Lecture 6 Small animal cardiac radiology and ultrasonography1: (normal cardiac radiology and echocardiography).</p>	<p>1. Lecture 4: Read lecture notes, Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 5: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lecture 6: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>4. Lab 1: Work through the lab questions once you</p>		<p>N/A</p>

<p>August 24th- August 28th</p>	<p>Lecture notes for Lectures 4, 5 and 6 supplied in MyCourses/Resources</p> <p>Lecture Powerpoint pdfs supplied on MyCourses/ Resources</p> <p>Lectures 4, 5 and 6 Panopto recordings supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab: Lab 1 Questions</p> <p>Lab 1: Answers to questions will be supplied as Powerpoint pdf on MyCourses/Resources on Friday</p> <p>Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>have worked through the relevant lectures 1-6</p> <p>5. Revision: Revise Term 1 Lectures on the normal thorax</p> <p>6. Lab 1: Answers: On Friday compare your answers with the answer key to Lab 1</p> <p>7. List questions for the Q&A zoom session on Monday Aug. 31.</p>	
<p>Week 3 August 31st- September 4th</p> <p>Week 3 continued August 31st- September 4th</p>	<p>Lecture 7 Small animal cardiac Radiology and ultrasonography 2: (abnormal cardiac radiology and echocardiography of common acquired cardiac diseases)</p> <p>Lecture 8 Small animal cardiac radiology and ultra-sonography 3: (abnormal cardiac radiology and echocardiography of common congenital cardiac diseases)</p> <p>Lecture 9 Small animal abdomen 1: (normal radiology and ultrasonography of the peritoneal cavity)</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 7,8 and 9</p>	<p>1. ZOOM office hours/Q & A on Lab 1 Monday Aug 31st 10.30am (optional)</p> <p>2. Lecture 7: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lecture 8: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>4. Lecture 9: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>5. Work through the lab questions: Lab 2: Work through questions once you have worked through the relevant lectures 1-8</p>	<p>HMA A RHAP B</p> <p>N/A</p>

	<p>Lecture Powerpoint pdfs and lecture notes to go with lectures 7, 8 and 9 supplied on MyCourses/Resources</p> <p>Lectures 7, 8 and 9 panopto recordings supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab: Lab 2 Questions will be supplied as Powerpoint pdf on MyCourses/Resources</p> <p>Lab 2: Answers to questions will be supplied as Powerpoint pdf on MyCourses/Resources on Friday Sept 4th</p> <p>Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>6. Check the answers to lab 2 on Friday</p> <p>7. Revision: Revise Term 1 Lectures on the normal abdomen</p> <p>8. List Questions for the zoom Q & A/office hours session on Monday, September 7th</p>		
<p>Week 4 September 7th-Sep 11th</p>	<p>Lecture 10 Small animal abdomen 2: (abnormal radiology and ultrasonography of the liver, spleen abdominal fluid)</p> <p>Lecture 11 Small animal abdomen 3: (Abnormal GIT radiology and ultrasonography of the GIT including pancreas)</p> <p>Lecture 12 Small animal abdomen 4: Radiology and ultra-sonography of the kidneys</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 10,11 and 12</p>	<p>ZOOM office hours/Q & A on lab 2 Monday September 7th 10.30am (optional)</p> <p>1. Lecture 10: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture11: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lecture 12: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>4. Work through the lab questions: Lab 3</p>	<p>RHAP A HMA B</p>	<p>N/A</p>
<p>Week 4 continued September 7th-Sep 11th</p>	<p>Lecture Powerpoint pdfs and lecture notes to go with lectures</p>			

	<p>10, 11 and 12 supplied on MyCourses/ Resources</p> <p>Lectures 10, 11 and 12 panopto recordings supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab: Lab 3 questions supplied as Powerpoint pdf in My Courses/Resources</p> <p>Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>Questions supplied as Powerpoint pdf: Work through questions once you have worked through the relevant lectures 9-12</p> <p>5. Revision: Revise Term 1 Lectures on the normal abdomen</p>		
<p>Week 5 September 14th to 18th</p>	<p>Lecture 13 Small animal abdomen 5: Imaging of the urinary tract: Contrast studies: kidneys, ureters, bladder; Ultrasound of the ureters; normal and abnormal</p> <p>Lecture 14 Ultrasound of the urinary bladder, Diagnostic imaging of the urethra, female and male urogenital apparatus Lecture notes supplied in MyCourses/Resources for Lectures 13 and 14</p> <p>Lecture Powerpoint pdfs and lecture notes to go with lectures 13 and 14 supplied on MyCourses/Resources</p> <p>Lectures 13 and 14 panopto recordings supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab : Lab 3: Answers to questions will be supplied as Powerpoint pdf on MyCourses/Resources on Friday September 18</p>	<p>1. Lecture 13: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture14: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lab 3: Work through questions once you have worked through the relevant lectures 9 to 14</p> <p>4. Check the answers to Lab 3 on Friday</p> <p>5. Revision: Revise Term 1 Lectures on the normal abdomen</p> <p>6. List questions for ZOOM office hours/Q & A on Monday September 21st</p>		N/A
<p>Week 5 continued September 14th to 18th</p>				

	Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i>			
Week 6 September 21st-25th	<p>Lecture 15 Small animal skeleton 1: Radiology of bone, bone development, morphology, bone changes, periosteal reactions.</p> <p>Lecture 16 Small Animal skeleton 2: Radiology of Aggressive vs Non-aggressive bone lesions</p> <p>Lecture 17 Small animal skeleton 3: Radiology of bone: Fractures and fracture healing, normal and ab-normal fracture healing, complications of fracture healing and asynchronous bone growth</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 15, 16 and 17</p> <p>Lecture Powerpoint pdfs and lecture notes to go with lectures 15, 16 and 17 supplied on MyCourses/ Resources</p> <p>Lectures 15, 16 and 17 Panopto recordings supplied on MyCourses/ Panopto (online videos)</p> <p>Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>ZOOM office hours/ Q and A on Lab 3 10.30am on Monday Sept 21st (optional)</p> <ol style="list-style-type: none"> 1. Lecture 15: Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture16: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lecture17: Read lecture notes Review Lecture pdf Listen to Panopto 4. Revision: Revise Term 1 Lectures on the normal hindlimb, pelvis and forelimb, 	HMA A RHAP B	N/A

<p>Week 7 September 28th- October 2nd</p>	<p>Small animal Skeleton</p> <p>Lectures: Lecture 18: SA skeleton 4: Congenital and Developmental Disorders of the immature skeleton</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 18</p> <p>Lecture Powerpoint pdf and lecture notes to go with lecture 18 supplied on MyCourses/ Resources</p> <p>Lecture 18 Panopto recording supplied on MyCourses/Panopto (online videos)</p>	<p>1. Lecture 18: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>Review lectures 1-17 and Labs 1, 2 and 3 for midterm exam on October 8th</p>		N//A
<p>Week 8 October 5th-9th</p> <p>Thursday October 8th MIDTERM EXAM 12-1.30pm</p>	<p>Lectures 1- 17 and Labs 1,2 and 3</p> <p>Midterm exam on Thursday October 8th 69 Questions in ExamSoft</p>	<p>Revise all supplied resources for Lectures 1-17 and Labs 1, 2 and 3</p>		Midterm exam
<p>Week 9 October 12th-18th</p>	<p>Lectures: Lecture 19: Small animal skeleton 5: Developmental skeletal lesions and Disorders of joints / Dysplasia</p> <p>Lecture 20: Small animal skeleton 6: DI of joint disease; Radiology of Small animal joints and joint disease including, congenital, developmental, acquired and immune mediated joint disease</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 19 and 20</p>	<p>1. Lecture 19: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 20 Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lab 4: Work through questions of Lab 4</p> <p>4. see below</p>		N/A

<p>Week 9 continued October 12th-16th</p>	<p>Lecture Powerpoint pdfs and lecture notes to go with lectures 19 and 20 supplied on MyCourses/Resources</p> <p>Lectures via Panopto: 19 and 20 supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab -Lab 4: Questions in ppt pdf in My courses / Resoucerces</p> <p>Answers to Lab 4 questions will be supplied as Powerpoint pdf on MyCourses/Resources on Friday, October 16th</p>	<p>4. Answers to Lab 4 questions: Compare with your answers to Lab 4 on Friday</p> <p>5. List questions for Q& A/office hours zoom session on Monday Oct 19th</p>		
<p>Week 10 October 19th-23rd</p>	<p>Lecture 21: EQ 1: General principles of radiography of the equine foot and recognition of the common radiological abnormalities of the distal phalanges, navicular and distal interphalangeal joint (positioning; projections and terminology; protection)</p> <p>Lecture 22: EQ 2: Equine fetlock (normal anatomy; common abnormalities and specialized projections)</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 21, 22</p> <p>Lecture Powerpoint pdfs and lecture notes to go with lectures 21 and 22 supplied on MyCourses/Resources</p>	<p>ZOOM Q and A/office hours on Lab 4 at 10.30am on Monday October 19th (optional)</p> <p>1. Lecture 21: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 22: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Revise SAMS 502 material on normal equine radiography and radiology ppt</p>	<p>RHAP A HMA B</p>	<p>N/A</p>

<p>Week 10 continued October 19th-23rd</p>	<p>Lectures via Panopto: 21 and 22 supplied on MyCourses/Panopto (online videos)</p> <p>Term 2 (Equine radiography and radiology) material is supplied in MyCourses/ Resources in folder: <i>SAMS 502 Lectures</i></p>			
<p>WEEK 11 QUIZ open from Oct 26th to Nov 1st</p>	<p>Content: Lectures 18- 22 Lab 4</p> <p>Quiz: 14 Questions in MyCourses/ Tests & Quizzes</p>	<p>Review all course material relevant to lectures 18-22 and Lab 4 and do the Quiz once you are ready.</p> <p>Lecture and Lab course continues; see below</p>	<p>Quiz will be available for 1 week via My courses <i>Tests & Quizzes</i> 14 questions= 14 points</p>	<p>Quiz</p>
<p>Week 11 Oct 26 to Nov 1st</p>	<p>Equine Radiology; common disorders) Lecture 23: EQ 3: Equine metapodi and carpus, elbow and shoulder</p> <p>Lecture 24: EQ 4: Equine hock and stifle(normal anatomy; specialized projections; common disorders)</p> <p>Radiology Lab : Lab 5: Equine limbs and skull</p> <p>Lecture notes and Lecture Powerpoint pdfs to go with lectures 23 and 24 supplied on MyCourses/ Resources</p> <p>Lectures 23 and 24 via Panopto supplied on MyCourses/Panopto (online videos)</p> <p>Lab 5: Equine limbs and skull: Questions supplied as Powerpoint pdf on MyCourses/Resources</p>	<ol style="list-style-type: none"> 1. Lecture 23: Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture 24: Read lecture notes Review Lecture pdf Listen to Panopto 3. Revise SAMS 502 ppt 4. Lab 5: Work through the equine limbs questions 		<p>N/A</p>

<p>Week 11 continued Oct 26 to Nov 1st</p>	<p>Term 2 (Equine radiography and radiology) material is supplied in MyCourses/ Resources in folder: <i>SAMS 502 Lectures</i></p>			
<p>Week 12 Nov 2nd to 8th</p>	<p>Lecture 25: EQ 5: Radiography and radiology of the equine spine and thorax</p> <p>Lecture 26: EQ 6: Equine Musculoskeletal ultrasound (normal equine tendon and common abnormalities of the meta-carpal/ -tarsal and phalangeal regions and the stifle of horses).</p> <p>Lecture 27: EQ 7: DI of the Equine Head</p> <p>Lecture notes and lecture Powerpoint pdfs to go with lectures 25, 26 and 27 and supplied on MyCourses/ Resources</p> <p>Lectures 25, 26 and 27 via Panopto supplied on MyCourses/Panopto (online videos)</p> <p>Lab 5: Equine Limbs and skull: Answer key supplied on Friday Nov 6th in My Courses/ Resources</p>	<ol style="list-style-type: none"> 1. Lecture 25 Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture 26: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lecture 27: Review Lecture pdf Listen to Panopto 4. Revise Term 2 Lecture on Equine skull 5. Lab 5: Work through the remaining lab questions 6. On Friday read the answer key to Lab 5 (will be supplied on Friday) and compare to your answers 7. Revise basic principles of ultrasound (Term5 Lecture5) 8. List questions for Q&A/office hours zoom session on Monday Nov 9th 		<p>N/A</p>
<p>Week 13 November 9th to 13th</p> <p>Week 13 continued November 9th to 13th</p>	<p>Lecture 28: Principles of CT, MRI and Nuclear medicine</p> <p>Lecture 29: Diagnostic Imaging of the canine and feline skull;</p>	<p>ZOOM Q and A/office hours at 10.30am Lab 5 on Monday 9th (optional)</p> <ol style="list-style-type: none"> 1. Lecture 28 : Read lecture notes 	<p>HMA A RHAP B</p>	<p>N/A</p>

	<p>pathologies. Radiology / Diagnostic imaging of the Skull / Eyes and orbit/ Brain: ocular ultrasound, imaging of hydrocephalus, CT and MRI of the skull and brain in cats and dogs – examples.</p> <p>Lecture 30: Radiology of the small animal vertebral column, anatomical variants, anomalies acquired diseases</p> <p>Lecture notes supplied on MyCourses/ Resources</p> <p>Lecture Powerpoint pdfs supplied on MyCourses/ Resources</p> <p>Lectures 28-30 Panopto recordings supplied on MyCourses/Panopto (online videos)</p> <p>Lab 6 : Vertebral column, Myelography, Skull, Endocrine organs, CT, MRI: ppt questions supplied in My Courses/Resources</p>	<p>Review Lecture pdf Listen to Panopto</p> <p>2. Revise Term 1 Lecture on the SA skull</p> <p>3. Revise term 1 lecture on SA vertebral column</p> <p>4. Lecture 30: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>5. Lab 6: Work through the questions and write down your answers</p>	
<p>Week 14 November 16th to 20th</p> <p>Week 14 continued November 16th to 20th</p>	<p>Lecture 31: Small animal Myelography -Normal and most common abnormal patterns. CT and MRI of the vertebral column; case examples</p> <p>Lecture 32: DI of the Endocrine organs in cats and dogs</p> <p>Lecture 31 and 32: Lecture notes and Lectures as Powerpoint pdfs in MyCourses/Resources and via Panopto in MyCourses/ Panopto</p>	<p>1. Lecture 31: Read lecture notes Review lecture pdf Listen to Panopto</p> <p>2. Lecture 32 Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Lab 6: Work through Lab questions</p> <p>4. Lab 6: Compare with the answer key on Friday</p>	<p>N/A</p>

	<p>Lab 6: SA spine and skull: Questions supplied as Powerpoint pdf on MyCourses/Resources</p> <p>Answers Lab 6 questions supplied in My Courses/Resources on Friday</p>	5. List questions for Q&A zoom session on Monday Nov 23 rd		
<p>Week 15 Nov 23rd to 27th</p>	<p>Lecture 33: Diagnostic imaging of the Skull / Eyes and orbit/ Brain; Musculoskeletal ultrasound in the dog and cat, Ultrasound of small parts</p> <p>Lecture 33: Lecture notes and Lecture as Powerpoint pdfs in MyCourses/Resources and via Panopto in MyCourses/ Panopto</p>	<p>ZOOM Q and A/office hours on Lab 6 at 10.30am on Monday 23rd (optional)</p> <p>Lecture 33: Read lecture notes Review Lecture pdf Listen to Panopto</p>	RHAP A HMA B	N/A
<p>Week 16 Nov 30th- Dec 4th</p>	<p>Study Week</p> <p>Final exam content: Lectures 23 to 33; Labs 5 & 6</p>	<p>ZOOM Q and A/office hours at 10.30am Monday 30th (optional)</p> <p>Review for final exam: - Lectures 23 to 33 - Labs 5 and 6</p>	HMA A RHAP B	N/A
<p>Week 17 December 7th to 11th</p>	<p>Final exam: 55 questions Monday December 7th 12-1.30pm ExamSoft</p>			FINAL

Assessment Summary:

Question Allocation:	Point Allocation
Total questions = 138	Total points: 138
Midterm 69 questions <i>ExamSoft</i>	Midterm 69
Quiz 14 questions Test & Quizzes	Quiz 14
Final 55 questions <i>ExamSoft</i>	Final 55

Student Groups for optional Zoom sessions

Group A Surnames A to L

Group B Surnames M to W

Adams, Taylor	Mabine, Joanna
Albertson, Isaiah	MacDonald, Jennifer
Armas, Kristie	Macpherson, Maxine
Astrin, Dallas	Mark, Justina
Barahona, Maria	McCourt, Allison
Barros Castañeda, Jennifer	McGarvey, Elizabeth
Bernal, Hayley	McGinley, Alaina
Bihlear, Laura	McHarg, Joshua
Blanc, Mark	Mendoza, Krystal
Briley, Kayla	Metral, Cristina
Bristol, Carly	Miceli-Kelley, Jocelyn
Broeder, Amanda	Millikin, Shannon
Bueno, Delisa	Mitchell, Halle
Calhoun, Chanel	Monterosso, Ariana
Cameron, Katelynn	Mooney, Taryn
Carpenter, Mikayla	Morgan, Romina
Carulla Martinez, Laura	Narburgh, Hannah
Case, Chandler	Nay, Caitlyn
Cather, Zachary	Neeland, Brittany
Chavez, Christina	O'Connell, Amber
Clark, Nicole	Oden, Tyler
Cobb, Courtney	Ogdon, Camille
Compta, Jacqueline	Pensabene, Alexa
Coppola, Maria	Popp, Lindsay
Cragolin, Cody	Powers, Tara
Curro, Marisa	Pratt, Margaret
Embleton, Haley	Quinlan, Sarah
Faletti, Tasha	Ramos, Kelly
Fearon, Jasmyn	Remillard, Jaimie
Fleming, Caitlin	Reuter, Jessica
Foster, Erica	Richards, Alyssa
Frangiosa, Alexandra	Ritz, Anna
Giacomelli, Gina	Rodier, Jaren
Godau, Annelise	Schuchman, Emily
Goode Molinaro, Cara	Setzer, Haley
Gore, Kyra	Sheppard, Steven
Grenager, Katelyn	Shulse, Taylor
Grogg, Kelly	Solomon, Jessica
Hammett, Jared	Southerland, Paula
Henriques, Natalie	Stensland, Erin
Hines, Sharymarie	Sweetman, Nakia
Holl, William	Tarpley, Micha
Hovan, Brittany	Todorovic, Sofija
Johnson, Genevieve	Valente, Olivia
Kelley, Kristina	Viglietta, Brianna
Kendrot, Adam	Wang, Yu
Kenly, Abigail	Wilhelm, Cara
Knott, Patrishia	Williams, Katherine

Kurgan, Cullen Lee, Lianne Leisz, Collin Lipari, Vittoria Loveday, Montana	Willis, Olivia Wisti, Amanda Wolfingbarger, Alexandra Worley, Erin
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ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
***INTRODUCTION TO SURGICAL SKILLS* (1 credit)**
SAMS514 TERM 4
FALL 2020

I. Course Faculty and Staff Information

Course Director: Tara Paterson, DVM, MSc., Associate Prof
Email: tpaterson@sgu.edu

Instructors: Marta Lanza Perea, DVM, MRCVS, MSc, Associate Prof
Email: mperea@sgu.edu

Emily Turitto, DVM, Assistant Professor
Email: eturitt1@sgu.edu

Keith Kalasi, DVM, Assistant Professor
Email: kkalasi@sgu.edu

Office Hours: Mondays 11am to noon (via Zoom)

II. Course location

All course material will be available on Sakai. Sakai Lessons will be used for weekly organization of tasks with direct links to resources as needed.

III. Prerequisite and/or co-requisite courses

None.

IV. Required resources

- Veterinary Surgery: Small Animal (2nd ed)(Johnston & Tobias, 2018)

Other than the required & recommended textbooks, all other course resource material will be available on Sakai:

SAMS514 Suture Pattern Guide

Lecture recording & notes

SAMS514 demonstration videos

Students will also require a laptop or other electronic device that will enable them to access recorded lectures & videos as well as participate in live, interactive sessions on Zoom (functional camera and microphone required).

V. Recommended resources

- Veterinary Surgical Preparation and Protocol (Pasquini, 2011)
- Fundamentals of Small Animal Surgery (Mann, Constantinescu & Yoon, 2011)

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

All students will require the following supplies for learning the surgical skills taught in this course:

- Suture pad model
- Intestinal suture model (max 6" in length)
- Needle holder (Crile-Wood or Mayo-Hager)
- Thumb forceps (Brown-Adson or Adson)
- Doyen suture scissors
- Suture material (silk or synthetic monofilament/multifilament recommended, size 2-0 or 3-0)
- OPTIONAL: 3 X Halsted hemostatic forceps (or similar)

In addition, students will require video recording capability in order to produce self-recorded videos that will be submitted for assessment. Use of laptop or cellphone camera would be appropriate.

VIII. Course rationale

This course is an introductory surgery course and is designed to lay the foundation for advanced 3rd year courses in surgery including both Small Animal Surgery (SAMS518) & Large Animal Surgery (LAMS516) as well as clinical surgical courses including Junior Surgery and Anesthesia lab (SAMS527) and Small Animal Clinical Services (SAMS528).

IX. Course-level outcomes

See Appendix 1.

X. Lesson-level outcomes

See Appendix 2.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix 3.

XII. Course Schedule

See Appendix 4.

XIII. Grading and assessment policy, and grading rubrics

SVM Grading scale:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Student assessment will be based on homework assignments, surgical skills assessments, and one final written examination.

Homework assignments:

Students will be required to complete two homework assignments during the term. These will be graded by SAMS514 course instructors. All homework assignments will be due on the Sunday of the assigned week (see Course Schedule for details).

Surgical skills assessments:

Students will be required to demonstrate proficiency in all surgical skills taught during the course (see Appendix 2 for full list of skills). Assessment will be in the form of one scheduled, real-time online assessment and one self-recorded video. Performance will be graded based on a scale of 0-10 with scores ≥ 7 being satisfactory. Any performance graded *below 7* is deemed unsatisfactory. To ensure adequate proficiency, the student will be asked to meet virtually with a course instructor to repeat the demonstration of the surgical skill(s) in question. However, there will be no change in the original grade assigned.

Final written examination:

The final written examination is comprehensive and will cover **all** topics discussed in the course.

Bonus Exam question assignment:

Each student will have the opportunity to submit one multiple-choice style examination question during the term. Each student will be assigned to a particular topic discussed within the course upon which the question should be based. A bonus of 1% will be applied to the *final course grade* for students who complete the assignment satisfactorily. This assignment is *optional*.

Summary of course grade:

Homework	15%
Surgical skills assessments	50%
Final written examination	<u>35%</u>
	100%
Bonus assignment	+ 1%

The course has been designed as a *mastery course*. **The importance of clinical skills in this course must be emphasized and recognized.** Any student who fails to demonstrate adequate clinical proficiency and/or fails to remediate any skill(s) that was/were deemed unsatisfactory in a skills assessment will result in failure of the course (F Grade).

XIV. Recommended study strategies

Surgical skills: Routine & frequent practice of the surgical skills taught in this course is essential for skill acquisition and long-term skill retention. This strategy will also minimize the last-minute panic before the live surgical skills assessment and will help the student to identify those skills they may be struggling with. Attendance at weekly Zoom Office hours is encouraged for those students in need of review of surgical skills and if necessary, additional assistance can be arranged via email with the course director (tpaterson@sgu.edu). If a mutually convenient time to meet cannot be established, then a request will be extended by the course director to one of the other course instructors. When seeking additional assistance for practical skills, *please ensure that you have practiced before the meeting and have identified the problems you are having. Do not schedule such meetings and expect all skills to be re-taught to you.*

Didactic material: The student is encouraged to utilize the Lesson Level Outcomes (Appendix 2) to guide their preparations for the final written examination.

XV. Instructor's expectations of the student

The student is expected to attend any real-time lectures wherever possible. It is expected that assessments and assignments will be completed within the given time frame and students will reach out to the course director in the event that a deadline is not realistic. Upon completion of this course, it would be appreciated if the student would take the time to complete the course evaluations since your thoughts, comments and constructive criticisms are extremely important and valuable to us as we continue to develop and improve this course.

Most importantly, we ask students to take care of their mental & physical health during these trying times.

XVI. Professionalism statement

~~Course director's expectations regarding professionalism~~

~~Professional behavior in the virtual classroom is expected at all times. The use of cellphones, social media or other entertainment media are not permitted during real-time lectures or other live interactions. Further, the student is expected to approach all assessments and assignments in a professional and honest manner.~~

XVI.XVII. Attendance/Participation

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVII.XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVIII.XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code

statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examssoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XIX-XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

APPENDICES

Appendix 1. CLOs (Course Learning Outcomes)

Upon successful completion of this course, the student will be able to:

CLO1: Demonstrate proficiency in a variety of basic surgical skills including knot tying, suture patterns, ligation, finger trap, instrument handling.

CLO2: Describe the various classifications of suture material and differentiate between types of suture material. Apply knowledge of suture material and surgical needles to the selection of an appropriate suture material + needle combination for a given surgical procedure.

CLO3: Describe in detail the appropriate procedures for surgical preparation of both the surgeon & patient.

CLO4: Explain the importance of asepsis and describe the various aspects of aseptic technique used to minimize the risk of surgical infection.

CLO5: Describe the stages of wound healing & principles of wound management and apply these to the management of wounds.

CLO6: Discuss principles of bandaging and apply this knowledge in the selection and application of commonly used bandages & slings.

Appendix 2. LLOs (Lesson Learning Outcomes)

Lecture/Surgical Skills Learning Outcomes	Course Learning Outcome Number(s)
LECTURE: Surgical Preparation	
Explain the difference between sterilization, disinfection & antisepsis	3, 4
List the common forms of sterilization used in veterinary medicine and their applications/limitations: steam, ethylene oxide, ionizing radiation, gas plasma, paracetic acid, cold chemical sterilization	3, 4
Discuss cold sterilization and list the appropriate chemical agents used for this method of sterilization	3, 4
Explain the difference between antiseptic & disinfectant	3, 4
Cite the spectrum of activity for the following antiseptics: povidone iodine, chlorhexidine, hydrogen peroxide, alcohol-based combination antiseptic preparations	2, 4
Define asepsis	4
Describe the various procedures used in aseptic technique performed by the surgical team	3, 4
Describe the ways to decrease a surgical patient risk for SSI	3, 4
Cite Halsted's surgical principles	4
Describe the steps taken by the surgical team when preparing a patient for surgery	3
Describe the procedures for surgical site preparation	3
Describe the proper technique for quarter drape application	3
List the surgical apparel worn by the surgical team and describe their function	3

Describe the following processes involved with pre-surgical preparation of the surgeon: aseptic hand scrub, application of surgical gown, open & closed gloving techniques	3, 4
LECTURE: Suture material & surgical needles	
Describe the properties of each of the following types of suture material: Surgical gut, polyglactin 910 (Vicryl – plain, Rapide, Plus), polydioxanone (PDS), polyglecaprone 25 (Monocryl), silk, nylon, polyester, polypropylene, stainless steel, barbed suture	2
Classify the suture materials above based on the following characteristics: absorbable versus non-absorbable, strand type (mono-versus multifilament), origin of fibers	2
Discuss the inherent characteristics of suture material: size, flexibility, memory, surface friction, knot security, tensile strength & tissue reactivity	2
Describe the systems of suture material sizing	2
Discuss the purpose of suture material coatings and cite the benefits of triclosan	2
Explain the difference in the process of absorption between natural and synthetic suture materials	2
Discuss the factors to consider when selecting a suture material for a given procedure	2
List the potential complications of suturing	2
Discuss the biomaterial alternatives to suture & list their applications: tissue adhesive, surgical staples & hemoclips	2
Identify the parts of a surgical needle	2
Discuss the factors to be considered when selecting a surgical needle	2
List the various types of surgical needle point and pair these with the appropriate tissue	2
LECTURE: Wounds	

Describe the different types of wounds	5
Describe the phases of wound healing and cite the predominant cell type(s) (where applicable) involved in each phase; explain the impact of each phase on a healing wound	5
Discuss the degrees of contamination and how it relates to the relative risk of surgical infection; give examples of each	5
Explain the degrees of contamination as it relates to traumatic wounds	5
Describe methods used for initial management of a traumatic wound: wound cleansing, lavage/irrigation and wound debridement	5
Cite the applications of various topical medications commonly used in wound management [including spectrum of activity (where applicable) and effect on wound healing]	5
List the types of wound healing and their associated types of surgical closure (where applicable)	5
Discuss important aspects of managing degloving wounds	5
List the benefits of honey/sugar in wound healing	5
List the functions of drains and indications for their use	5
Compare the Penrose & Jackson-Pratt drains	5
Discuss the key principles of drain placement	5
LECTURE: Principles of bandaging	
List the functions of bandages	6
Cite the three layers of a bandage and their function(s)	6
Differentiate between adherent & non-adherent dressings and discuss the applications for each type of dressing	6
Discuss the basic principles of bandage application	6
Describe how to apply the following types of bandages and list their function(s): Robert Jones, modified Robert Jones (+/- reinforcement), Spica splint, cast	6

Describe how to apply the following types of orthopedic slings and list their function(s): Velpeau, Ehmer	6
List the potential complications of a bandage	6
HOMEWORK TOPIC: Surgical instrumentation & techniques	
Identify, name & describe the function of the basic surgical instruments	1
Demonstrate the proper handling of these instruments	1
List the parts of a ringed instrument	1
Describe the different methods of making incisions and their applications	1
Explain the difference between blunt and sharp dissection	1
SURGICAL SKILLS: Knots & hand ties	
Perform a square knot & surgeons knot using the 2-hand tie technique	1
Perform a square knot & surgeons knot using the 1-hand tie technique	1
SURGICAL SKILLS: Skin suture patterns - Interrupted patterns	
Perform a square knot & surgeons knot using an instrument tie	1
Demonstrate proficiency in the following interrupted suture patterns: simple interrupted, cruciate, vertical mattress, interrupted horizontal mattress, Surgeon's stitch	1
SURGICAL SKILLS: Skin suture patterns – Continuous patterns	
Demonstrate proficiency in performing the intradermal skin pattern using either a buried knot or the Aberdeen knot as the final knot	1
Demonstrate proficiency in the following continuous suture patterns: Simple continuous, Ford interlocking, Continuous horizontal mattress	1

SURGICAL SKILLS: Ligatures & 3-clamp technique	
Demonstrate proficiency in the following ligatures: Circumferential, transfixing, modified Miller's knot, strangle knot	1
Demonstrate proficiency in the 3-clamp technique for pedicle ligation	1
SURGICAL SKILLS: Hollow organ suture patterns	
Demonstrate proficiency in the following hollow organ suture patterns: appositional (simple interrupted & simple continuous), Lembert (interrupted & continuous), Cushing & Connell	1
Demonstrate proficiency in performing a Finger trap	1

Appendix 3. Alignment of Course Learning Outcomes (CLOs) to Program Learning Outcomes (PLOs)

COURSE LEARNING OUTCOME		SVM COMPETENCY
1	Demonstrate proficiency in a variety of basic surgical skills including knot tying, suture patterns, ligation, finger trap, instrument handling	23
2	Describe the various classifications of suture material and differentiate between types of suture material. Apply knowledge of suture material and surgical needles to the selection of an appropriate suture material + needle combination for a given surgical procedure.	23
3	Describe in detail the appropriate procedures for surgical preparation of both the surgeon & patient	5, 23
4	Explain the importance of asepsis and describe the various aspects of aseptic technique used to minimize the risk of surgical infection	3, 5, 23
5	Describe the stages of wound healing & principles of wound management and apply these to the management of wounds	2, 3, 5, 6, 23, 24, 25
6	Discuss the principles of bandaging and apply this knowledge in the selection and application of commonly used bandages & slings	23, 24, 25

Appendix 4. Course Schedule

**SAMS514 Course Schedule
FALL 2020**

Week	Date	Lecture	Surgical Skills	Assignment
1	Aug 17 - 23		Knots & hand ties	
2	Aug 24 - 30	Surgical Prep	Interrupted skin patterns	
3	Aug 31 - Sept 6		Intradermal	Surgical prep video homework [Due: Sept 6]
4	Sept 7 - 13	Suture material & surgical needles		Surgical instrument homework [Due: Sept 13]
5	Sept 14 - 20		Continuous skin patterns	
6	Sept 21 - 27			Skills assessment #1 (LIVE)* [Tentatively: Sept 22 & Sept 23]
7	Sept 28 - Oct 4		3-clamp technique & ligatures	
8	Oct 5 - 11			
9	Oct 12 - 18	Wounds		
10	Oct 19 - 25		Hollow organ patterns Finger trap	
11	Oct 26 - Nov 1	Bandaging		
12	Nov 2 - 8			
13	Nov 9 - 15			Skills assessment #2 (RECORDED) [Due: Nov 15]
17	Thurs Dec 10	FINAL EXAM (Examsoft)		

Zoom office hours: Mondays 11am- noon → for live assistance with surgical skills.

Lectures: Live via Zoom on select Tuesdays @ 1pm (all lectures also to be recorded).

***Skills assessment #1:** To begin at 1pm Sept 22 and 9am Sept 23.

Student schedule will be posted.



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE AND SURGERY DEPARTMENT

PHYSICAL DIAGNOSIS I SYLLABUS (1 credit)

SAMS 515 TERM 2

Fall 2020

I. Course Faculty and Staff Information

Course Director

Francesca Ivaldi, MSc DVM, Associate Professor

E-mail Address: Fivaldi@sgu.edu

Office Location: Small Animal Clinic

Office Hours: Zoom office hours will be arranged to fit with the class schedule. Additional office hours can be made by appointment. I will respond as soon as I can to any office hours requests, but feel free to remind me of your email if I have not responded within 2 days.

Other Faculty

Anne Corrigan MS DVM MS DACVIM (SAIM), Professor; acorrigan@sgu.edu

Tomas Guerrero, PD, Dr. Med. Vet., DECVS (Orthopedic), Professor; tguerrer@sgu.edu

Maria M Miccio DVM, Assistant Professor; mmiccio@sgu.edu

Tara Paterson DVM MSc, Associate Professor; tpaterson@sgu.edu

Lucian Peters DVM MSc, Assistant Professor; lpeters2@sgu.edu

Visiting Professor

Melissa Bain DVM, DACVB, MS, DACAW-AVSAB (Behavior)

II. Course location

Online- SAKAI

Resources folder will be used for lesson content

Quiz component will be used for submission of weekly quizzes

Assignment component will be used for assignment submission

Forums section will be used for class discussion and participation

We will be utilizing Panopto for lecture recordings and clinical skills instructional videos.

Zoom will be used for interactive sessions, office hours, and OSCE examination. Videos of lectures will be made available for review

III. Prerequisite and/or co-requisite courses

- a. Completion of Term 1 Small Animal related courses

- b. Current Term 2 SGU SVM student

IV. Required resources

- a. Lecture and lab resources provided on SAKAI
- b. Video resources provided on Panopto

V. Recommended resources

- a. Any physiology text, e.g. Guyton, Sjaastad, Eckert, Cunningham
- b. Anatomy text, e.g. Dyce, Sack & Wensig, Pasquini
- c. Clinical skills text
- d. Laptop or computer with functional camera, microphone and internet connection

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

- a. Stethoscope
- b. The skills you will be exposed to require repetition on a live animal (cat or dog) or life-like model, like a stuffed animal
- c. The OSCE requires you to DEMONSTRATE the clinical skills you have learned on a live animal (cat or dog) or life-like model, such as a stuffed animal

VIII. Course rationale

This course is a follow-up to Veterinary Clinical Orientation LAMS 502 and consists of a combination of didactic, hands-on and problem-based learning sessions focusing on small animal patients. This course expands the basic physical examination to include specialty examinations including orthopedic, neurologic, dermatologic, cardiovascular, respiratory, gastrointestinal, urogenital, and ophthalmologic exams. The course reinforces skills such as restraint and handling, and also introduces topics such as injection skills, medical record skills, clinical reasoning, and literature review. The video library of clinical skill demonstrations are tailored to provide the veterinary student with visual guidance on how to perform and practice medical exams that are commonly performed in the everyday clinical setting. Not only are the skills acquired in this course useful as a foundation for additional clinical skills and pre-clinical rotations at SGU, but integral to their successful completion of the 4th year clinical rotations abroad and for eventual careers in veterinary practice.

Course Goals:

- To prepare the students for the second year veterinary curriculum. To familiarize the student with the essentials for performing a thorough and proper physical examination of small animals with particular focus on the following systems: gastrointestinal, urogenital, cardiovascular, respiratory, ophthalmological, neurological, musculoskeletal, dermatological.
- To encourage students to become comfortable with the basics of physical examination and animal handling / restraint.

- To introduce students to clinical reasoning, and the problem-based approach to veterinary medicine
- To introduce students to proper injection sites and protocol, namely SQ, IM, and IV
- To strengthen record keeping skills
- To build upon basic dog and cat behavior knowledge

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to...

CLO 1: Demonstrate general physical examination, using the dog as the model
CLO 2: Demonstrate proper restraint techniques for small animals, using the dog as the model
CLO 3: Understand the basics of proper medical record keeping
CLO 4: Apply clinical reasoning to basic veterinary cases
CLO 5: Critically evaluate literature and correlate it to topics presented in the course
CLO 6: Identify appropriate injection site protocol and technique
CLO 7: Identify and manage basic behavioral cues of the dog and cat in the clinical setting

X. Lesson-level outcomes

Lecture /lab	Lecture/Lab Learning Outcome	Course Learning Objective
Physical exam, Handling and restraint	<p>Observe proper restraint technique for holding a dog in the following positions: Standing, Sitting and for jugular phlebotomy, Sternal recumbency and for cephalic vein phlebotomy, Lateral recumbency and for lateral saphenous vein phlebotomy</p> <p>Observe application of a gauze and a commercial muzzle</p> <p>Observe proper technique in lifting small animal patients from floor to examination table and back to floor</p> <p>Observe a complete general physical examination, including distant and near examinations</p> <p>Practice proper use of physical examination form</p> <p>Understand temperature measurement techniques for dog or cat</p> <p>Identify signs of dehydration in small animal patient</p>	1,2
Ophthalmology examination	<p>Observe physical examination of the eye</p> <p>Discuss clinical signs of ocular disease</p> <p>Evaluate ocular structures and adnexa for abnormalities, including eyelashes, conjunctiva, nictitating membrane, cornea, anterior chamber, iris, pupil</p> <p>Evaluate cranial nerve function by examining cranial nerve reflexes and responses, including palpebral, and pupillary light reflex, and menace response</p>	1

	<p>Evaluate vision</p> <p>Understand anatomical location of lacrimal glands, evaluate patency of nasolacrimal duct</p> <p>Observe ocular minimum database, including Schirmer tear test, fluoresceine stain</p> <p>Understand intraocular pressure and how to obtain</p> <p>Discuss and describe the examination of the retina</p> <p>Observe direct and indirect ophthalmologic exam</p>	
Musculoskeletal examination	<p>Observe complete musculoskeletal examination in distant and near evaluation including postural reaction tests (proprioceptive tests), cutaneous trunci and perineal reflexes</p> <p>Observe spinal palpation and neck range of motion</p> <p>Observe proper musculoskeletal exam of a standing dog</p> <p>Observe proper musculoskeletal exam of a recumbent dog</p> <p>Evaluate muscle tone and symmetry</p> <p>Observe Campbell test technique for elbow stability</p> <p>Observe examination for patellar luxation</p> <p>Observe techniques for evaluation of stifle for ruptured cranial cruciate ligament, cranial drawer evaluation and tibial compression test.</p> <p>Observe techniques to evaluate stability of the hip joint, Ortolani technique to diagnose hip dysplasia and palpation of landmarks for evaluation of hip luxation</p>	1
Dermatological examination	<p>List the basic structures of the skin & cite the functions of the skin</p> <p>List the anatomic sites that should be examined during a dermatologic examination</p> <p>Describe the following dermatologic lesions: macule, patch, hyperpigmentation, hypopigmentation, papule, pustule, nodule, wheal, abscess, vesicle, bulla, erosion, ulcer, excoriation, lichenification, epidermal collarette, comedo, alopecia, crust, scale</p> <p>Identify dermatologic lesions using images of actual derm cases</p> <p>For each of the following dermatological diagnostic tests, cite the indication(s) of the test, describe how to perform the test and explain how to prepare the samples for evaluation: skin scraping (deep & superficial), impression smear, tape cytology, ear cytology</p> <p>Identify the following microbes: cocci bacteria, rod-shaped bacteria, yeast</p> <p>Describe how to perform an otoscopic exam</p>	1
Respiratory examination	<p>Determine the respiratory rate in the dog and discuss normal values</p> <p>Perform percussion of the thorax</p> <p>Perform palpation of the trachea</p> <p>Observe proper use of stethoscope, and discuss parts of stethoscope</p> <p>Perform auscultation of the lungs and trachea</p> <p>Identify and discuss breathing patterns</p> <p>Discuss difference between stridor and stertor</p> <p>Evaluate patency of the external nares</p>	1

	<p>Identify common clinical signs associated with nasal cavity disease</p> <p>Discuss significance of “crackles” when ausculted in the lungs</p> <p>Discuss possible causes for decreased/absent bronchovesicular sounds</p>	
Cardiovascular examination	<p>Determine the heart rate in the dog and discuss normal values</p> <p>Discuss sites of pulse evaluation in dogs and cats</p> <p>Explain what a “pulse deficit” is</p> <p>Identify Apex beat</p> <p>Perform auscultation of the heart, including all valve areas</p> <p>Explain heart sounds (S1, S2, S3, S4)</p> <p>Discuss what a murmur is, and what lesions can be associated with murmurs</p>	1
Oral and Gastrointestinal examination	<p>Observe how to perform an examination of the oral cavity, including evaluation of the mucous membranes, tongue, hard palate, pharyngeal region</p> <p>Identify and describe dental and gingival abnormalities, recall timing or eruption of deciduous and adult teeth in dogs and cats</p> <p>Observe and discuss abdominal palpation technique and findings</p>	1
Urogenital examination	<p>Discuss rectal examination, including normal findings and possible abnormalities</p> <p>Evaluate and discuss male and female external urogenital system</p>	1
Neurological examination	<p>Perform a thorough neurologic examination, including distant and near exams</p> <p>Observe evaluation of the cranial nerves</p> <p>Observe postural reaction tests (proprioceptive tests), including hopping, hemi-walking, wheelbarrowing, proprioceptive positioning, extensor postural thrust, placing, both tactile and visual, and righting.</p> <p>Observe evaluation of spinal reflexes</p> <p>Observe cutaneous trunci and perineal reflex</p> <p>Observe gentle spinal palpation and neck range of motion</p>	1
Medical Records	<p>Identify and institute appropriate medical record keeping skills</p>	3
Clinical Reasoning Skills	<p>Observe clinical reasoning to basic veterinary cases</p>	4
Injection Guidelines	<p>Identify important factors in the decision of route of administration of injectable medications</p> <p>Understand technique and possible complications of different routes of administration of injectable medications, including subcutaneous, intramuscular, intravenous</p> <p>Observe technique of withdrawing injectable medications from vial</p> <p>Observe technique of injecting medications</p>	6
Literature review assignment	<p>Perform literature review corresponding to course topic</p>	5

Behavior	Understand basic dog and cat behavior and management techniques within the clinical setting	7
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XI. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies

Course Level Outcome	SVM PLO
CLO 1: Demonstrate general physical examination, using the dog as the model	PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
	PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.
CLO 2: Demonstrate proper restraint techniques for small animals, using the dog as the model	PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.
CLO 3: Understand the basics of proper medical record keeping	PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
	PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.
	PLO 27 Demonstrate and model effective client communication and ethical conduct.
CLO 4: Apply clinical reasoning to basic veterinary cases	PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.
CLO 5: Critically evaluate literature and correlate it to topics presented in the course	PLO 11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.
	PLO 15 Model lifelong continuing education and professional development.
CLO 6: Identify appropriate injection site protocol and technique	PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.
CLO 7: Identify and manage basic behavioral cues of the dog and cat in the clinical setting	PLO 7 Evaluate and analyze normal versus abnormal animal behavior.

XII. Course Schedule

See Appendix

XIII. Grading and assessment policy, and grading rubrics

The grade for this one-credit course will be as follows:

Homework assignment 10 points

Quizzes 45 points

OSCE examination 30 points (requirement for advancement)

SAKAI Forums interaction (required) for the Clinical Reasoning and Medical Records Lectures. No points are associated but points WILL be deducted for lack of interaction.

Quizzes: After each lecture, you will take an online quiz consisting of 5 multiple choice questions. You will be given 9 quizzes. Ensure that you look at the due date and time of the quizzes, and that you receive a confirmation message that your grade has been submitted. Quizzes that are not submitted ARE NOT GRADED AND COUNT AS A ZERO.

OSCE: Will consist of stations covering: Handling/restraint/Lymph Nodes, Ophthalmology, Dermatology, Musculoskeletal, Gastrointestinal/Urogenital, Neurology, Cardiology/Respiratory.

This term the OSCE will be completed via individual Zoom sessions. You will have 30 minutes to perform 7 skills as per a rubric that will be sent to you prior to the evaluation. Individual scheduling will be finalized closer to exam time.

It is very important that you ensure you are confident with all of the listed components of the lab objectives forms and the skills covered in the video sessions, as these are the same skills that you will be asked to perform during the OSCE assessment. If an unsatisfactory grade is achieved during the OSCE, the student will be required to repeat the OSCE before being permitted to advance.

The importance of clinical skills in this course must be emphasized and recognized. Failure to remediate any OSCE before the end of the term will result in failure of the course (F Grade).

Homework: There will be one homework assignment at the end of the semester. The window for submission will open two weeks prior to the due date. No late assignments will be accepted, and a ZERO grade will be recorded for any assignment not submitted by the deadline. Give yourself time to work around any technological issues, health issues, family visits or other unforeseen issues which could cause complications and delays.

Homework Instructions:

Find ONE (1) peer-reviewed research paper or journal article that ***directly*** correlates to any of the topics and/or concepts introduced in this course. Attach the sited work, summarize the pertinent and applicable points from the paper and **describe how this paper is relevant to the teachings of *this course***. Use approximately 500 words to complete it. This assignment must be performed individually. Late submissions will NOT be accepted.

Grading will be based on:

- 1) submission of the original article (not just the link, the whole article) (2pt)
- 2) submission of your summary and discussion of the article (2pt)
- 3) your description of the material and its **relevance to the course** (4pt)
- 4) word count (roughly 500 words, doesn't have to be exact, but less than a novel, and more than just a few sentences). (2pt)

This shouldn't take you more than an hour or so.

If you are having difficulty, or require guidance, be sure to write to me WELL IN ADVANCE of the submission deadline so we can get things sorted out early.

Please review the student handbook and the regulations regarding plagiarism.

Grading Scale

>89.5	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

This course is dependent on repeated performance of the physical, hands-on skills and knowledge of didactic information relevant to performing and interpreting physical examination on the dog as the model for small animal evaluation. Watch the provided videos and review the lecture materials to guide you as you practice the skills on a live animal model as is available to you. It is not advised to seek external videos or study materials.

XV. Instructor's expectations of the student

The student is expected to be familiar with the required material, including reading the provided literature and watching the provided videos posted on SAKAI. The

student is expected to participate actively in their own learning and seek assistance for any concept or component of the lecture or laboratory material with which they are having difficulty. The student is responsible for his or her own learning. If the student has concerns, questions, or requires clarification of any of the concepts presented during the course, the onus rests on the student to seek assistance from either the course director or from the teaching faculty presenting that particular topic.

XVI. Professionalism statement

Students are expected to exhibit professional behavior at all times, not just on campus or in class and laboratory sessions, but also within the community and abroad.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (Fivaldi@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

Students will not be participating in ExamSoft experience this term.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is strictly prohibited

Appendix on next page:

SAMS 515 Physical Diagnosis I Fall 2020					
Week	Lecture topic	Course Online Format	Weekly Learning Schedule	Faculty	Assessment Schedule
Week 1	1: Course Intro, PE, Handling and Restraint	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	August 17-21 Review Lecture 1 pdf, watch associated Panopto Clinical Skills Instructional Videos	Ivaldi	Review Lecture 1 Proceed to take Quiz A 5 points Due Monday August 24
Week 2	2: Clinical Reasoning	Synchronous Zoom Session	Wed August 26 12:30-2:30 AST/ Grenada time	Corrigan	Forum interaction mandatory
Week 3	3: Behavior	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	August 31-September 4 Review Lecture 3 pdf, watch associated Panopto Clinical Skills Instructional Videos	Bain	Review Lecture 3 Proceed to take Quiz B 5 points Due Monday Sept 7
Week 4	4: Gastrointestinal/Urogenital	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	September 7-11 Review Lecture 4 pdf, watch associated Panopto Clinical Skills Instructional Videos	Peters	Review Lecture 4 Proceed to take Quiz C 5 points Due Monday Sept 14
Week 5	5: Cardio/Resp	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	September 14-18 Review Lecture 5 pdf, watch associated Panopto Clinical Skills Instructional Videos	Corrigan	Review Lecture 5 Proceed to take Quiz D 5 points Due Monday Sept 21
Week 6	6: Ophthalmology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	September 21-25 Review Lecture 6 pdf, watch associated Panopto Clinical Skills Instructional Videos	Ivaldi	Review Lecture 6 Proceed to take Quiz E 5 points Due Monday Sept 28
Week 7	7: Musculoskeletal	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	September 28-October 2 Review Lecture 7 pdf, watch associated Panopto Clinical Skills Instructional Videos	Guerrero	Review Lecture 7 Proceed to take Quiz F 5 points Due Monday Oct 5
Week 8	8: Neurology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	October 5-9 Review Lecture 8 pdf, watch associated Panopto Clinical Skills Instructional Videos	Narak	Review Lecture 8 Proceed to take Quiz G 5 points Due Monday Oct 12
Week 9	9: Dermatology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	October 12-16 Review Lecture 9 pdf, watch associated Panopto Clinical Skills Instructional Videos	Paterson	Review Lecture 9 Proceed to take Quiz H 5 points Due Monday Oct 19
Week 10	10: Injection Guidelines	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	October 19-23 Review Lecture 10 pdf, watch associated Panopto Clinical Skills Instructional Videos	Miccio	Review Lecture 10 Proceed to take Quiz I 5 points QUIZ Due Monday Oct 26
Week 11	11: Medical Records	Synchronous Zoom Session Lecture Powerpoint pdf on MyCourses/Resources	Wed October 28 12:30-2:30 AST/ Grenada Time	Ivaldi	Forum interaction mandatory
Week 12	12: Assignment Due	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	November 2-6 Review Lecture 12 pdf, watch associated Panopto Clinical Skills Instructional Videos	Ivaldi	ASSIGNMENT Due Friday Nov 6
Week 13	FINAL OSCE EXAMINATION	All skills are listed in the syllabus, on lab objectives sheets and associated instructional videos/resources	Wed November 11 Individual Synchronous Zoom session	Multiple	Exam Schedule will be emailed to you separately and placed on SAKAI



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Small Animal Medicine and Surgery
Small Animal Surgery SYLLABUS (5 credits)
SAMS 518 TERM 5
FALL 2020

I. Course Faculty and Staff Information

Course Director:

Rodolfo Bruhl-Day, DVM (Hons), Ch.D. SAS, D.CLOVE, Ed.D, CPMV Recognized Specialist SAS (ST), Professor

E-mail Address : rbruhl-day@sgu.edu

Office Location: Cassia Bldg., top floor.

Office Hours: Office hours will be arranged to fit the class schedule.

Additional office hours can be made by appointment.

Even though I may not respond immediately, I will get back to you asap. Please contact me again if I do not respond within 2 days.

Other SGU course Faculty members:

Tomas Guerrero, PD, Dr. Med. Vet., DECVS (Orthopedic), Professor; tguerrero@sgu.edu

Francesca Ivaldi, DVM, MSc, (Dentistry), Associate professor; fivaldi@sgu.edu

Marta Lanza-Perea, DVM, MSc; Associate professor mperea@sgu.edu

Tara Paterson, DVM, MSc.; Associate professor; tpaterson@sgu.edu

VP's:

Dr. H. Featherstone, DVM, MRCVS, DECVO (Ophthalmology); heidifeatherstone68@gmail.com

Mr. Jim Merritt (Dental Radiology); jim.merritt39@gmail.com

Course professors should be contacted by email, or call ext. 3109 (Mrs. Emmanuel, SAMS Executive Secretary).

Staff:

Mrs. F. Emmanuel, Executive Secretary, call ext. 3109; femmanuel@sgu.edu

Ms. R. Thornhill, Secretary, call ext. 3474; rthornhill@sgu.edu

II. Course location

All lectures this term will be online.

All lectures will be recorded and archived via Panopto.

III. Prerequisite and/or co-requisite courses: Current 5th term SVM student.

IV. Required resources:

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only, as pdf files. The slides will be accessible for digital notes. For certain classes or subjects, scientific articles, videos, or textbook references may be assigned. These additional materials will be posted on Sakai.

The main references for this course are:

S. A. Surgery

- * Tobias et al. Small Animal Surgery; Elsevier 2nd edition, 2017
- * Pasquini et al. Veterinary Surgical Preparation and protocol, SUDZ Editor, 2011

Ophthalmology

- * Gelatt et al. Veterinary Ophthalmology. Lippincott 4th edition, 2007
- * Maggs, D. et al. Severin's Fundamentals of Veterinary Ophthalmology. Elsevier 6th edition, 2018.

Dentistry

- * Handout lectures by Dr. Ivaldi

V. Recommended resources:

- * Fossum et al. Small Animal Surgery. Mosby 4th edition, 2013
- * Fossum et al. Small Animal Surgery. Mosby 5th edition, 2019

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

N/A

VIII. Course rationale

This course is a keystone in the veterinary curriculum. It was designed to use a team teaching approach to tie together the basic science courses in the first 4 terms and prepare the students for the third year small animal medicine and surgery courses.

The course will present common complaints, history, clinical signs, PE findings and specific diagnostic testing with the goal of students being able to learn about problem lists, make differential diagnoses, and introduce veterinary methods for case work up.

Students will be exposed to the most common surgical procedures to treat different organ systems' surgical diseases. Use of state of the art technology will be included among the different surgical procedures.

Course Goals:

- To prepare the students for the fourth year veterinary curriculum
- To introduce surgical diseases in small animals.

- To introduce the student into the most commonly applied surgical techniques, their monitoring and postop evaluation.

- To help the students develop clinical problem solving skills, medical record abilities, professional development and experience with case work up
- To learn how to select appropriate diagnostic tests
- To reinforce continuing education and research appreciation

IX. Course-level outcomes

See Appendix II and Course Schedule

X. Lesson-level outcomes

See Appendix II and Course Schedule

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See appendix II and Course Schedule

XII. Course Schedule

See Appendix 1

XIII. Grading and assessment policy, and grading rubrics

- There will be **several quizzes worth 10 points each** and **1 final examination worth 20 points**. The quiz/exam material will come from lectures.
- **Missed examinations:** A make-up exam will be given **ONLY** when documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic **PRIOR** to the time of the test. **Excuses that are issued after the examination has been given will not be accepted.** Do not expect to be excused for weddings or birthdays. Funerals of very close family members are adequate justification, but little else will be accepted. Excuses to attend special meetings will be considered upon the student's performance.
- Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams will take place using same form of evaluation.
- Grading Scale

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+

69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

- All exam guidelines are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

- Prior to class, or after class, reading the corresponding chapters in the recommended textbooks
- Office hours, consultation and active participation
- After each lecture, summarizing and making an outline of the lecture’s most important points
- Working through cases that are provided in lecture on your own by formulating a problem and differential diagnosis list, plus a diagnostic and surgical plan prior to reviewing the lecturer’s slides with that information, is encouraged

XV. Instructor’s expectations of the student

Students are expected to read textbook chapters prior to lecture, and any additional course related information provided to further understand the area under discussion.

XVI. Professionalism statement

Students attending St. George’s University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George’s University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that it sees fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

Turn cell phones off during lectures

Turn computers off if used for different purposes other than following the lectures (i.e. e-bay, Facebook, blogs et al).

XVII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to appear for an examination without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (s) (rbruhl-day@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call 866-429-8889) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible to take a completion examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded,

examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A ExamSoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The ExamSoft student perspective video 30mins](#)
 - c. [The ExamSoft/ExamID FAQ](#)
 - d. ExamSoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy (if applicable):

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

Appendix I. Detailed Course Content:

Week	Course Lecture number:	* Course online Format:	Weekly Learning Schedule:	Assessment Schedule:
1	<p>Small Animal Surgery: 1 Surgical Approaches to the Abdomen and Incision Closure 2 Exploratory Celiotomy & Biopsy Techniques</p> <p>Reproductive tract (male) 3 Castration Dog 4 Castration Cat 5 Prostate surgery</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>August 17-21</p> <p>Review Lectures 1-5 pdfs Listen to Panopto</p>	N/A

2	<p>Surgery of the Digestive tract:</p> <p>6 Gastric Surgery 7 Gastric and Pyloric Surgery 8 GDV, pathophysiology and diagnosis 9 GDV Gastropexy techniques 10 Esophageal surgery</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>August 24-28</p> <p>Review Lectures 6-10 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz A (Lectures 1-5)</p>	<p>Review SASx lectures 1 to 5, then proceed to take Quiz # A</p> <p>(due August 28, 10 pts)</p>
3	<p>Surgery of the Digestive tract:</p> <p>11 Intestinal surgery, principles, intestinal obstruction. 12. Intestinal surgery. Small bowel, linear foreign bodies, intussusception, mesenteric torsion 13 Intestinal surgery. Enterotomy, resection and anastomosis</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>August 31 - Sept 3</p> <p>Review Lectures 11-13 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz B (Lectures 6-10)</p>	<p>Review SASx lectures 6 to 10, then proceed to take Quiz # B</p> <p>(due September 5, 10 pts) (*VEA exam on the 4th)</p>
4	<p>Surgery of the Digestive tract:</p> <p>14 Intestinal surgery. Cat megacolon 15 Intestinal surgery. Large bowel. Neoplasia.</p> <p>Surgery of the Urinary tract:</p> <p>16 Kidney surgery 17 Ureteral surgery 18 Bladder surgery</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>Sept 7 – 11</p> <p>Review Lectures 14-18 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz C (Lectures 11-13)</p>	<p>Review SASx lectures 11 to 13, then proceed to take Quiz # C</p> <p>(due September 11, 10 pts)</p>

5	<p>19 Urethra 20 Feline Urethral surgery</p> <p>Reproductive tract (female) 21 Spay, dog and cat</p> <p>Surgery of the Thorax: 22 Surgical Approaches to the Thorax and Incision Closure. 23 Thoracic surgery: PDA, Vascular ring anomalies (PRAA).</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>Sept 14 - 18</p> <p>Review Lectures 19-23 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz D (Lectures 14-18)</p>	<p>Review SASx lectures 14 to 18, then proceed to take Quiz # D</p> <p>(due September 18, 10 pts)</p>
6	<p>Surgery of the Thorax (cont.): 24 Pneumothorax, thoracocentesis techniques 25 Pulmonary surgery</p> <p>Surgery of the Head and Neck 26 Upper Respiratory Tract. Brachycephalic Airway Syndrome</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>Sept 21 - 25</p> <p>Review Lectures 24-26 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz E (Lectures 19-23)</p>	<p>Review SASx lectures 19 to 23, then proceed to take Quiz # E</p> <p>(due September 25, 10 pts)</p>
7	<p>Surgery of the Head and Neck (cont.) 27 Upper Respiratory Tract. Laryngeal paralysis 28 Lower Respiratory Tract. Trachea 29 Ear Surgery 30 Salivary gland surgery</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>Sept 28 - Oct 2</p> <p>Review Lectures 27-30 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz F (Lectures 24-26)</p>	<p>Review SASx lectures 24 to 26, then proceed to take Quiz # F</p> <p>(due October 2, 10 pts)</p>
8	<p>Hernias 31 Abdominal hernias 32 Diaphragmatic hernia 33 Perineal hernia</p>	<p>ALL Lectures via Panopto</p> <p>ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources</p>	<p>Oct 5 – 9</p> <p>Review Lectures 31-33 pdfs Listen to Panopto</p> <p>Review course material in preparation for Quiz G (Lectures 27-30)</p>	<p>NO QUIZ</p>

9	Other abdominal organs 34 Spleen 35 Pancreas 36 Liver 37 Portosystemic shunts	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/Resources	Oct 12 - 16 Review Lectures 34-37 pdfs Listen to Panopto Review course material in preparation for Quiz H (Lectures 31-33)	Review SASx lectures 27 to 30, then proceed to take Quiz # G <i>(due October 16, 10 pts)</i>
10	Dentistry Lectures: 38 Nomenclature, Anatomy, Periodontal Disease 39 COHAT/ATP, Radiography, Radiographic Interpretation 40 COHAT/ATP, Scale, Polish, Closed and Open Root Planning 41 Extraction Indications 42 Extraction Methods	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/Resources	Oct 19 - 23 Review Lectures 38-41 pdfs Listen to Panopto Review course material in preparation for Quiz I (Lectures 34-37)	Review SASx lectures 31 to 33, then proceed to take Quiz # H <i>(due October 23, 5 pts)</i>
11	Dentistry Lectures: (cont.) 43 Nerve Blocks. Dental prevention and maintenance, 44 Oral Dental Conditions. Case examples. Ophthalmology Lectures: 1 Ophthalmology examination 2 Ocular Pharmacology and Therapeutics 3 Eyelid surgery. Third eyelid and conjunctiva	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/Resources	Oct 26 – 30 Review Dentistry Lectures 43-44 pdfs and Ophtho 1-3 pdfs Listen to Panopto Review course material in preparation for Quiz J (Lectures 38-42)	Review SASx lectures 34 to 37, then proceed to take Quiz # I <i>(due October 30, 10 pts)</i>
12	Ophthalmology (cont.) Lectures: 4 Orbit and globe. Lachrymal system 5 Cornea and sclera 6 Lens and vitreous 7 Retina 8 Glaucoma 9 Neuro-Ophthalmology	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/Resources	Nov 2 - 6 Review Ophthalmology Lectures 4-9 pdfs Listen to Panopto Review course material in preparation for Quiz K (Lectures 42-44 and Ophtho. 1-3)	Review Dentistry lectures 38 to 42, then proceed to take Quiz # J <i>(due November 6, 10 pts)</i>

1 3	Orthopedics Lectures: 1 Fracture biomechanics and classification- Bone healing- Bone infection 2 Fractures - Conservative treatment 3 Fractures- Pins and wires 4 Fractures -External Skeletal Fixation 5 Fractures- Plates and screws	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources	Nov 9 – 13 Review Orthopedic Lectures 1-5 pdfs Listen to Panopto Review course material in preparation for Quiz L (Ophtho Lectures 4-9)	Review lectures: Dentistry 43 to 44 and Ophthalmology: 1 to 3, then proceed to take Quiz # K (due November 13, 10 pts)
1 4	Orthopedics Lectures: 6 Fractures- Decision making 7 Fractures-Complications 8 Fractures in growing animals 9 Articular fractures 10 Osteomyelitis	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources	Nov 16 – 20 Review Orthopedic Lectures 6-10 pdfs Listen to Panopto Review Orthopedic course material in preparation for Final	Review Ophthalmology lectures 4 to 9, then proceed to take Quiz # L (due November 20, 10 pts)
15	Orthopedic conditions in Small animals Lectures: 11 Bone diseases 12 OCD 13 Conditions of the Elbow 14 Conditions of the Pelvis 15 Conditions of the Hip	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources	Nov 23 – 27 Review Orthopedic Lectures 11-15 pdfs Listen to Panopto Review Orthopedic course material in preparation for Final	NO QUIZ
16	Orthopedic conditions in Small animals Lectures: 16 Conditions of the Stifle 17 Muscular and tendon disorders 18 Mandibular and maxillary fractures 19 Spinal surgery	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources	Nov 30 – Dec 4 Review Orthopedic Lectures 16-19 pdfs Listen to Panopto Review course material in preparation for Final	Review Orthopedic lectures 1 to 19, then proceed to take FINAL (due December 4, 25 pts)
1 7	Finals week		Dec 7– Dec 11	
1 8			Dec 18 Official end of term	Total points: 140

Assessment Summary:

Examination Blue Print

A total of **140 points** will be awarded.

Point Allocation / Professor	
Quiz A 10 points Brühl-Day	Quiz H 5 points Brühl-Day
Quiz B 10 points Brühl-Day	Quiz I 10 points Lanza-Perea/Paterson
Quiz C 10 points Brühl-Day	Quiz J 10 points Ivaldi
Quiz D 10 points Brühl-Day	Quiz K 10 points Ivaldi/ Featherstone
Quiz E 10 points Brühl-Day	Quiz L 10 points Featherstone
Quiz F 10 points Brühl-Day	FINAL 25 points Guerrero
Quiz G 10 points Brühl-Day	
NOTE: In order not to create a misunderstanding, quizzes have letters instead of numbers.	

In the online course, the studied material covered in the assigned time frames is correlated with the individual quizzes.

Due to condensed course content, it is expected that some LO's will be prioritized as necessary and according to the new leaning experience, but always taking as a reference the academic standards for this course.

Appendix II:

Course-level objectives/Learning Outcomes

Upon successful completion of this course (SAMS 518) the student will be able to:

1. Recognize common surgical diseases in small animals. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for major organ systems in small animal species
2. Use substantial clinical data to create differential diagnosis list for surgical conditions in major organ systems in small animals Identify and evaluate surgical techniques used in small animal surgery, their monitoring and postoperative evaluation.

3. Apply related clinical data to select and interpret appropriate diagnostic testing for conditions in major organ systems to diagnose and surgically treat a disease. Develop cognitive skills in clinical problem solving, medical record keeping, and case work up in small animal surgical conditions. Process pertinent clinical data to select appropriate surgical procedures and their approaches, including referral.

4. Propose an appropriate surgical procedure, determine the prognosis for diseases for specific organ systems, and consider antimicrobial resistance. Analyze clinical data to design and perform appropriate surgical therapy plans for small animals, including the principles of wound healing

5. Apply knowledge of suture materials, techniques and surgical anatomy to select appropriate surgical procedures and accurate use of suture patterns. Understand and properly apply Halsted principles related to gentle tissue handling

6. Recognize surgical emergency presentations for all major organ systems and propose an appropriate treatment plan in small animals. Formulate appropriate client communication regarding history, diagnosis, treatment and prognosis.

Course Learning Outcome

SVM PLO / Category

1. Recognize common surgical diseases in small animals. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for major organ systems in small animal species	1, 2, 3, 4, 6, 7, 20, 23, 24, 25
2. Use substantial clinical data to create differential diagnosis list for surgical conditions in major organ systems in small animals Identify and evaluate surgical techniques used in small animal surgery, their monitoring and postoperative evaluation.	1, 3, 4, 6, 7, 20, 22, 23, 24, 25
3. Apply related clinical data to select and interpret appropriate diagnostic testing for conditions in major organ systems to diagnose and surgically treat a disease. Develop cognitive skills in clinical problem solving, medical record keeping, and case work up in small animal surgical conditions.	1, 7, 12, 13, 14, 16, 19, 20, 21, 22, 23, 24,25, 26, 27,
4. Propose an appropriate surgical procedure, determine the prognosis for diseases for specific organ systems, and consider antimicrobial resistance. Analyze	3, 4, 6, 7, 17, 18, 20, 21, 22, 23, 24, 25, 26

clinical data to design and perform appropriate surgical therapy plans for small animals, including the principles of wound healing	
5. Apply knowledge of suture materials, techniques and surgical anatomy to select appropriate surgical procedures and accurate use of suture patterns. Understand and properly apply Halsted principles related to gentle tissue handling	1, 2, 5, 11, 14, 17

Lecture name and number	Lecture Learning Outcomes:	Course learning outcome Number/s
1. Surgical Approaches to the Abdomen and Incision Closure	<ol style="list-style-type: none"> 1. Know the different surgical approaches 2. Recognize the tissue planes involved in gaining access to the abdomen 3. Know alternative closure methods 	1, 5
2. Exploratory Celiotomy & Biopsy Techniques	<ol style="list-style-type: none"> 1. Know the approaches, techniques and complications for exploratory celiotomy and abdominal organ biopsy 	1, 4, 5
3. Castration Dog	<ol style="list-style-type: none"> 1. Understand the indications for castration in the dog 2. Apply the different techniques for castration 	1, 2, 3, 4, 5
4. Castration Cat	<ol style="list-style-type: none"> 1. Understand the indications for castration in the cat 2. Apply the different techniques for castration 	1, 2, 3, 4, 5
5. Gastric and Pyloric Surgery	<ol style="list-style-type: none"> 1. Understand the indications and techniques for gastric surgery 2. Be able to recognize clinical aspects of pyloric outflow obstruction 3. Know surgical techniques that are available. 	1, 2, 3, 4, 5
6. GDV	<ol style="list-style-type: none"> 1. Understand the following aspects of GDV: pathogenesis, pathophysiology, and stabilization of the patient. 2. Understand the surgical techniques to prevent the recurrence of GDV. 	1, 2, 3, 4, 5
7. Intestinal surgery. Small bowel.	<ol style="list-style-type: none"> 1. Understand the clinical features of small bowel disease, diagnostic and surgical management techniques. Enterotomy, R&A 	1, 2, 3, 4

	<ol style="list-style-type: none"> 2. Know the clinical features of small bowel obstruction, diagnostic and surgical techniques to correct this condition. 	
8. Intestinal surgery. Large bowel	<ol style="list-style-type: none"> 1. Know the clinical features of large bowel obstruction, diagnostic and management techniques to correct this condition. 2. Megacolon in cats 	1, 2, 3, 4
9. Esophageal surgery	<ol style="list-style-type: none"> 1. Know the management and complications of the conditions, especially esophageal foreign bodies. Endoscopic surgery 	1, 2, 3, 4
10. Surgery of the Urinary tract	<ol style="list-style-type: none"> 1. Be able to diagnose conditions affecting the kidney. 2. Be able to recognize ectopic ureter and techniques to correct this problem. 3. Recognize the typical features of common bladder conditions. Know which of these can be corrected with surgery and the available surgical techniques. 4. Recognize sphincter mechanism incompetence and its medical or surgical treatments. 5. Recognize the typical features of common urethral conditions. FLUTD/FISC 6. Know which of these pathologies can be corrected by surgery and the techniques available for surgical correction. 	1, 2, 3, 4, 5
11. Spay, dog and cat	<ol style="list-style-type: none"> 1. Be familiar with the surgical conditions of the ovaries and uterus. 	1, 2, 3, 4, 5
12. Prostate surgery	<ol style="list-style-type: none"> 1. Be able to diagnose and treat prostatic diseases applying new surgical techniques. 	1, 2, 3, 4
13. Surgical Approaches to the Thorax and Incision Closure. Thoracic surgery, PDA, Vascular ring anomalies (PRAA), other conditions. Lung surgery	<ol style="list-style-type: none"> 1. Know the different surgical approaches to the thorax. Thoracocentesis 2. Recognize the tissue planes involved in gaining access to the thoracic cavity. 3. Know different closure methods. 4. Understand the various surgical and drainage techniques applied to the thorax. 5. Recognize the typical features of these common vascular diseases. Surgical treatment options 6. Recognize the typical features of these common cardiac conditions. Surgical treatment options 7. Recognize the typical features of other cardiac and thoracic/lung conditions. Surgical treatment options 	1, 2, 3, 4, 5
14. Upper Respiratory Tract. Brachycephalic Airway Syndrome	<ol style="list-style-type: none"> 1. Understand the pathophysiological consequences of upper airway obstruction 	1, 2, 3, 4, 5

	2. Know the surgical options for correction of the various conditions involved.	
15. Lower Respiratory Tract	<ol style="list-style-type: none"> 1. Be able to recognize the clinical, radiographic and endoscopic features of tracheal collapse and tracheo-bronchial foreign bodies. 2. Understand the options to correct obstructions of the respiratory tract 	1, 2, 3, 4
16. Ear Surgery	<ol style="list-style-type: none"> 1. Recognize otitis externa. 2. Understand lateral ear canal resection. 3. Understand the diseases and correction of problems of the pinna 4. Recognize irreversible otitis externa. 5. Understand the rationale for total ear canal ablation and lateral bulla osteotomy. 	1, 2, 3, 4
17. Rectal, perineal surgery	<ol style="list-style-type: none"> 1. Be able to diagnose conditions in the perineal area 2. Understand the management techniques used to correct these problems. 	1, 2, 3
18. External genitalia	<ol style="list-style-type: none"> 1. Know the common abnormalities of the external genitalia, mammary tumors, and their treatment 	1, 2, 3, 4
19. Hernias: Abdominal, diaphragmatic and perineal.	<ol style="list-style-type: none"> 1. Be able to recognize the most common hernia/ruptures. 2. Be able to discuss the diverse techniques that can be used in the management of the different abdominal hernias 3. Be able to discuss the diverse surgical techniques that can be used in the management of diaphragmatic hernia. 4. Be able to discuss the diverse surgical techniques that can be used in the management of perineal hernia. 	1, 2, 3, 4
20. Surgery of the head and nose	<ol style="list-style-type: none"> 1. Be familiar with the surgical conditions of the head and be able to properly manage them. 2. Salivary gland surgery. 3. Rhinotomy approaches. 4. Ear surgery 	1, 2, 3, 4, 5
21. Surgery of the neck	<ol style="list-style-type: none"> 1. Be familiar with the surgical conditions of the neck to be able to properly manage them. 2. GOLPP. Laryngeal surgery 	1, 2, 3,4
22. Surgery of the spleen	<ol style="list-style-type: none"> 1. Be able to diagnose conditions involving the spleen 2. Know the management and surgical techniques used to correct these problems 	1, 2, 3, 4
23. Surgery of the pancreas	<ol style="list-style-type: none"> 1. Be able to diagnose conditions involving the pancreas 	1, 2, 3, 4

	2. Know the management and surgical techniques used to correct these problems	
24. Surgery of the liver	1. Be able to diagnose and correct conditions affecting the liver. 2. Be able to diagnose and correct conditions affecting the extra hepatic biliary system.	1, 2, 3, 4
25. Portosystemic Shunts	1. Know the management and surgical techniques used to correct Portosystemic Shunts.	1, 2, 3, 4, 5
26. Fractures, biomechanics and classification	1. Understand how fractures occur, which forces need to be neutralized to get a successfully treatment. 2. Be able to correctly describe a fracture	1, 2, 3, 4, 5
27. Bone healing	1. Understand the many factors that influence the bone healing process.	1, 2, 3, 4, 5
28. Fractures, conservative treatment. Pins and wires	1. Understand the principles of conservative management of fractures. 2. Know indications, advantages, disadvantages and techniques for pins and wires to treat bone fractures.	1, 2, 3, 4, 5
29. External fixators (ESFD's). Bone plates and screws	1. Know the indications, advantages, disadvantages and techniques of using external fixators in fracture repair. 2. Know the indications, and techniques of using screws and plates to treat bone fractures. 3. Be familiar with different types of plates and screws	1, 2, 3, 4, 5
30. Osteomyelitis.	1. Be able to recognize and treat bone infection.	1, 2, 3, 4, 5
31. Fractures: Decision making. Complications	1. Understand how to choose the correct method of treatment. 2. Know the common causes of complications of fracture repair. 3. Know how to avoid and treat complications of fracture repair	1, 2, 3, 4, 5
32. Fractures in growing animals	1. Understand the classification of growth plate fractures, and its principles of treatment	1, 2, 3, 4, 5
33. Articular diseases	1. Recognize articular disease 2. Discuss clinical and surgical management	1, 2, 3, 4, 5
34. Bone diseases	1. Understand the general principles of bone pathology 2. Be able to discuss common examples.	1, 2, 3, 4, 5
35. Growth abnormalities	1. Growth abnormalities. OCD	1, 2, 3, 4, 5
36. Conditions of the elbow	1. Know the common diseases affecting the elbow joint 2. Be able to recognize and treat them.	1, 2, 3, 4, 5

37. Conditions of the stifle	<ol style="list-style-type: none"> 1. Be able to recognize cruciate ligament conditions 2. Know different surgical techniques. 3. Be able to recognize patellar luxation conditions 4. Know different surgical techniques. 	1, 2, 3, 4, 5
38. Conditions of the Hip.	<ol style="list-style-type: none"> 1. Be able to prepare a differential diagnostic of conditions involving the hip. 2. Discuss the surgical approaches and surgical treatment for the listed conditions. 	1, 2, 3, 4, 5
39. Soft tissue orthopedic diseases	<ol style="list-style-type: none"> 1. Be able to recognize the common tendon and muscle disorders such as ruptures and contractures 	1, 2, 3, 4, 5
40. Mandibular and maxillary fractures.	<ol style="list-style-type: none"> 1. Be able to recognize mandibular and maxillary conditions 2. Know their management techniques. 	1, 2, 3, 4, 5
41. Spinal surgery	<ol style="list-style-type: none"> 1. Be able to recognize some neurological diseases 2. Know the different clinical and surgical management techniques. 	1, 2, 3, 4,
42. Dental anatomy, pathology, and record notation in the dog	<ol style="list-style-type: none"> 1. Know normal anatomical dental structures, names and numbers of teeth. 2. Recognize nomenclature for oral pathology in the dog. 	1, 3, 4
43. Dental anatomy, pathology, and record notation in the cat	<ol style="list-style-type: none"> 1. Know normal anatomical dental structures, names and numbers of teeth. 2. Recognize nomenclature for oral pathology in the cat. 	1, 3, 4
44. Oral Radiology	<ol style="list-style-type: none"> 1. Understand the indications, techniques, and interpretation for intra oral radiology in companion animals 	1, 3, 4
45. Dental concept driven therapy	<ol style="list-style-type: none"> 1. Understand dental treatment concepts and how they relate to the different case presentations 	1, 3, 4, 5
46. Creating the five-star dental practice	<ol style="list-style-type: none"> 1. Know how to recognize and practice poor, adequate, and superlative dental care and patient management. 	1, 2, 3, 4, 5
47. Ophthalmology examination	<ol style="list-style-type: none"> 1. Know how to do an ophthalmology examination in companion animals. 2. Learn how to use the instruments needed for this exam. 	1, 2, 3
44. Ocular Pharmacology and Therapeutics	<ol style="list-style-type: none"> 1. Know about ocular treatments and diagnostic aids. 	1, 4
45. Eyelid surgery	<ol style="list-style-type: none"> 1. Recognize the most common eyelid pathologies 2. Know how to surgically treat them 	1, 2, 3, 5
46. Third eyelid and conjunctiva	<ol style="list-style-type: none"> 1. Recognize the most common third eyelid pathologies 	1, 2, 3, 5

47. Orbit and globe. Lachrymal system	<ol style="list-style-type: none"> 1. Recognize the most common globe diseases 2. Recognize the most common lachrymal system pathologies 3. Know how to diagnose and treat KCS 	1, 3, 4
48. Cornea and sclera	<ol style="list-style-type: none"> 1. Recognize the most common corneal pathologies 2. Know how to surgically treat them 	1, 2, 3, 4, 5
49. Lens and vitreous	<ol style="list-style-type: none"> 1. Recognize the most common lens and vitreous pathologies. 2. Learn how to treat cataracts 	1, 2, 3, 4, 5
50. Retina	<ol style="list-style-type: none"> 1. Recognize the most common lens and vitreous pathologies. 	1, 3, 4
51. Glaucoma	<ol style="list-style-type: none"> 1. Recognize the different presentations for glaucoma 2. Know surgical and medical treatments for the disease. 	1, 3, 4, 5
52. Neuro Ophthalmology	<ol style="list-style-type: none"> 1. Understand vision and the visual pathways. 	1, 3

NB: The number assigned to the title of the lectures does not represent the actual number of contact hours (75) the course has. Is just an index of the content of the course.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Small Animal Medicine and Surgery Department
Veterinary Anesthesia and Analgesia (3 credits)

SAMS 520 TERM 4

Fall 2020

I. Course Faculty and Staff Information

- a. Course Director: Dr. Flavia Restitutti, DVM PhD, Associate Professor
- b. Email: frestitu@sgu.edu
- c. Office location: Cassia Building (SGU Campus map #17), ground floor
- d. Office hours: By appointment (preferably) via email and delivered through Zoom (can be individual or small groups).
- e. Other Faculty members:
 - Dr. Mercedes Miccio DVM, *Assistant Professor*, mmiccio@sgu.edu
 - Naudia Dundas BSc, *Demonstrator*, ndundas@sgu.edu

II. Course location

Online. On SAKAI, the following tools are going to be used:

- Panopto
- Resources
- Forums
- Tests & Quizzes

In addition, synchronous sessions will be delivered via Zoom. The link for the sessions will be available under “Zoom” tab also on Sakai.

Other tools on Sakai might be used if needed. Students will be informed accordingly if the arises.

The forums on Sakai are used for doubts regarding the contents of the course and should be the preferred method for this purpose (which allows other students with similar questions)

III. Prerequisite and/or co-requisite courses

ANPH 506/503 Veterinary Anatomy I/II
ANPH 504/505 Veterinary Pharmacology I/II
ANPH 512/513 Veterinary Physiology I/II

IV. Required resources

Long notes, slides handouts, didactic laboratory handouts and any additional reading that might be provided on SAKAI (for example review of literature articles).

V. Recommended resources

- a. Supplemental articles (for example literature reviews) will be uploaded on SAKAI
- b. Reference textbooks:
 - BSAVA Manual of Canine and Feline Anaesthesia and Analgesia, 3rd edition
Tanya Duke-Novakovski, Marieke De Vries, Chris Seymour. BSAVA 2016
 - Veterinary Anaesthesia Principles to Practice.
Alex Dugdale Wiley-Blackwell, 2010
 - Veterinary Anesthesia and Analgesia, The fifth edition of Lumb & Jones.
Grimm, Lamont, Tranquilli, Greene, Robertson. Blackwell Professional 2015
(Available online via HINARI database which can be accessed through SGU's Founders Library website)
 - Veterinary Anaesthesia, 11th edition.
KW Clarke, CM Trim & LW Hall. Saunders Ltd. 2013 **(Available online via HINARI database which can be accessed through SGU's Founders Library website)**
 - Handbook of Veterinary Pain Management, 3rd edition.
James S. Gaynor and William M Muir. Elsevier 2015 **(Available online via HINARI database which can be accessed through SGU's Founders Library website)**
 - Handbook of Veterinary Anaesthesia, 5th edition,
W Muir, J Hubbell, R Bednarski, P Lerche. Elsevier 2013
 - Essentials of Small Animal Anesthesia and Analgesia, 2nd edition,
K.A. Grimm, W.J. Tranquilli & L.A. Lamont. Wiley&Blackwell 2011
 - Manual of Equine Anesthesia and Analgesia,
Alexander Valverde, Thomas Doherty. Blackwell Professional 2006 **(Available online via HINARI database which can be accessed through SGU's Founders Library website)**
 - Handbook of Equine Anaesthesia, 2nd edition,
PM Taylor and KW Clarke. Saunders Elsevier 2007
 - Veterinary Anesthesia and Pain Management Secrets,
Stephen A. Greene. Elsevier 2002

To access the online books via Founder's library website check the **appendix III**

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

Other requirements

Computer/tablet with functional microphone and camera are an asset for the Zoom sessions

VII. Course rationale

This course aims to provide students with the theoretical knowledge required to develop an understanding of the principles of anesthesia and pain management in domestic animals and

wildlife/exotic species. It aims to promote critical thinking when elaborating an anesthetic plan taking in consideration the health status of the patient and its risk assessment. This course is a pre-requisite for SAMS 527 and SAMS 528

VIII. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Formulate a sedation and/or anesthetic plan in domestic and exotic animals according to their physical status.
2. Design an analgesic plan in domestic animals
3. Clinically interpret the information provided by the monitoring equipment.
4. Evaluate the anesthetic depth of a patient of the different species
5. Formulate a euthanasia protocol for domestic animals
6. Recognize the main components of an anesthetic machine.
7. Identify important risk factors in veterinary anesthesia.

IX. Lesson-level outcomes

See appendix I

X. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGU SVM program level outcome
CLO 1 Formulate a sedation and/or anesthetic plan in domestic and exotic animals according to their physical status.	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 2 Design an analgesic plan in domestic animals	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 3 Clinically interpret the information provided by the monitoring equipment	PLO 04 Explain the relationship between disease process and clinical signs PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 4 Assess the anesthetic depth of a patient of the different species	PLO 01 Recall. Understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 5 Formulate an euthanasia protocol for domestic animals	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare PLO 27 Demonstrate and model effective client communicate and ethical conduct
CLO 6 Recognize the main components of an anesthetic machine.	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare

CLO 7 Identify important risk factors in veterinary anesthesia.	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
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XI. Course Schedule

Please see appendix II

XII. Grading and assessment policy, and grading rubrics

a. Grading scale: The SGU SVM grading scale applies

>89.5%	A
84.5-89.49	B+
79.5-84.49	B
74.5-79.49	C+
69.5-74.49	C
64.5-69.49	D+
59.5-64.49	D
<59.49	F

b. Assessment policy

This course is 140 points, consisted of 139 points divided in 8 SAKAI quizzes and a 1-point assignment.

SAKAI quizzes will consist of MCQ questions and/or hotspot. Each question is 1 point. Quizzes will be **open book and will not be timed, however they are unidirectional** (i.e., students are not allowed to return to previous questions).

There will be 8 SAKAI quizzes. The contents of each quiz, availability date and dead line are detailed on the table below:

Quiz	Lectures included	Number of questions(points)	Opening date	Deadline	Feedback and grade release date
1	L1-L6	21	Aug 28 (week 2)	Sept 4	Sept 7
2	L7-L11 + DL1	21	Sep 11	Sept 18	Sept 21
3	L13-L18	21	Sep 25	Oct 2	Oct 5
4	L19-L23 + DL2	21	Oct 16	Oct 23	Oct 26
5	L25-L27	10	Oct 23	Oct 30	Nov 2
6	L28-L33	21	Nov 6	Nov 13	Nov 16
7	L35-L38	14	Nov 20	Nov 27	Dec 4
8	L40-L42	10	Nov 27	Dec 4	Dec 7

Assignment		1	Sept 18	Sept 24	Sept 27
Total		140			

Obs:

- a) L34 and L39 are synchronous zoom sessions of case discussion and simulations and are not going to be assessed in the quizzes. However participation is strongly encouraged
- b) Opening time is always 4 pm of the given day. Deadline time is always 11:59 of the given day, and feedback/grade release time is always at 12pm

1-point assignment: This assignment will consist of watching 2 videos regarding venous catheterizations and pointing the mistakes done during the catheterization in one of these videos. Returning the assignment – as long it is not blank – is enough to receive the point.

Students are expected to make use of the recommended books, scientific literature and journal articles uploaded on the SAKAI network.

XIII. Recommended study strategies

Appointments to discuss study strategies can be arranged via email with the course director

XIV. Instructor’s expectations of the student

Students are expected to read the handouts provided for the Zoom discussions.

XV. Professionalism statement

Students are expected to be professional in their interactions with colleagues, faculty, and staff and to exhibit caring and compassionate attitudes.

Derogatory attitudes or inappropriate behaviors directed at clients, patients, peers, faculty or staff will not be tolerated and can be grounds for dismissal.

XVI. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students’ lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (frestitu@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****)) during the open period for the examination.

Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVIII. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examssoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XIX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices

Appendix I - Lesson and Laboratory level outcomes

L: Lab

DL: Didactic lab

L/DL	Topic	Lesson Learning outcomes
L1	Introduction to the Course	<ul style="list-style-type: none"> a. Define some important terms used in anesthesiology b. Identify the different phases of anesthesia
L2	Anesthetic Planning	<ul style="list-style-type: none"> a. Explain how to prepare an animal patient for anesthesia b. Assign an ASA status to a patient c. Identify different factors that impact morbidity and mortality in different species d. Explain how to place an intravenous catheter in a small animal or a horse
L3	Preanesthetic Medication I	<ul style="list-style-type: none"> a. Reason the importance of premedication b. Explain the mechanism of action of the effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines c. List the clinical effects and side effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines d. List the most commonly used opioids in veterinary anesthesia e. Understand the importance of using opioids for premedication f. Compare the different opioids regarding time of onset, duration of effect, efficacy and side effects g. Understand the importance of handling controlled substances in veterinary practice h. Compare atropine and glycopyrrolate regarding duration of action, effects and side effects
L4	Preanesthetic Medication II	
L5	Injectable anesthetic agents I	<ul style="list-style-type: none"> a. Explain the mechanism of action, the effects and side effects, indications and contraindications for the different injectable anesthetics currently in use: thiopental, propofol, etomidate, alfaxalone and ketamine b. Define the term total intravenous anesthesia (TIVA) c. Understand the advantages of TIVA
L6	Injectable anesthetic agents II	

L7	Inhalation Anesthesia Equipment I	a. List the different options of gas supply b. Calculate the gas volume of an oxygen cylinder c. Explain the basic parts of the anesthesia machine and their function
L8	Inhalation Anesthesia Equipment II	d. Describe the different safety features of the machine and the gas supply e. Differentiate between rebreathing and non-rebreathing systems
L9	Inhalation Anesthesia Equipment III	f. Calculate fresh gas flow rates for each system g. Describe the different waste anesthetic gas disposal systems h. List the different modalities to provide inhalational anesthetics to a patient i. Explain the advantages, disadvantages and indications of face masks, supraglottic devices and endotracheal tubes
L10	Inhalational Anesthetic agents I	a. Explain the physicochemical properties of the inhalant anesthetics and their impact on practical use
L11	Inhalational Anesthetic agents II	b. Explain the minimal alveolar concentration c. Compare the effects and side effects of the inhalant anesthetics in use (Isoflurane, Sevoflurane, Halothane, Desflurane) d. Explain the indications, effects and side effects of nitrous oxide e. Understand the potential risks of chronic exposure to inhalant anesthetics and nitrous oxide
DL 01	Didactic Lab 1	a. Observe intravenous catheter placement in a dog manikin b. Calculate drug dosages, drug solutions and fluid rate rate for different dripping sets c. Observe the assembling an anesthesia machine and name its components d. Observe a leak test of the anesthesia machine and describe the steps to perform it e. Understand the differences of the gas flow among the breathing systems and its implication on the anesthetic procedure f. Observe the intubation of a dog and describe the correct steps for the procedure
L12	Pharmacology of Local Anesthetic Drugs	a. Classify the different local anesthetics (LA) in use b. Compare the different LA regarding physicochemical properties, effects and side effects c. Describe the different additives to LA's and their effects d. Reason the use of local anesthesia

L13	Local Anesthetic Techniques in Small Animals	<ul style="list-style-type: none"> a. Explain the commonly used local anesthetic techniques used in small animals: topical anesthesia, infiltration techniques, nerve blocks of head and extremities, intravenous regional anesthesia and epidural anesthesia b. List the indications and possible side effects of the LA techniques mentioned above
L14	Local Anesthesia in Large animals	<ul style="list-style-type: none"> a. Explain the significance of local anesthesia in large animals b. Describe commonly used local anesthetic techniques in large animals c. Understand the side effects of these LA techniques
L15	Pain Physiology	<ul style="list-style-type: none"> a. Explain the nociceptive pathway b. Differentiate between physiologic and clinical pain c. Explain the possible consequences of pain d. Justify pain treatment in animals
L16	Pain Assessment	<ul style="list-style-type: none"> a. Explain the commonly used pain scoring systems in animals: numerical rating scales, visual analogues scales, composite pain scales b. Understand the limitations of pain assessment in animals c. Explain the PLATTER approach to pain
L17	Pain Treatment: Pharmacologic Approach	<ul style="list-style-type: none"> a. Explain the terms preemptive and multimodal analgesia b. List the different analgesic drugs systemically used and name their indications, effects and side effects: opioids, ketamine, alpha2-agonists, NSAIDs, tramadol, gabapentin, lidocaine
L18	Anesthetic Monitoring I	<ul style="list-style-type: none"> a. Understand the significance of monitoring in the perioperative period; b. Assess the anesthetic plane in small and large animals c. Understand the importance of record keeping
L19	Anesthetic Monitoring II	<ul style="list-style-type: none"> a. Assess the cardiovascular function based on heart rate and blood pressure b. Interpret a basic ECG c. List the different methods of blood pressure measurement d. Appreciate the limitations of blood pressure measurement

L20	Anesthetic Monitoring III	<ul style="list-style-type: none"> a. Assess the respiratory function in the anesthetized patient b. Define the different monitors available to assess respiratory function and understand their limitations c. Interpret the capnography curve d. Differentiate between oxygenation and ventilation
L21	Anesthetic Monitoring IV	<ul style="list-style-type: none"> a. Name the indications and potential side effects for mechanical ventilation (IPPV) b. Name the modalities of IPPV and its indication of use
L22	ECG and Capnography – An Interactive Approach	<ul style="list-style-type: none"> a. Identify different arrhythmias observed on ECG b. Identify and interpret different capnography curves
DL2	Didactic lab 3: Monitoring	<ul style="list-style-type: none"> a. Observe blood pressure measurement with oscillometric and Doppler techniques and interpret the values b. Observe end tidal and inspiratory carbon dioxide monitoring and interpret the capnography curve c. Observe SpO2 measurement with a pulse oximeter and interpret the result
L23	Anesthesia emergencies and complications	<ul style="list-style-type: none"> a. Differentiate between common complications and emergencies in anesthesia b. Recognize the most common complications occurring during anesthesia and list treatment options
L24	CPR	<ul style="list-style-type: none"> a. Define the guidelines stated by the RECOVER Initiative b. Understand the importance of correct techniques for cardiorespiratory resuscitation
L25	Blood gas analysis and acid base physiology	<ul style="list-style-type: none"> a. Understand the implications of anesthesia in the acid base balance b. Enumerate the main causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis. c. Interpret basic blood gas analysis results

L26	Fluid therapy in anesthesia	<ul style="list-style-type: none"> a. Differentiate between dehydration and hypovolemia b. Understand the clinical difference between crystalloids and colloids c. Design fluid therapy for your patient undergoing anesthesia
L27	Small Animal Anesthesia I	<ul style="list-style-type: none"> a. Design an appropriate anesthetic and analgesic protocol for healthy small animal patients b. Understand the peculiarities in feline anesthesia c. Explain the special considerations in neonate and pediatric patients regarding anesthesia and analgesia d. Design an anesthetic and analgesic protocol for neonate and pediatric small animal patients e. Understand the challenges in geriatric patients undergoing anesthesia and develop an anesthetic and analgesic protocol for geriatric patients f. Understand the anesthetic challenges of patients undergoing dental procedures g. Comprehend the implications of obesity when developing an anesthetic plan for obese small animal patients h. Design an anesthetic and analgesic protocol for small animal patients with hepatic diseases i. Design an anesthetic and analgesic protocol for small animal patients with renal disease j. Design an anesthetic protocol for obstructed small animal patients k. Design an anesthetic and analgesic protocol for small animal patients with diabetes mellitus l. Design an anesthetic and analgesic protocol for a cat with hyperthyroidism m. Anesthesia in ophthalmic patients n. Design an anesthetic protocol in neurological patients o. Understand the physiological changes of pregnancy and the implications for anesthesia p. Design an anesthetic protocol for a patient undergoing C-section q. Design an anesthetic and analgesic protocol for small animal patients with different heart conditions r. Design an anesthetic and analgesic protocol for dogs with gastric-dilatational volvulus (GDV)
L28	Small Animal Anesthesia II	
L29	Small Animal Anesthesia III	
L30	Small Animal Anesthesia IV	
L31	Small Animal Anesthesia V	

L32	Case simulation (Zoom session)	a. Develop an anesthetic plan for a fictional case and observe its monitoring with the means of a monitor simulator
L33	Anesthesia in Guinea Pigs, Rabbits and small rodents	b. Explain the anatomical and physiological particularities of Guinea Pigs, Rabbits and rodents concerning anesthesia c. Elaborate an appropriate anesthetic protocol for Guinea Pigs, Rabbits and Small Rodents
L34	Avian and Reptile Anesthesia	a. Explain the anatomical and physiological particularities of avian and reptile species affecting the anesthesia procedure b. Elaborate an appropriate anesthetic protocol for birds and reptiles
L35	Equine Anesthesia I	a. Explain the relatively high risk for horses undergoing anesthesia, and how this risk can be addressed b. List possible sedation protocols for standing procedures in horses c. Design an anesthetic and analgesic protocol for horses
L36	Equine anesthesia II	
L37	Case discussion (Zoom)	a. Discuss the anesthetic management of a real case
L38	Anesthesia in Ruminants and Camelids	a. Explain the special considerations in ruminant anesthesia b. Choose an appropriate drug protocol for cattle and small ruminant c. Explain the challenges in camelid anesthesia d. Choose an appropriate anesthetic protocol for camelids
L39	Swine Anesthesia	a. Explain the challenges of anesthesia in pigs b. Design an anesthetic and analgesic drug protocol for pigs a. Define the term malignant hyperthermia
L40	Euthanasia	a. List the different techniques and drugs available for euthanasia in small and large animals b. Explain how to properly euthanize small animals and horses c. Describe how to confirm death in animals after euthanasia d. Appreciate the AVMA guidelines for euthanasia of Animals

Appendix II: Course schedule (L: Lecture; DL: Didactic lab)

Lecturers:

FR: Flavia Restitutti; MM: Mercedes Miccio

Week	Lecture/ Didactic Lab	Lecturer	Topic	Zoom/Panopto	Quizzes
1	L1	FR	Introduction to the course	Zoom (Aug 17 1-2pm)	Q1
	L2	FR	Anesthesia Planning	Panopto	Q1
	L3	MM	Preanesthetic medication I	Panopto	Q1
2	L4	MM	Preanesthetic medication II	Panopto	Q1
	L5	FR	Injectable Anesthetic agents I	Panopto	Q1
	L6	FR	Injectable Anesthetic agents II	Panopto	Q1
	Quiz 1 opens				
3	L7	FR	Inhalational Anesthesia Equipment I	Panopto	Q2
	L8	FR	Anesthesia Equipment II	Panopto	Q2
	L9	FR	Inhalational Anesthesia Equipment III	Panopto	Q2
	Quiz 1 deadline				
4	L10	FR	Inhalants I	Panopto	Q2
	L11	FR	Inhalants II	Panopto	Q2
	DL1	All	Lab session: Drug calculations, catheter, Anesthesia machine, breathing systems, ET tubes & intubation (Videos on panopto)	Panopto	Q2
	Quiz 2 opens				
5	L12	FR	Pharmacology of Local Anesthetic Drugs	Panopto	Q3
	L13	FR	Local Anesthetic Techniques in Small Animals	Panopto	Q3
	L14	FR	Local Anesthesia Techniques in Large Animals	Panopto	Q3
	Quiz 2 deadline				
6	L15	FR	Pain physiology	Panopto	Q3
	L16	FR	Pain Assessment	Panopto	Q3
	L17	MM	Pain treatment: Pharmacological approach	Panopto	Q3
	Quiz 3 opens				
7	Catheter assignment opens				
	L18	FR	Anesthesia Monitoring I	Panopto	Q4
	L19	FR	Anesthesia Monitoring II	Panopto	Q4
	L20	FR	Anesthetic Monitoring III	Panopto	Q4
	L21	FR	Anesthetic Monitoring IV	Panopto	Q4
Quiz 3 deadline					
Catheter assignment deadline					
8	Midterms (no activities)				
9	22	All	ECG and Capnograph: An interactive approach	Zoom (Oct 12 1-2pm)	Q4

	DL2	All	Lab: Monitoring equipment (Videos on Panopto)	Panopto	Q4
Quiz 4 opens					
10	23	FR	Anesthetic Emergencies and Complications	Panopto	Q5
	24	FR	CPR	Panopto	Q5
	25	FR	Acid-Base Physiology & Blood gas	Panopto	Q5
	Quiz 4 deadline				
Quiz 5 opens					
11	26	FR	Fluid therapy in anesthesia	Panopto	Q6
	27	FR	Small Animal Anesthesia I	Panopto	Q6
	28	FR	Small Animal Anesthesia II	Panopto	Q6
	Quiz 5 deadline				
12	29	FR	Small Animal Anesthesia III	Panopto	Q6
	30	FR	Small Animal Anesthesia IV	Panopto	Q6
	31	FR	Small Animal Anesthesia V	Panopto	Q6
	Quiz 6 opens				
13	L32	All	Case simulation	Zoom Group A: Monday Group B: Tuesday Group C: Wednesday All groups 12-1pm	Not assessed
	L33	FR	Anesthesia in Rabbits, Guinea Pigs and Small Rodents	Panopto	Q7
	L34	FR	Avian and Reptile Anesthesia	Panopto	Q7
	Quiz 6 deadline				
14	L35	FR	Equine Anesthesia I	Panopto	Q7
	L36	FR	Equine Anesthesia II	Panopto	Q7
	L37	All	Case discussion	Zoom Group A: Monday Group B: Tuesday Group C: Wednesday All groups 12-1pm	Not assessed
	Quiz 7 opens				
15	L38	FR	Anesthesia in Ruminants and Camelids	Panopto	Q8
	L39	FR	Swine Anesthesia	Panopto	Q8
	L40	FR	Euthanasia	Panopto	Q8
	Quiz 7 deadline				
Quiz 8 opens					
16	Finals				
	Quiz 8 deadline				

Appendix 3 ACCESS TO AGORA ARDI, HIANRI, GOALI & OARE – RESEARCH4LIFE

HINARI Access to Research in Health Programme provides free or very low cost online access to the major journals in biomedical and related social sciences to local institutions in developing countries.

Access to Global Online Research in Agriculture (AGORA) is a programme to provide free or low cost access to major scientific journals in agriculture and related biological, environmental and social sciences to public institutions in developing countries.

Online Access to Research in the Environment (OARE), an international public- private consortium coordinated by the United Nations Environment Programme (UNEP), Yale University, and leading [science and technology publishers](#) enables developing countries to gain access to one of the world's largest collections of environmental science research.

Access to Research for Development and Innovation (ARDI) is a programme to provide free or low cost access to scholarly literature from diverse fields of science and technology to local institutions in developing countries.

Global Online Access to Legal Information (GOALI) is a programme to provide free or low-cost online access to legal research and training in the developing world.

TO ACCESS:

Go to <https://mycampus.sgu.edu> and login using your SGU credentials.

Click on the **Library** tab located towards the top of the Carenage page.

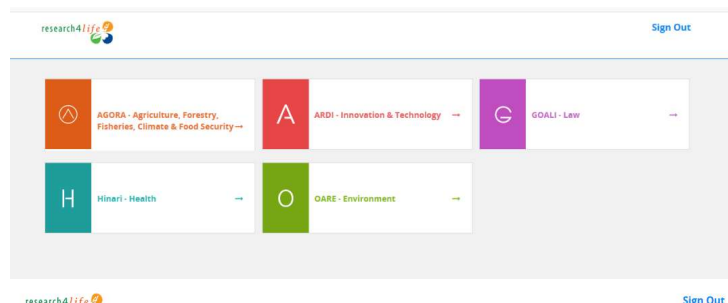
All five resources, AGORA, ARDI, HIANRI, GOALI and OARE, can be accessed either through the **Find a Journal** page or the **Databases & Ebooks** page.

Databases & Ebooks page – under any of the subject categories you will find links to all five resources along with login information.

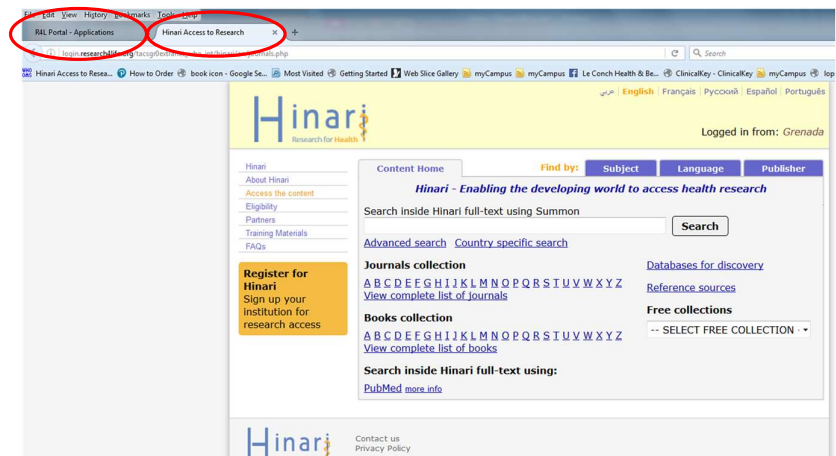
Find a Journal page – under **Other Collections** towards the top of the page you will see links to all five resources along with login information.

Click on one of the resources names (AGORA, ARDI, HIANRI, GOALI and OARE).

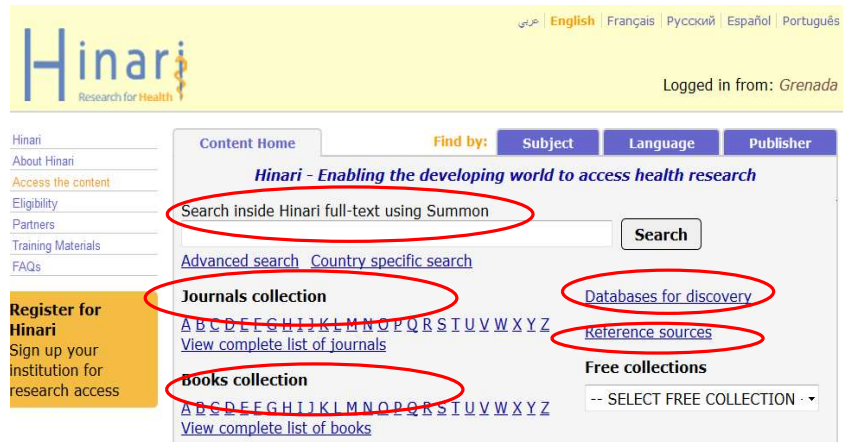
No matter which resource you choose from the library site, when you login, you will be taken to a page which allows you to choose between the five resources



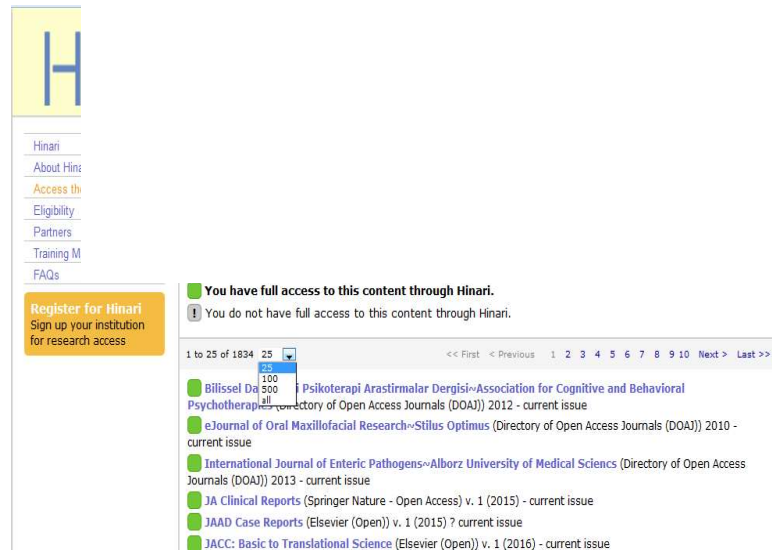
When you select one of the resources, notice a new tab will open in your browser. The initial page will still remain open. You can return to the initial page at any time to select a different resource.



all five resources – **Search Inside [resource name] full-text using Summon, Journals Collection, Books**



By default, the listing of journals is limited to 25 titles per page under each letter category. Select the down arrow to change the amount to **All**. You can now run a search on the entire J listing – for PC **Ctrl** key + **F** or for Apple **Command** key + **F**

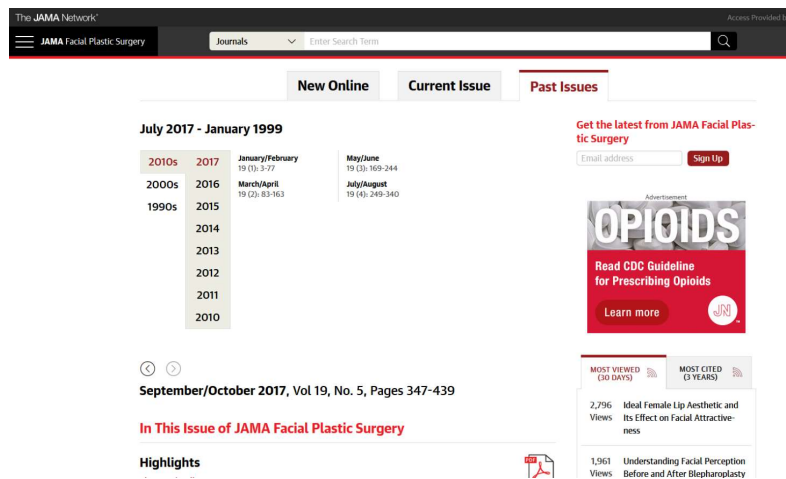


Note that every title listed includes the publishers name in parenthesis and the coverage. For this example the journal JAMA Facial Plastic Surgery is published by the American Medical Association and we have access to the journal from

- **JAMA Dermatology** (American Medical Association) v. 149 (2013) - current issue
- **JAMA Facial Plastic Surgery** (American Medical Association) v. 15 (2013) - current issue
- **JAMA Internal Medicine** (American Medical Association) v. 173 (2013) - current issue
- **JAMA Neurology** (American Medical Association) v. 70 (2013) - current issue

Click on the title which is a link to the journal page on the publisher's site.

Every publisher's site will have different page layouts. Some similarities include - the ability to look for a journal by year, volume, issue and being able to search for a particular article by typing in the title in a search box.



Special Journal and Book Collection Issues

1. Inactivity:

If you are inactive for more than 5 minutes you risk being logged out automatically.

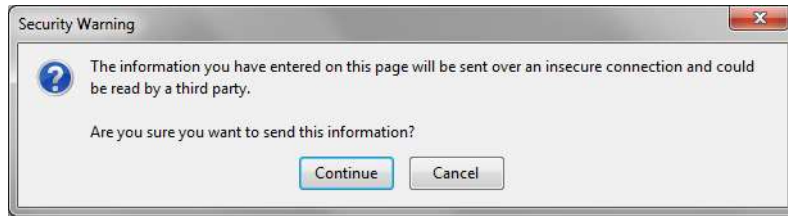
2. Elsevier Journals and Books:

When dealing with Elsevier journals and books you will need to take two extra steps to gain access.

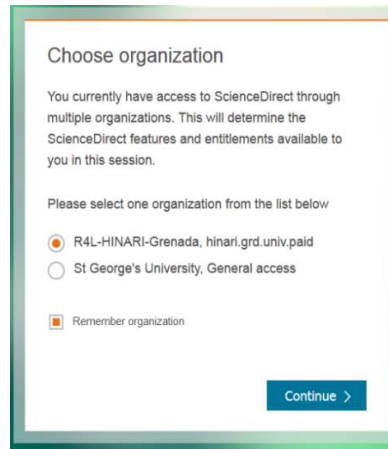
Below is an example from the listing of journals under J. Notice JACC: Cardiovascular Imaging is an Elsevier journal



Step 1. When you click on an Elsevier title you will be given a Security Warning – Click Continue.



Step 2. You will be asked to choose your organization – Select the option R4L-[resource name]-Grenada, [resource name].grd.univ.paid and click Continue.





St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

SMALL ANIMAL MEDICINE 1 SYLLABUS (3 credits)

SAMS 522 TERM 5

FALL 2020

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor

Email: tguttin@sgu.edu

Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3440

Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

Lecturers in this course:

Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor, acorrigan@sgu.edu;

Tara Paterson, DVM, MSc, Associate Professor, tpaterson@sgu.edu;

Andrea Lam, DVM, DACVD, Visiting Professor, alamdacvd@gmail.com;

Melissa Bain, DVM, DACVB, Visiting Professor, mjbain@ucdavis.edu.

Class Office Hours via Zoom: Every Monday 1-2 pm AST. One-on-one office hours available upon request.

II. Course location

This course will be run completely online, **asynchronously**, using Sakai tools Panopto, Assignments, and Quizzes.

III. Prerequisite and/or co-requisite courses

Successful completion of the first 4 terms of the DVM curriculum at SGU SVM are required.

IV. Required resources

Students will need a functional laptop and reliable internet connection.

Panopto lecture slides and/or lecture notes will be provided as pdf files, and will not be made available in hard copy. The slides will be accessible for digital notes. For certain lessons, scientific articles, videos, or other references will be assigned and will be provided via Sakai.

All lectures will be recorded and distributed via Panopto.

The main references for this course are:

Textbook of Veterinary Internal Medicine, Editor Ettinger, Publisher Saunders, 8th edition.

Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.

Fletcher, et al. RECOVER CPR Guidelines. Journal of Emergency and Critical Care, 22(S1); 2012: S102-131.

V. Recommended resources

Videos and articles will be posted on Sakai.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None.

VIII. Course rationale

This course is the first in a 2-set series of Small Animal Internal Medicine courses. These courses will cover the clinical presentation, diagnostic evaluation, and current therapies in small animal medicine. This course, the first of the 2-set series, covers the following systems and topics: infectious diseases, renal and urinary diseases, respiratory diseases, dermatology, hematology, immune mediated diseases, and emergency and critical care. The focus of the course is evidence-based medicine, and the problem-based approach, starting with a problem list, developing a differential diagnosis list, followed by a diagnostic plan, and treatment plan, for diseases within each system or topic.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics, using correct medical terminology.
2. Use relevant clinical data to create differential diagnosis list for conditions in specific organ systems.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral for conditions in major organ systems to diagnose a disease.

4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases in specific organ systems and consider antimicrobial resistance.
5. Recognize emergency presentations and considerations for specific organ systems.
6. Formulate appropriate client communication regarding history, diagnostic tests, treatment, and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in the workspace, and select patients for isolation.
8. Understand evidence-based veterinary medicine and its application to internal medicine topics.

X. Lesson-level outcomes

See Appendices XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendices XXI

XII. Course Schedule

See Appendices XXI

XIII. Grading and assessment policy, and grading rubrics

Grading scale complies with SGU and SVM assessment guidelines:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Total grade in the course will be based on 100 points:

- Formative assignment: 3 main points per lecture (for each of the 5 units, excluding behavior)—no grade but **must complete to pass**.
- Engagement rubric 15% (please see Engagement Rubric, Appendix XXIII)
- Assignments x6 30% (5 points each)
- Forum discussion CPR 5% (5 points)
- Quizzes x5 50% (10 points each)
- NOTE: THERE IS NO MIDTERM OR FINAL EXAM IN THIS COURSE

XIV. Recommended study strategies

This is a completely asynchronous course devised with your flexibility in mind.

Assignment and quiz due dates are fixed, but if you fall ill, or have an excused absence, you will have until the last day of the term to complete assignments.

Please submit excuses via the Dean of Students (Dr. Bhaiyat) and he will notify the course director. The material in this course will be integrating much of what you have learned in other courses, so get out your old course material and refer back to it for best learning. Other tips:

- Office hours attendance and participation are recommended.
- After each class, summarizing and making an outline of the lecture's most important points.
- Working through cases that are provided in lecture on your own, by formulating a problem list, differential diagnosis list, and diagnostic plan, prior to seeing the lecturer's slides with that information, is encouraged.
- Use the Learning Objectives for each section/lecture, and "Talia's Tips" main points, to guide studying.
- Refer to the Internal Medicine textbook.

XV. Instructor's expectations of the student

Students are expected to adhere strictly to the honor code. Assignments and quizzes will have feedback provided, and we expect students to keep this feedback and answers to the questions to themselves. **If you share feedback or answers on Sakai Assignments or Quizzes, this is considered cheating and a violation of the honor code.**

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that is seen fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the

terms of the University Code of Conduct.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Participation and engagement will be graded with the Engagement Rubric (see Appendix XXI).

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

No exams will be given via ExamSoft in this course.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI. Appendices: LO Mapping, Course Schedule, Student Engagement Rubric

CLOS: Upon successful completion of this course, the student will be able to:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics, using correct medical terminology.
2. Use relevant clinical data to create differential diagnosis list for conditions in specific organ systems.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral for conditions in major organ systems to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases in specific organ systems and consider antimicrobial resistance.
5. Recognize emergency presentations and considerations for specific organ systems.
6. Formulate appropriate client communication regarding history, diagnostic tests, treatment, and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in the workspace, and select patients for isolation.
8. Understand evidence-based veterinary medicine and its application to internal medicine topics.

Course Level Outcomes	SGU-SVM Program Level Outcomes	AVMA clinical competencies
Course Level Outcome 1	1, 2, 3, 4, 6	1, 2, 3, 4, 5, 6, 9
Course Level Outcome 2	1, 2, 3, 4, 6, 20	1, 8
Course Level Outcome 3	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 5, 6,
Course Level Outcome 4	1, 2, 3, 4, 5, 6, 10, 12, 21, 22, 23, 24, 25, 27	1,2, 3, 5, 6, 7, 9
Course Level Outcome 5	1, 2, 3, 5, 6, 20, 25	1, 2, 6
Course Level Outcome 6	3, 4, 5, 12, 13, 19, 27	1,2, 8
Course Level Outcome 7	1, 2, 3, 4, 6, 8, 11, 18, 26, 28	1, 2, 7, 8, 9
Course Level Outcome 8	6, 11, 15, 28	7, 8, 9

Mapping of LLOs to CLOs:	Lecture/lab Learning Outcome	Course learning outcome
Infectious Disease Section	1. Recognize the clinical signs, presenting complaints and historical data that are indicative of fungal infections	1
	2. Develop an appropriate systemic work up for a variety of fungal diseases.	1 2 3
	3. Based on relevant history, PE findings, and specific diagnostic testing, diagnose the following fungal diseases: Blastomycosis, Histoplasmosis, Cryptococcosis, Aspergillosis, Coccidioidomycosis, Candidiasis, Pythium, and Lagenidiosis.	1 2 3 4 5 8
	4. Explain the prognosis for all of the above fungal infections	4 6 8
	5. Implement and critique treatment plans for a variety of fungal diseases	4 8
	6. Explain the MOA and side effects for antifungal medications	4 6
	7. Recognize and utilize appropriate terminology	1 2 3 4 5
	8. Apply your knowledge of pharmacology to select and adjust dosing of antibiotics given a case example	4
	9. Analyze the appropriateness of a particular antibiotic regimen for a given case example considering the infecting microbe, the host, and the drug.	1 4
	10. Select appropriate empiric antibiotic protocol for a given case example	4 8
	11. Describe toxicities or side effects for commonly used antibiotics	4 6
	12. Compare and contrast a simple infection and a complicated infection and determine appropriate therapeutic options	1 2 3 4 5
	13. Discuss the major concerns and justify current core vaccination protocols for canine and feline patients	1 2 3 4 5 6
	14. Based on the relevant history, PE findings, and specific diagnostic testing, diagnose the following viral diseases: canine and feline parvovirus, canine distemper, infectious canine hepatitis, FeLV, FIV, FIP and feline coronavirus, feline herpesvirus, feline calicivirus.	1 2 3 4 5
	15. Explain the prognosis for the above diseases.	4 6 8
	16. Compare and contrast FeLV and FIV infection	1 2 3 4 5
	17. Compare and contrast FIP (both wet and dry forms) and feline coronavirus infection	1 2 3 4 5
	18. Evaluate the appropriateness of a treatment for a given viral disease	4 8
	19. Summarize both acute and chronic manifestations of specific infectious diseases.	1 2 3 4 5
	20. Develop an appropriate systemic work up for a variety of viral diseases, including neurologic and ophthalmologic manifestations	3 4 5
	21. Based on relevant history, PE findings, and specific diagnostic testing, diagnose the following vector borne diseases: ehrlichiosis, anaplasmosis, babesiosis, borreliosis, cytauxzoonosis, rocky mountain spotted fever, bartonellosis, hepatozoonosis.	1 2 3 4 5 8

	22. Explain the prognosis for the diseases above.	4 6 8
	23. Develop an appropriate systemic work up for a variety of vector borne diseases, including neurologic and ophthalmologic manifestations	3 4 5 8
	24. Explain the benefits of vector prevention	4 6 7 8
	25. Based on relevant history, PE findings, and specific diagnostic testing, diagnose the following specific bacterial/protozoal/mycoplasmal/parasitic diseases: leptospirosis, mycoplasmosis, toxoplasmosis, neosporosis.	1 2 3 4 5 7 8
	26. Explain the prognosis for the above diseases	4 5 6 8
	27. Develop an appropriate isolation protocol for infectious diseases including zoonotic considerations.	2 4 6 7
	28. Implement and critique treatment plans for a variety of viral, parasitic, bacterial, and protozoal infections.	4 5 6 8
Respiratory Section	1. Review and explain relevant anatomy, physiology and pathophysiology of common respiratory diseases	1
	2. Recognize the clinical signs, presenting complaints and historical data that are indicative of respiratory disease	1
	3. Develop an appropriate diagnostic work up for animals presenting with clinical signs of respiratory disease for both stable and emergent patients	2 3 5 8
	4. Understand common radiographic terminology and be able to interpret images in conjunction with clinical signs	2 3
	5. Interpret specific diagnostic testing to diagnose common canine and feline respiratory diseases	2 3 8
	6. Explain the etiology and pathophysiology of common canine and feline respiratory diseases	1 2 3 5
	7. Implement and critique treatment plans for a variety of canine and feline respiratory diseases	4 5 6 8
	8. Utilize current research to help with disease classification and treatments	1 2 3 4 5 8
	9. Based on relevant history, PE findings, and specific diagnostic testing, diagnose cases of: pneumothorax, pyothorax, chylothorax, neoplastic effusions, FCV, FHV, Chlamydomphila felis, cryptococcosis, aspergillosis, pneumonyssoides, nasopharyngeal polyps, nasal tumors, nasal foreign bodies, allergic, chronic, and idiopathic rhinitis, nasopharyngeal stenosis, laryngeal paralysis, brachycephalic airway syndrome, laryngeal collapse and neoplasia, kennel cough/canine infectious tracheobronchitis, chronic bronchitis, collapsing trachea/trachobroncomalacia, idiopathic feline bronchitis/feline asthma, pneumonias (infectious and aspiration), lungworms, lung lobe torsion, pulmonary hypertension, metastatic and primary neoplasia, ciliary dyskinesia, and hypertrophic osteopathy.	1 2 3 4 5 8
	10. Explain the prognosis for all of the above diseases.	4 5 6 8
	11. Understand the procedure and calculate and interpret arterial blood gas evaluation and the A-a gradient	3

	12. Compare and contrast bronchial, interstitial and alveolar radiographic patterns and major conditions associated with each	1 2 3 4 5
	13. Describe the indications for advanced diagnostics including CT, MRI and endoscopy	3 5
	14. Describe the appropriate procedure for thoracocentesis and chest tube placement	3 5
	15. Compare and contrast the different methods for lung sample collection	3 5
Hematology/Immune Mediated Dz/ and Coagulopathy section	1. Classify anemias as regenerative or non-regenerative, and whole blood loss vs. increased destruction vs. decreased production; Formulate a differential list and diagnostic plan for each category of anemia	1 2 5 8
	2. Classify thrombocytopenias as: consumptive vs. destruction vs. decreased production; Formulate a differential list and diagnostic plan for each category of thrombocytopenia	1 2 5
	3. Extrapolate similarities and differences between all the immune mediated diseases as far as diagnostic plan, underlying triggers, treatment, and prognosis	2 3 4 5
	4. Distinguish primary vs. secondary immune mediated diseases, and make a diagnostic plan for the common triggers of the immune system and the immune mediated disease	1 2 3 5 8
	5. Discuss with owners the prognosis, risk of relapse, and prevention of relapse of immune mediated diseases	4 5 6 8
	6. Discuss prednisone side effects with owners	4 5 6
	7. Based on relevant history, PE findings, and specific diagnostic testing, diagnose cases of: thrombocytopenia, thrombopathies-including Von Willebrands Disease, rodenticide intoxication, Hemophilia A and B, and DIC.	1 2 3 4 5
	8. Develop a treatment protocol and explain the prognosis for all of the above diseases.	4 5 6 8
	9. Compare and contrast primary vs. secondary hemostasis	1 2 3 4 5
	10. Review and explain the cells and proteins that are necessary for hemostasis	1 2
	11. Select appropriate diagnostics for evaluating a bleeding patient	3 5
	12. Understand the initiation, amplification, and propagation of the Cascade model of hemostasis	1 2 3 4 5
Renal and Urinary Section	1. Based on relevant history, and PE findings, make a diagnostic plan for cases of: acute kidney injury (AKI), chronic kidney disease (CKD), glomerular disease, urolithiasis, urinary tract infection (UTI), prostatic disease, Feline Idiopathic Cystitis (FIC), urinary neoplasia, micturition disorders	1 2 3 4 5 8
	2. Prognosticate for all of the above diseases	4 6 8

	3. Distinguish lower urinary tract signs and upper urinary tract signs via history questions, physical exam, and clinical signs	1
	4. Develop a problem list, differential diagnoses, and diagnostic plan for upper and lower urinary tract signs	1 2 3 5
	5. Compare and contrast acute kidney injury from chronic kidney disease	1 2 3 4 5 8
	6. Discuss diagnosis, monitoring, treatment, and prognostic differences for glomerular disease	1 2 3 4 5 6 8
	7. Discuss the indications and prognosis for dialysis, and the different types of dialysis	4 5 6 8
	8. Discuss treatment for the above diseases, including the ACVIM consensus on diagnosis and treatment of glomerular disease and the IRIS staging and treatment guidelines for monitoring and treatment of chronic kidney disease	1 2 3 4 6 8
	9. Recognize when isolation protocols for infectious and zoonotic diseases should be implemented, and how to discuss zoonotic diseases with owners.	2 4 6 7
	10. Select the ideal nutrition plan for various renal and urinary diseases based on the patient's specific needs.	1 4 6 8
Emergency Section	1. Compare and contrast BLS and ALS in CPR	1 2 3 4 5 8
	2. Explain appropriate monitoring of emergent patients	1 2 5
	3. Explain the 5 important stages/topics of CPR	5
	4. Utilize appropriate terminology	1 2 3 4 5
	5. Compare and contrast Chest compression techniques	1 5
	6. Understand emergency drugs/therapeutics and how and when to administer including medications, defibrillation and open chest CPR	4 5 8
Dermatology Section	1. Understand and utilize appropriate dermatology terminology	1 2 3 4 5
	2. Review and be able to select appropriate diagnostic tests for a variety of dermatologic diseases	3 8
	3. Based on the presenting complaints, relevant history, PE findings and specific diagnostic testing, diagnose cases of: atopy, food sensitivities, flea allergy dermatitis, bacterial folliculitis, demodicosis, dermatophytosis, scabies, pyoderma (superficial, deep, fold and puppy), Malassezia, alopecia (endocrine and non-endocrine), feline eosinophilic diseases, pemphigus (foliaceus, vulgaris), SLE, DLE, cutaneous lymphoma, uveodermatologic syndrome, juvenile cellulitis, vasculitis, erythema multiforme, toxic epidermal necrolysis, and hepatocutaneous syndrome.	1 2 3 4 5 8
	4. Explain the prognosis for all of the above diseases.	4 6 8
	5. Develop a treatment plan for all of the above diseases	4
	6. Compare pathologic findings with clinical signs of skin disorders	1 3

	7. Review nutritional aspects of skin disorders including therapeutic nutritional supplementation	4
	8. Use patient presentation, clinical signs, physical exam findings, and lab parameters to formulate a problem list, differential diagnoses, diagnostic and treatment plan for dermatologic disease	1 2 3 4 5 8
	9. Review basic husbandry of the skin and hair coat of companion animals	1 2
	10. Review the pharmacology of therapeutic options of common skin diseases and appropriate use	4
	11. Compare and contrast primary and secondary dermatologic lesions	1 2 3 4
	12. Compare and contrast various antiparasitics	4 8
	13. Describe the anatomic structures of the canine ear and its importance in otitis externa/media/interna development and treatment, including the tympanic membrane.	1 2 4
	14. Define the “3 Ps” (predisposing, primary, perpetuating) and discuss their importance in the work-up and management of every case of otitis.	1 2 6
	15. Describe the clinical approach to otitis externa including: key clinical signs, history, physical examination, otoscopic examination, diagnostic plans, and treatment plans, including management of key factors for long term prevention.	1 2 3 4 6
	16. Choose an appropriate treatment approach for otitis, including the precautions to be taken in cases of ruptured tympanum, differentiating different cleansing agents, parasitic otitis, topical and systemic antimicrobials, yeast infection treatment, and the role of glucocorticoids.	4
	17. State the current treatment recommendations for cases of aural hematoma.	4 5
	18. Recognize when isolation protocols for infectious and zoonotic diseases should be implemented, and how to discuss zoonotic diseases with owners.	2 4 6 7

Student Engagement Rubric:

Criteria	Excellent (A)	Good (B)	Fair (C)	Poor (F)
Assignments (40%)	Completes all the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes most (90%) of the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes some (70-89%) of the Assignments in a timely manner, and/or shows partial integration of thought of course material.	Completes less than 70% of the Sakai Assignments for the term in a timely manner or shows little integration of thought of course material.
Forums Posts (20%)	Completes all the Sakai Forums posts for the term in a timely manner.	Completes most (90%) of the Sakai Assignments for the term in a timely manner.	Completes some (70-89%) of the Sakai Assignments for the term in a timely manner.	Completes less than 70% of the Sakai Assignments for the term in a timely manner.
Sakai Quizzes (30%)	Completes all the Sakai Quizzes for the term in a timely manner.	Completes most (90%) of the Sakai Quizzes for the term in a timely manner.	Completes some (70-89%) of the Sakai Quizzes for the term in a timely manner.	Completes less than 70% of the Sakai Quizzes for the term in a timely manner.
Professionalism (10%)	Completes the online learning course with professionalism—timeliness, organization, communication.			Does not complete the online learning course with professionalism—timeliness, organization, communication.

Medicine Assignments Rubric:

Category	Exemplary (A)	Proficient (B)	Developing Skills (C)	Insufficient (F)
Completed assignment in time. (20%)	Assignment submitted on time.	Assignment submitted <48 hours past deadline with no documented excuse.	Assignment submitted 48 hours to 1 week late with no documented excuse.	Assignment submitted >1 week late with no documented excuse.
Followed assignment instructions. (20%)	Assignment instructions were followed thoroughly.	Most of the assignment instructions were followed thoroughly.	Some of the assignment instructions were followed thoroughly.	Less than acceptable following of assignment instructions occurred.
Integration of course content into answers. (20%)	Answers showed superb integration of course content.	Answers showed proficient integration of course content.	Answers showed average integration of course content.	Answers showed poor integration of course content.
Organization and clarity of formatting. (20%)	Answers were clearly organized, easy to read, with clear formatting and font/writing.	Answers were mostly organized, mostly easy to read, with mostly clear formatting and font/writing.	Answers were somewhat organized, but some issues made reading unclear, or unclear formatting, font, or writing.	Answers were not organized, were difficult to read, due to font, writing, or formatting.
Correct answers. (20%)	Answered 90% or greater correctly.	Answered 80-89% of answers correctly.	Answered 70-79% of answers correctly.	Answered less than 70% of answers correctly.
FINAL SCORE:				

Week	Day/Dates	LECTURE TOPIC	Instructor
Week 1	Aug 17-23	Intro to Small Animal Med 1 Mini-Panopto Infectious Diseases lectures 1-3: 1. Clinical Pharmacology and Antibiotic Usage 2. & 3. Tick-Bourne Diseases	Guttin Corrigan
Week 2	Aug 24-30	Infectious Diseases lectures 4-6: 4. Systemic Mycoses 5. Canine Viral Diseases 6. Feline Viral Diseases	Corrigan
Week 3	Aug 31-Sept 6	Infectious Diseases lecture 7: 7. Bacterial and Protozoal Diseases Infectious Diseases Assessment: DUE DATE Sept 6th Sakai Assignments: ID charts, 3 main points Sakai Quiz: ID quiz	Corrigan
Week 4	Sept 7-13	Dermatology Lectures 1-3: 1. Intro to Dermatology 2. Canine Focal/Multifocal Alopecia-- Folliculitis 3. Canine Focal/Multifocal Alopecia part 2	Lam
Week 5	Sept 14-20	Dermatology Lectures 4-7: 4. & 5. Canine Pruritus 6. & 7. Feline Pruritus	Lam
Week 6	Sept 21-27	Dermatology Lectures 8-9: 8. Canine Crusting, Erosive, and Ulcerative Lesions 9. Otitis Derm Assessment: DUE DATE Sept 27th Sakai Assignment: Dermatophyte discharges, 3 main points Sakai Quiz: Dermatology Quiz	Lam Paterson
Week 7	Sept 28-Oct 4	Behavior lecture: Feline Inappropriate Eliminations Behavior Assessment: DUE DATE Oct 4th Sakai Assignment: Ohio St. Indoor Cat Initiative assignment	Bain
Week 8	Oct 5-11	MIDTERM WEEK No exam for this class	
Week 9	Oct 12-18	Hematology and Immunology lectures 1-3: 1. Disorders of Hemostasis 2. Immune-Mediated Diseases 3. Approach to Anemia	Corrigan Guttin
Week 10	Oct 19-25	Hematology and Immunology lecture 4: 4. Approach to Thrombocytopenia, Misc. Hematologic Hematology & Immunol Assessment: DUE DATE Oct 25 Sakai Assignment: Case discharges, 3 main points Sakai Quiz: Hematology and Immunology Quiz	Guttin

Week 11	Oct 26- Nov 1	Renal and Urinary lectures 1-3: 1. Intro and Review Localization 2. Acute Kidney Injury 3. Chronic Kidney Disease	Guttin
Week 12	Nov 2-8	Renal and Urinary lectures 4-6: 4. Proteinuria and Glomerular Disease 5. Urolithiasis and Canine Urethral Obstruction 6. Feline Urethral Obstruction and Idiopathic Cystitis	Guttin
Week 13	Nov 9-15	Renal and Urinary lectures 7 & 8: 7. Urinary Tract Infections, Prostatic Disease, and Neoplasia 8. Micturition Disorders Renal and Urinary Assessment: DUE DATE Nov 15th Sakai Assignment: Acute Kidney Injury Case, 3 main points Sakai Quiz: Renal and Urinary Quiz	Guttin
Week 14	Nov 16-22	Emergency Medicine: CPR Sakai Forums Assignment DUE DATE Nov 22 Respiratory lectures 1 & 2: 1. Respiratory Disease—Emergency Considerations 2. Nasal Disorders	Corrigan Corrigan
Week 15	Nov 23-29	Respiratory lectures 3-5: 3. Disorders of the Larynx and Pharynx 4. Disorders of the Trachea and Bronchi 5. Disorders of the Pulmonary Parenchyma	Corrigan
Week 16	Nov 30- Dec 6	Respiratory lectures 6: 6. Disorders of the Pleural Cavity Respiratory Assessment: DUE DATE Dec 6th Sakai Assignment: 3 main points, Respiratory Case Sakai Quiz: Respiratory Quiz FINISH ALL INCOMPLETE ASSIGNMENTS AND QUIZZES BY DECEMBER 6TH	Corrigan
Week 17 1:30-3:30	Dec 7-13	FINALS WEEK No exam for this class	

ALL ZOOM OFFICE HOURS ARE OPTIONAL, AND WILL BE RECORDED: MONDAYS 1-2PM AST



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

SMALL ANIMAL MEDICINE 2 SYLLABUS (4 credits)

SAMS 524 TERM 6

FALL 2020

I. Course Faculty and Staff Information

Course Director: Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor.

Email: acorrigan@sgu.edu

Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3441

Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

Lecturers in this course:

Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor, tguttin@sgu.edu;

Melissa Bain, DVM, DACVB, Visiting Professor, mjbain@ucdavis.edu;

Jill Narak, DVM DACVIM (Neuro), Visiting Professor, jill.narak@hvsevet.com;

Sandra Bechtel DVM DACVIM (Onco), Visiting Professor, sbechtel@ufl.com.

Class Office Hours via Zoom: Every Monday 11:00am-12:00pm EST/AST. One-on-one office hours available upon request.

II. Course location

This course will be run completely online, **asynchronously**, using Sakai tools Panopto, Assignments, and Quizzes.

III. Prerequisite and/or co-requisite courses

Successful completion of the first 5 terms of the DVM curriculum at SGU SVM are required.

IV. Required resources

Students will need a functional laptop and reliable internet connection.

Panopto lecture slides and/or lecture notes will be provided as pdf files, and will not be made available in hard copy. The slides will be accessible for digital notes. For certain lessons, scientific articles, videos, or other references will be assigned and will be provided via Sakai.

All lectures will be recorded and distributed via Panopto.

The main references for this course are:

Textbook of Veterinary Internal Medicine, Editor Ettinger, Publisher Saunders, 8th edition.

Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.

V. Recommended resources

Videos and articles will be posted on Sakai.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None.

VIII. Course rationale

This course is the second in a 2-set series of Small Animal Internal Medicine courses. These courses will cover the clinical presentation, diagnostic evaluation, and current therapies in small animal medicine. This course, the second of the 2-set series, covers the following systems and topics: cardiology, gastroenterology, hepatology, neurology, oncology, endocrine diseases, behavior topics, and emergency and critical care. The focus of the course is evidence-based medicine, and the problem-based approach, starting with a problem list, developing a differential diagnosis list, followed by a diagnostic plan, and treatment plan, for diseases within each system or topic.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics, using correct medical terminology.
2. Use relevant clinical data to create differential diagnosis list for conditions in specific organ systems.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral for conditions in major organ systems to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases in specific organ systems and consider antimicrobial resistance.
5. Recognize emergency presentations and considerations for specific organ systems.

6. Formulate appropriate client communication regarding history, diagnostic tests, treatment, and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in the workspace, and select patients for isolation.
8. Understand evidence-based veterinary medicine and its application to internal medicine topics.

X. Lesson-level outcomes

See Appendices XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendices XXI

XII. Course Schedule

See Appendices XXI

XIII. Grading and assessment policy, and grading rubrics

Grading scale complies with SGU and SVM assessment guidelines:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Total grade in the course will be based on 125 total points:

- Formative assignment: 3 main points per lecture (for each of the 5 units, excluding behavior)—no grade but **must complete to pass**.
- Engagement rubric 15 points (please see Engagement Rubric, Appendix XXIII)
- Assignments x7 35 points (5 points each)
- Forum discussion DKA 5 points
- Quizzes x5 50 points (10 points each)
- NOTE: THERE IS NO MIDTERM OR FINAL EXAM IN THIS COURSE

XIV. Recommended study strategies

This is a completely asynchronous course devised with your flexibility in mind.

Assignment and quiz due dates are fixed, but if you fall ill, or have an excused absence such as a clinical rotation, you will have until the last day of the term to complete assignments. Please submit excuses via the Dean of Students (Dr.

Bhaiyat) and he will notify the course director. The material in this course will be integrating much of what you have learned in other courses, so get out your old course material and refer back to it for best learning. Other tips:

- Office hours attendance and participation are recommended.
- After each class, summarizing and making an outline of the lecture's most important points.
- Working through cases that are provided in lecture on your own, by formulating a problem list, differential diagnosis list, and diagnostic plan, prior to seeing the lecturer's slides with that information, is encouraged.
- Use the Learning Objectives for each section/lecture, and "Talia's Tips" main points, to guide studying.
- Refer to the Internal Medicine textbook.

XV. Instructor's expectations of the student

Students are expected to adhere strictly to the honor code. Assignments and quizzes will have feedback provided and expect students to keep this feedback and answers to the questions to themselves. **If you share feedback or answers on Sakai Assignments or Quizzes, this is considered cheating and a violation of the honor code.**

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that is seen fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although

attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Participation and engagement will be graded with the Engagement Rubric (see Appendix XXI).

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

No exams will be given via ExamSoft in this course.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI. Appendices: LO Mapping, Course Schedule, Student Engagement Rubric

CLOS: Upon successful completion of this course, the student will be able to:

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics, using correct medical terminology.
2. Use relevant clinical data to create differential diagnosis list for conditions in specific organ systems.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral for conditions in major organ systems to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases in specific organ systems and consider antimicrobial resistance.
5. Recognize emergency presentations and considerations for specific organ systems.
6. Formulate appropriate client communication regarding history, diagnostic tests, treatment, and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in the workspace, and select patients for isolation.
8. Understand evidence-based veterinary medicine and its application to internal medicine topics.

Course Level Outcomes	SGU-SVM Program Level Outcomes	AVMA clinical competencies
Course Level Outcome 1	1, 2, 3, 4, 6	1, 2, 3, 4, 5, 6, 9
Course Level Outcome 2	1, 2, 3, 4, 6, 20	1, 8
Course Level Outcome 3	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 5, 6,
Course Level Outcome 4	1, 2, 3, 4, 5, 6, 10, 12, 21, 22, 23, 24, 25, 27	1, 2, 3, 5, 6, 7, 9
Course Level Outcome 5	1, 2, 3, 5, 6, 20, 25	1, 2, 6
Course Level Outcome 6	3, 4, 5, 12, 13, 19, 27	1, 2, 8
Course Level Outcome 7	1, 2, 3, 4, 6, 8, 11, 18, 26, 28	1, 2, 7, 8, 9
Course Level Outcome 8	6, 11, 15, 28	7, 8, 9

Mapping of LLOs to CLOs:	Lecture/lab Learning Outcome	Course learning outcome
Behavior Section	1. Understand puppy development and important socialization times	1, 2, 8
	2. Design and analyze appropriate training and desensitization methods	1, 2, 4

	3. Recall important neurotransmitters involved in the rewards system.	1, 8
	4. Design and analyze appropriate pharmacotherapy for a variety of behavior disorders	1, 4, 8
Cardiology Section	1. Review and explain relevant anatomy, physiology and pathophysiology of common cardiac diseases	1,2,5
	2. Recognize congestive heart failure and formulate a treatment protocol for both stable and emergent patients	1,2,3,4,5, 6
	3. Recognize the clinical signs, presenting complaints and historical data that are indicative of cardiac disease	1,2,3
	4. Develop an appropriate cardiac work up for animals presenting with clinical signs of cardiac disease for both stable and emergent patients	1,2,3,4,5
	5. Understand common echocardiographic terminology and be able to interpret images in conjunction with clinical signs	3
	6. Compare and contrast canine endocardiosis and endocarditis	1,2,3,4,5, 7
	7. Interpret specific diagnostic testing to diagnose common canine and feline cardiac diseases	1,2,3, 5, 8
	8. Explain the etiology and pathophysiology of common canine and feline cardiac diseases	1,5, 6
	9. Implement and critique treatment plans for a variety of canine and feline cardiac diseases	4, 6
	10. Utilize current research to help with disease classification and treatments	1,2,3,4,5, 8
	11. Diagnose cases of: HCM, RCM, DCM, DVD, bacterial endocarditis, pericardial diseases, HWD, toxic and infectious myocardial diseases, SAS, mitral and tricuspid dysplasia, PS, VSD, ASD, TOF and PDA; based on the presenting complaints, relevant history, PE findings and specific diagnostic testing	1,2,3,4,5, 8
	12. Explain the prognosis for all the above diseases.	4,5,6
	13. Understand cardiac drug classification and formulate a treatment protocol for a variety of cardiac diseases	4,5, 6
	14. Compare and contrast systemic and pulmonary hypertension and design appropriate treatment protocols	1,2,3,4,5
	15. Interpret a variety of ECG's and appropriately diagnose common arrhythmias	1,2,3,5, 6
	16. Implement appropriate treatment protocols for common arrhythmias	4,5, 6
	17. Diagnose both atrial and ventricular arrhythmias, ARVC, and SSS; based on ECG findings, clinical signs, relevant history and presenting complaints.	1,2,3,4,5
	18. Describe appropriate ECG lead placement	3
	19. Understand the implications of the MEA	3
	20. Recall breed predispositions for cardiac diseases	1,2
	21. Recognize and utilize appropriate terminology	1,2,3,4,5, 6
Endocrine Section	1. Review and explain relevant anatomy, physiology and pathophysiology of common endocrine diseases	1,2,3,5
	2. Utilize the hypothalamic/pituitary/target organ axis to explain and select appropriate diagnostic testing	3, 5

	3. Recognize the clinical signs, presenting complaints and historical data that are indicative of endocrine diseases	1,2,5, 8
	4. Develop an appropriate diagnostic work up for animals presenting with clinical signs of endocrine disease for both stable and emergent patients	3,5
	5. Compare and contrast hypothyroidism and hyperthyroidism	1,2,3,4
	6. Compare and contrast pituitary dependent hyperadrenocorticism and an adrenal tumor	1,2,3,4
	7. Interpret and communicate specific diagnostic testing to diagnose common canine and feline endocrine diseases; including but not limited to LDDST, HDDST, endogenous ACTH, ACTH stims, Na+/K+ ratio, glucose curves, Thyroid testing and panels	3,5, 6, 8
	8. Explain the etiology and pathophysiology of common canine and feline endocrine diseases	1,2, 6
	9. Implement and critique treatment plans for a variety of canine and feline endocrine diseases	4,5, 6, 8
	10. Utilize current research to help with disease classification and treatments	1,2,3,4,5, 8
	11. Compare and contrast Hypoadrenocorticism and hyperadrenocorticism	1,2,3,4,5
	12. Diagnose cases of: hypothyroidism, including congenital presentation, hyperthyroidism, primary and secondary hypoadrenocorticism-both stable and in crisis, hyperadrenocorticism, Diabetes mellitus, diabetes insipidus, pheochromocytomas, insulinomas, gastrinomas, hyperparathyroidism- primary and secondary, hypoparathyroidism, growth hormone deficiency, and acromegaly ; based on the presenting complaints, relevant history, PE findings and specific diagnostic testing	1,2,3,4,5, 8
	13. Explain the prognosis for all the above diseases	4,5, 6
	14. Understand common medications and therapeutic modalities used in endocrine diseases and formulate appropriate treatment protocols	4,5, 8
	15. Compare and contrast different insulins and distinguish appropriate utilization for a variety of clinical presentations	4,5, 6, 8
	16. Understand and be able to recognize and explain insulin resistance and the Somogyi effect	1,2,3,4,5, 6
	17. Recall breed predispositions for endocrine diseases	1, 2, 8
Hepatobiliary Section	1. Recognize and utilize appropriate hepatobiliary terminology and abbreviations.	1,2,3,4,5,8
	2. Review and explain relevant anatomy & physiology of the normal hepatobiliary system.	1,5
	3. Recognize and describe common clinical signs, presenting complaints and historical data that are indicative of hepatobiliary disease	1,2,5, 6
	4. Explain the etiology and pathophysiology of common canine and feline hepatobiliary diseases	1,2,5, 6
	5. Develop an appropriate diagnostic work up for animals presenting with clinical signs of hepatobiliary disease for both stable and emergent patients	1,2,3,5,8
	6. Recall breed predispositions for common hepatobiliary diseases.	1,3,5,8
	7. Understand and utilize common diagnostic imaging terminology and be able to interpret images in conjunction with clinical signs of hepatobiliary disease	3,5,8

	8. Interpret and explain specific diagnostic testing to diagnose common canine and feline hepatobiliary diseases	3,5,6,8
	9. Understand common hepatobiliary drug classifications and formulate a treatment protocol for a variety of hepatobiliary diseases	4,5,8
	10. Implement and critique treatment plans for a variety of canine and feline hepatobiliary diseases	4,5,6,8
	11. Utilize current research to help with disease classification and treatments	1, 2, 3, 4, 5, 8
	12. Based on the presenting complaints, relevant history, PE findings and specific diagnostic testing, diagnose cases of: cholangiohepatitis, hepatic lipidosis, inflammatory hepatopathies, copper storage disease, infectious hepatitis, neoplastic disease, toxic hepatic injury, liver failure-acute and end stage, congenital and acquired vascular anomalies.	1, 2, 3, 4, 5, 6, 7
	13. Explain the prognosis for all above diseases	4,5,6,8
	14. Describe the indications for when hepatobiliary surgery should be performed, and indications for referral consultation, advanced procedures, and/or surgery.	1,2,3,4,5,6,8
Emergency Section	1. Identify the body systems affected by environmental emergencies including heat stroke, smoke inhalation, hypothermia and drowning; and how to evaluate those systems via clinical signs, physical exam parameters, and diagnostic tests	1, 2, 3, 4, 5
	2. Describe treatment approaches to each environmental emergency, and the system sequelae	4, 5, 8
	3. Identify prognostic indicators for environmental emergencies	4, 5, 6, 8
	4. Describe the pathophysiology of sepsis and SIRS	1,5
	5. Use clinical signs, physical exam findings, and lab parameters to identify SIRS and sepsis in patients	2,5
	6. Identify and locate the body system sources of inflammation or infections that can lead to SIRS/sepsis, and make a diagnostic plan, including the criteria for exploratory laparotomy	1, 2, 3, 4, 5
	7. Discuss the prognosis and treatment of SIRS and sepsis	4, 5, 6, 8
	8. Classify burns via depth and extent	1,2,5,8
	9. Evaluation of the burn patient and the body systems affected	1, 2, 3, 5
	10. Devise treatment plans for the different phases of burns: the hypodynamic shock phase, and the hyperdynamic hypermetabolic phase, including wound management and infection risks	4,5,8
	11. Evaluation of the electrocution patient and the body systems affected	1, 2, 3, 4, 5
	15. Explain indications for blood transfusions	4, 5
	16. Compare and contrast blood products and how to select appropriate therapeutic options	4 5
	17. Describe appropriate blood collection technique	5, 8
	18. Compare and contrast feline and canine blood types and the complications that can occur with inappropriate selection	4, 5
	19. Describe cross matching and know when to perform	3, 5
	20. Describe the process of a blood transfusion and what to monitor	5
Oncology Section	1. Explain the hallmarks of cancer and how they relate to available and upcoming treatment strategies	1,2 , 3

2. Recall tumor cell biology and how it relates to current therapies and expected outcomes with cancer therapy	1, 2, 3
3. Determine how to diagnose cancer, the limitations of each procedure, and which procedure is appropriate for diagnosis	1, 2, 3
4. Understand when and how to use chemotherapy in the veterinary patient	1, 3, 4, 8
5. Explain the goals of chemotherapy and anticipated side effects with clinical case examples	1, 2, 3, 6
6. Know and understand the mechanism of action, cell cycle specificity, common and unique side effects of chemotherapeutic drugs, when they are appropriate to administer (and when they are not), and how to manage both common and unique toxicities	1, 2, 3, 4, 5
7. Understand and apply conditional vs full FDA approval in practice	4, 8
8. Understand the mechanism of action and indications of non-chemotherapeutic cancer treatments	4, 8
9. Understand different types of radiation therapy available for cancer therapy	4
10. Report the mechanism of action and side effects (both acute and chronic) and appropriate indications of external beam radiation therapy (teletherapy) to the veterinary client	4, 6
11. Compare and contrast coarse versus fine fractionation	1 2 3 4 5
12. Know which tumor types respond well to teletherapy and be able to explain treatment to clients; understand when referral for radiation therapy is warranted	1 2 3 4 5 6
13. Make a differential diagnosis list for enlarged lymph nodes and understand how to differentiate between these causes	1 2 3
14. Diagnose lymphoma and understand when to submit cytologic samples to a pathologist for review	1, 2, 3
15. Understand and discuss staging procedures recommended for dogs and cats with lymphoma to clientele	1, 2, 3, 4, 5 6
16. Understand and discuss therapy options (initial and rescue) for dogs and cats with lymphoma to clientele	4, 5, 6
17. Know and be able to discuss the median survival times expected in dogs cats diagnosed with LSA with and without chemotherapy with clients	4, 6
18. Understand how to counsel clients through the treatment decision making process	3, 4, 5, 6, 8
19. Diagnose cutaneous and subcutaneous masses, including mast cell tumors (MCT)	1, 2
20. Understand when to submit cytologic samples to a pathologist for review	2, 3
21. Recommend appropriate staging and treatment options to pet owners when a MCT is diagnosed	3, 4, 6
22. Understand and explain the prognosis of a MCT based on discussed prognostic factors	4, 6
23. Discuss surgery, radiation therapy, chemotherapy, and supportive care for MCTs, and anticipated outcome	3, 4, 6
24. Understand the metastatic rates and metastatic pathways of hemangiosarcoma (HAS), relation to location, and effects on staging and prognosis	1, 2, 3, 4, 5, 6
25. Recognize typical presentation of HAS and guide a client through decision making even when a	1, 2, 3, 4, 5 6
26. Recommend appropriate supportive care and therapy for dogs with splenic masses.	3, 4, 5 6

	27. Understand the treatment options available for HSA, potential complications, & why we recommend them	3, 4, 5, 6
	28. Know and be able to discuss the median survival times expected in dogs diagnosed with HSA with and without chemotherapy with clients	4, 6
	29. Diagnose and appropriately stage and treat canine and feline soft tissue sarcomas and be able to discuss the median survival times expected	1, 2, 3, 4, 6
	30. Know where to appropriately vaccinate a cat	3, 4, 5
	31. Diagnose and appropriately stage canine bone tumors	1, 2, 3, 4
	32. Understand the differential diagnoses of bone lesions and recognize typical radiographic findings associated with osteosarcoma (OSA)	1, 2, 3
	33. Understand and recommend appropriate treatment options for canine OSA, both local and systemic	4, 6
	34. Know and be able to discuss the median survival times expected in dogs diagnosed with OSA with and without chemotherapy with clients	4, 6
	35. Diagnose and appropriately stage cancer in the dog and cat	1, 2, 3, 4, 5
	36. Understand the differential diagnoses and staging procedures for cancer in the dog and cat and explain to a client why the procedures are recommended	1, 2, 3, 4, 5, 6
	37. Understand, apply, and recommend cancer therapy to clientele	1, 2, 3, 4, 5, 6
	38. Understand when and why referral to a specialist should be recommended/ discussed with clientele	1, 2, 3, 4, 5, 6
	39. Interpret lab work associated with a cancer patient	2
	40. Formulate a problem list and a list of differential diagnoses for a cancer patient	2
	41. Recommend diagnostic procedures appropriate for a cancer patient based on presentation	3, 5, 6
	42. Discuss appropriate therapy for problems identified in the cancer patient	4, 6
Neurology Section	1. define primary, secondary, and reactive seizures.	1, 2, 4
	2. describe the typical clinical picture for idiopathic epilepsy and list the stages of seizure	1,5
	3. compare and contrast generalized vs. partial seizures.	1,2, 3, 4, 5
	4. Compare and contrast the main four antiepileptic (maintenance) drugs	4, 8
	5. Describe the mechanism of action, side effects, therapeutic drug monitoring	4
	6. Recognize emergency seizure situations and describe a step-wise treatment plan for controlling emergency seizures.	1, 2, 3, 4, 5, 6
	7. Recognize the clinical picture (signalment, onset, progression, etc.) typical of congenital brain disease.	1,2
	8. Describe CSF dynamics, including production, flow, and absorption.	1
	9. Apply the knowledge of CSF flow dynamics to the pathogenesis of hydrocephalus and Chiari-like malformation.	1,2
	10. Compare and contrast the clinical features of meningioma and glioma.	1, 2, 3, 4, 5
	11. Recognize the clinical picture typical of intracranial neoplasia.	1, 2, 5

	12. Describe the treatment options and goals (and prognoses, if known) for intracranial neoplasms	1, 2, 5
	13. Recognize the clinical picture typical of encephalitis.	1,2,5
	14. Compare and contrast the clinical features of GME, NME, and NLE.	1, 2, 5
	15. Describe the four types of canine distemper virus infections.	1 2 5
	16. Know the common causes of infectious encephalitis in dogs and cats.	2, 5
	17. Recognize the typical clinical picture of vascular encephalopathy.	1, 2, 5
	18. List possible underlying etiologies for hemorrhagic and ischemic stroke.	1, 2, 5
	19. List the components of Cushing's reflex and understand the pathophysiology of this response.	1, 2, 3, 5
	20. Understand the differences between primary and secondary brain injury.	1, 2, 3, 4, 5
	21. Describe the mechanisms of action of mannitol and hypertonic saline.	4
	22. Compare and contrast the signalment, pathogenesis, and progression of Type I and II IVDD.	1, 2, 3, 4, 5
	23. Describe treatment options for IVDD.	4, 5
	24. Recognize the clinical picture typical of FCE	1 2 3 4 5
	25. Describe the clinical features of myelomalacia.	3, 4, 5,
	26. Describe the appropriate care and precautions for the recumbent patient.	1, 2, 4, 5
	27. List the common etiologic agents for diskospondylitis, including how they are treated.	1 2 4 7
	28. Describe how to diagnose diskospondylitis.	1, 2
	29. Know the difference between spondylosis deformans and diskospondylitis.	2, 3
	30. List the possible infectious and autoimmune inflammatory causes of myelitis in dogs and cats.	1, 2
	31. Explain the most common spinal tumors in dogs and cats.	2
	32. Recognize the clinical picture typical of congenital myelopathies.	1 2
	33. Recognize the dog and cat breeds most commonly affected by congenital vertebral malformations.	1
	34. Describe how neuropathic pain develops in syringohydromyelia.	1
	35. Recognize the clinical picture typical of degenerative myelopathy.	1 2 3 4 5
	36. Describe the lesions associated with Wobbler syndrome and lumbosacral stenosis.	1, 2
	37. Compare and contrast medical management of Wobbler syndrome and lumbosacral stenosis.	1, 2, 3, 4, 5, 8
	38. Compare and contrast congenital vs. acquired myasthenia gravis.	1 2 3 4 5
	39. Contrast the classes of peripheral nerve injury and their associated prognoses.	1, 2, 3, 4, 5
	40. Compare and contrast the common differential diagnoses for diffuse lower motor neuron disease.	1, 2, 3, 4 5
Gastrointestinal Diseases Section	1. Recognize and utilize appropriate gastrointestinal terminology and abbreviations.	1,2,3,4,5,8
	2. Review and explain relevant anatomy & physiology, including neural responses, of the normal gastrointestinal tract.	1,2,5, 6

3. Recognize the clinical signs, presenting complaints and historical data that are indicative of gastrointestinal disease	1,2,5
4 Explain the etiology and pathophysiology of common canine and feline gastrointestinal diseases	1,2,5,6,8
5. Develop an appropriate diagnostic work up for animals presenting with clinical signs of gastrointestinal disease for both stable and emergent patients	3,4,5
6. Understand common diagnostic imaging terminology and be able to interpret images in conjunction with clinical signs of gastrointestinal disease	3,4,5, 8
7. Interpret specific diagnostic testing to diagnose common canine and feline gastrointestinal diseases	3,5, 6, 8
8. Understand common gastrointestinal drug classifications and formulate a treatment protocol for a variety of gastrointestinal diseases	4,5,8
9. Implement and critique treatment plans for a variety of canine and feline gastrointestinal diseases	4,5,6,8
10. Utilize current research to help with disease classification and treatments	1,2,3,4,5,8
11. Based on the presenting complaints, relevant history, PE findings and specific diagnostic testing, diagnose cases of: megaesophagus-related diseases; periesophageal stricture diseases; hiatal disorders; gastrointestinal foreign body obstructions; primary gastritis; gastrointestinal bacterial, fungal, and protozoal pathogens, and parasites; exocrine pancreatic diseases, including pancreatitis; inflammatory bowel and other malabsorption diseases; bacterial dysbiosis conditions; gastrointestinal neoplasias, including rectal polyps, and apocrine gland adenocarcinoma of the anal gland; and rectoanal conditions including anal furunculosis.	1,2,3,4,5, 8
12. Explain the prognosis for all of the above diseases	4,5, 6, 8
13. Describe the indications for when GI surgery should be performed, and indications for referral consultation, endoscopy, and or surgery.	1,2,3,4,5,6
14. Recall breed predispositions for common GI diseases.	1,5

Student Engagement Rubric:

Criteria	Excellent (A)	Good (B)	Fair (C)	Poor (F)
Assignments (40%)	Completes all the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes most (90%) of the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes some (70-89%) of the Assignments in a timely manner, and/or shows partial integration of thought of course material.	Completes less than 70% of the Sakai Assignments for the term in a timely manner or shows little integration of thought of course material.
Forums Posts (20%)	Completes all the Sakai Forums posts for the term in a timely manner.	Completes most (90%) of the Sakai Assignments for the term in a timely manner.	Completes some (70-89%) of the Sakai Assignments for the term in a timely manner.	Completes less than 70% of the Sakai Assignments for the term in a timely manner.
Sakai Quizzes (30%)	Completes all the Sakai Quizzes for the term in a timely manner.	Completes most (90%) of the Sakai Quizzes for the term in a timely manner.	Completes some (70-89%) of the Sakai Quizzes for the term in a timely manner.	Completes less than 70% of the Sakai Quizzes for the term in a timely manner.
Professionalism (10%)	Completes the online learning course with professionalism—timeliness, organization, communication.			Does not complete the online learning course with professionalism—timeliness, organization, communication.

Medicine Assignments Rubric:

Category	Exemplary (A)	Proficient (B)	Developing Skills (C)	Insufficient (F)
Completed assignment in time. (20%)	Assignment submitted on time.	Assignment submitted <48 hours past deadline with no documented excuse.	Assignment submitted 48 hours to 1 week late with no documented excuse.	Assignment submitted >1 week late with no documented excuse.
Followed assignment instructions. (20%)	Assignment instructions were followed thoroughly.	Most of the assignment instructions were followed thoroughly.	Some of the assignment instructions were followed thoroughly.	Less than acceptable following of assignment instructions occurred.
Integration of course content into answers. (20%)	Answers showed superb integration of course content.	Answers showed proficient integration of course content.	Answers showed average integration of course content.	Answers showed poor integration of course content.
Organization and clarity of formatting. (20%)	Answers were clearly organized, easy to read, with clear formatting and font/writing.	Answers were mostly organized, mostly easy to read, with mostly clear formatting and font/writing.	Answers were somewhat organized, but some issues made reading unclear, or unclear formatting, font, or writing.	Answers were not organized, were difficult to read, due to font, writing, or formatting.
Correct answers. (20%)	Answered 90% or greater correctly.	Answered 80-89% of answers correctly.	Answered 70-79% of answers correctly.	Answered less than 70% of answers correctly.
FINAL SCORE:				

Week	Day/Dates	LECTURE TOPIC	Instructor
Week 1	Aug 17-23	<p>Cardio lectures 1-4:</p> <ol style="list-style-type: none"> 1. Cardiac physiology and CHF 2. Feline Cardiac Diseases 3. & 4. Canine Cardiac Diseases (2) 	Corrigan
Week 2	Aug 24-30	<p>Cardio lectures 5-7:</p> <ol style="list-style-type: none"> 5. Systemic and Pulmonary Hypertension 6. ECG Interpretation 7. Arrhythmias <p>Cardio Assessment: DUE DATE Sept 6th Sakai Assignment: 3 main points, Cardiology discharges Sakai Quiz: Cardiology Quiz</p>	Corrigan
Week 3	Aug 31-Sept 6	<p>Gastrointestinal lectures 1-4:</p> <ol style="list-style-type: none"> 1. Intro, Localization and Nutrition Review 2. Oral and Pharyngeal Diseases 3. Esophageal Diseases 4. Acute Abdomen 	Guttin
Week 4	Sept 7-13	<p>Gastrointestinal lectures 5-8:</p> <ol style="list-style-type: none"> 5. Diseases that Cause Acute Vomiting 6. Pancreatitis 7. Diseases That Cause Acute Diarrhea 	Guttin
Week 5	Sept 14-20	<p>Gastrointestinal lectures 9-10:</p> <ol style="list-style-type: none"> 8. & 9. Diseases That Cause Chronic GI Signs 10. Colonic, Anal Sac, and Misc. GI Diseases <p>Gastrointestinal Assessment: DUE DATE Sept 20th Sakai Assignment: Gastrointestinal Cases, 3 main points Sakai Quiz: Gastrointestinal Quiz</p>	Guttin
Week 6	Sept 21-27	<p>ECC lectures 1-4:</p> <ol style="list-style-type: none"> 1. SIRS and Sepsis 2. & 3. Environmental Emergencies 4. Transfusion Medicine 	Guttin Corrigan
Week 7	Sept 28-Oct 4	<p>Behavior lectures 1 & 2:</p> <ol style="list-style-type: none"> 1. Puppies! 2. Psychopharmacology <p>ECC and Behavior Assessment: DUE DATE Oct 4th Sakai Assignments: 3 main points, Behavior assignment Sakai Quiz: ECC quiz</p>	Bain Guttin
Week 8	Oct 5-11	<p>Onco lectures 1-4:</p> <ol style="list-style-type: none"> 1. Intro to Oncology 2. Chemotherapy 3. Radiation Therapy 4. Lymphoma 	Bechtel
Week 9	Oct 12-18	<p>Onco lectures 5-7:</p> <ol style="list-style-type: none"> 5. Soft Tissue Sarcomas/Mast Cell Tumors 6. Hemangiosarcoma 7. Osteosarcoma <p>Onco Assessment: DUE DATE Oct 18th</p>	Bechtel

		Sakai Assignments: 3 main points, Onco chart Sakai quiz: Onco quiz	
Week 10	Oct 19-25	Neuro lectures 1-4: 1. Localization, and Cerebrum 2. Seizures, Brainstem 3. Cerebellar and Vestibular Syndromes 4. Myelopathies/IVDD	Narak
Week 11	Oct 26- Nov 1	Neuro lectures 5-6: 5. CNS Trauma 6. Neuromuscular Diseases Neuro Assessments: DUE DATE Nov 1st Sakai Assessments: 3 main points, Neuro discharge/referral Sakai Quiz: Neuro quiz	Narak
Week 12	Nov 2-8	Endocrine lectures 1-3: 1. Thyroid Diseases 2. & 3. Adrenal Diseases (2) 4. Diabetes/Acromegaly	Corrigan
Week 13	Nov 9-15	Endocrine lectures 5-6: 5. DKA ZOOM/Forums** read articles this week (Zoom DATE ** Nov 16th**) 6. Additional Endocrinopathies Endocrine Assessment: DUE DATE Nov 15th Sakai Assignment: 3 main points, Diabetes discharges Sakai quizzes: Endocrine Quiz	Corrigan
Week 14	Nov 16-22	Liver lectures 1-4: 1. Patient Presentations 2. Biliary Diseases 3. Feline Hepatic Lipidosis 4. Toxic and Infectious Liver Diseases	Guttin
Week 15	Nov 23-29	LAST ZOOM: Tinkerbelle Monday Nov 23 Liver lectures 5-7: 5. Inflammatory Liver Diseases 6. Vascular Liver Disease 7. End-Stage Liver Disease, Hepatic Neoplasia, and Empiric Treatment of Liver Disease Liver Assessment: DUE DATE Nov 29th Liver Assignment: 3 main points, Liver treatment sheet, mucocele Forum optional Sakai Quiz: Liver Quiz	Guttin Corrigan
Week 16	Nov 30- Dec 6	FINISH ALL INCOMPLETE ASSIGNMENTS AND QUIZZES BY DECEMBER 6TH	Guttin
Week 17 1:30-3:30	Dec 7-13	FINALS WEEK No exam for this course	

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT: Small Animal Medicine and Surgery
***COURSE NAME SYLLABUS* [Introduction to Clinical Practice](#) (1 credit)**
COURSE NUMBER [SAMS 526](#) TERM 5
FALL 2020

I. Course Director: Dr. Wayne Sylvester, DVM, MSc

Associate Professor

Medical Director- Small Animal Clinic

Email Address: WSylvester@sgu.edu

Telephone: 444-4175 Ext:3600

Office Location: Small Animal Clinic

Office Hours: By appointment on Zoom

Communication Lab Coordinators: Dr. Nicki Wise & Ms. Keshia John

Email Addresses: lnwise1@sgu.edu & kjohn5@sgu.edu

II. Course location

Online using Sakai resources such as Panopto, Lessons, and Assignments

Private clinical practice arranged through Y4C

III. Prerequisite and/or co-requisite courses

Current 5th term student

IV. Required resources

Computer with functional camera and microphone.

Notes from previous terms.

Necessary resources will be posted on SAKAI by faculty members.

Material covered in previous courses (example: anatomy, physiology, LAMS 502, SAMS 522, SAMS 515) are considered appropriate material

V. Recommended resources

Textbook of Veterinary Diagnostic Radiology	D. Thrall	6th ed., 2013
Textbook of Veterinary Diagnostic Radiology (E-Book)	D. Thrall	6th ed., 2013
Small Animal Internal Medicine	R. Nelson & C.G. Couto	5th ed., 2014
Small Animal Internal Medicine (E-Book)	R. Nelson & C.G. Couto	5th ed., 2014
Textbook of Veterinary Internal Medicine Expert Consult	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Textbook of Veterinary Internal Medicine (E-Book)	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Small Animal Surgery (Elsevier)	Tobias, K., et al.	2nd ed., 2017
Fundamentals of Small Animal Surgery (E-Book)	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Small Animal Surgery	T. Welch Fossum	4th ed., 2013
Veterinary Surgical Preparation and Protocol	C. Pasquini	2011

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Supplies, attire and etiquette expected, and schedules for each assignment

VIII. Course rationale (catalogue course description)

As a continuum of the problem-oriented medical record (POMR) skills learned in SAMS 515 and LAMS 502, the student practices and refines methods of incorporating physical examination, historical information collection, and development of problem lists based on current clinical cases from the Small Animal Clinic. Client relations and communication skills are emphasized. Creation of

the medical record and the importance of clinical practice management are discussed and practiced by the student.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Complete SOAP assignments using online clinical paper cases.
2. Discuss management of a case including history taking, physical examination, problem lists, differential diagnoses, diagnostic plans, treatment plans and problem solving using online clinical paper cases/online rounds.
3. Conduct client interviews online, including giving and receiving constructive and specific feedback from their coaches and simulated clients.
4. Develop self-assessment techniques and be able to reflect on the interviews and what can be done to improve their communication skills.

X. Lesson-level outcomes

Lecture 1. Overview of SAMS 526

Students should be able to:

Review and discuss writing of a comprehensive SOAP

Discuss the DAMNITV scheme

Discuss Problem based learning

Lecture 2.

Review and discuss the Calgary-Cambridge Guide for communication.

Online Clinical Rotations

Generate problem lists, differential diagnoses and comprehensive discussions.

Develop diagnostic plans and therapeutic plans.

Complete and submit written SOAP assignments on clinical paper cases in a timely manner.

Actively participate in rounds via Zoom

Online Communication Skills Labs

Perform a client interview following the guidelines in the Calgary-Cambridge communication guide

Perform peer evaluation and self-evaluation

Review their recorded interview and submit self-evaluation (where applicable)

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SVM program level outcome
Discuss management of a case including history taking, physical examination, problem lists, differential diagnoses, diagnostic plans, treatment plans and problem solving using online clinical paper cases/online rounds.	1, 2, 3, 4, 5, 6, 7, 10, 12, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
Complete SOAP assignments using online clinical paper cases.	3, 4, 5, 6, 9, 21, 24, 25, 26
Conduct client interviews, participate in small group interactions including giving and receiving constructive and specific feedback from their coaches, peers, and simulated clients	12, 13, 16, 19, 27
Develop self-assessment techniques and be able to reflect on the interviews and what can be done to improve their communication skills	15

XII. Course Schedule

Week 1	Zoom Introduction lecture (all students) Friday 12:00pm-1:00pm	1 lecture hour
Week 1	Zoom Communication Skills Labs Introduction lecture (all students) Friday 1:00pm-2:00pm	1 lecture hour

Week 2	Zoom small animal modules (all students) (materials are uploaded on sakai for students to review) Student may request an optional Zoom meeting for whole class on Friday 12:00pm-1:30pm	1.5 lecture hour
Week 3-7	SOAP Assignments using Online paper clinical cases on Thursday at 5:00pm via email or sakai	4 lecture hours
Week 2-7	Zoom meetings/online rounds with small groups (small groups) on Friday from 12:00pm-1:30pm	1 lecture
Week 9-15	SOAP Assignments using Online paper clinical cases on Thursday at 5:00pm via email or sakai	4 lecture hours
Week 9-15	Zoom meetings/online rounds with small groups (small groups) on Friday 12:00pm-1:30pm	1 lecture hours
Week 5-7 and Weeks 10-13	Communication Skills Labs online (Zoom) on Wednesdays from 1:00pm-4:00pm	1.5 lecture hours/3 lab hours per session
Total		15 lecture hours

Assignment Schedule

Submit complete SOAP assignments from clinical online cases and prepare discharge instructions.

Assignments will be open on or before 9:am Monday (local Grenada time) of your first week of your assigned two weeks of online rotation before and after mid-terms (see schedule), students will have 2 weeks to work on/complete their SOAP assignments and then submit their complete SOAP via sakai or email by 5:00pm on the following Thursday of the second week.

Zoom sessions to discuss the clinical cases and to host online rounds with clinicians and students in small groups will be held on every Friday usually at 12:00pm-1:30pm. Additionally, over the two assignment period, clinicians will also have “Office Hours” available to guide individual students via email or Zoom meeting.

All assignments are individual and mandatory.

For example, for Week 2 and Week 3:

For students in Group A only

1/3 of the total students in 5th Term (namely, Group A) will receive their two online clinical cases on Monday at 9:00am of Week 2 via email or sakai assignments, the students will have until Thursday

5:00pm of Week 3 to complete and submit their assignments. Students will have two mandatory online Zoom sessions with their assigned clinician on the Friday of Week 2 and the Friday of Week 3.

For Week 4 and 5.

For students in Group B only

1/3 of the total students in 5th Term (namely, Group B) will receive their two online clinical cases on Monday at 9:00am of Week 4 via email or sakai assignments, the students will have until Thursday 5:00pm of Week 5 to complete and submit their assignments. Students will have two mandatory Zoom sessions with their assigned clinician on the Friday of Week 4 and the Friday of Week 5.

For Week 6 and 7.

For students in Group C only

1/3 of the total students in 5th Term (namely, Group C) will receive their two online clinical cases on Monday at 9:00am of Week 5 via email or sakai assignments, the students will have until Thursday 5:00pm of Week 6 to complete and submit their assignments. Students will have two mandatory Zoom sessions with their assigned clinician on the Friday of Week 6 and the Friday of Week 7.

Week 8. No assignments because it is mid-term week.

For 9 and 10.

1/3 of the total students in 5th Term (namely, Group C) will receive their two online clinical cases on Monday at 9:00am of Week 9 via email or sakai assignments, the students will have until Thursday 5:00pm of Week 10 to complete and submit their assignments. Students will have two mandatory Zoom sessions with their assigned clinician on the Friday of Week 6 and the Friday of Week 7.

For 11 and 12.

1/3 of the total students in 5th Term (namely, Group B) will receive their two online clinical cases on Monday at 9:00am of Week 11 via email or sakai assignments, the students will have until Thursday 5:00pm of Week 12 to complete and submit their assignments. Students will have two mandatory Zoom sessions with their assigned clinician on the Friday of Week 11 and the Friday of Week 12.

Week 13 and 14.

1/3 of the total students in 5th Term (namely, Group A) will receive their two online clinical cases on Monday at 9:00am of Week 13 via email or sakai assignments, the students will have until Thursday 5:00pm of Week 14 to complete and submit their assignments. Students will have two mandatory online Zoom sessions with their assigned clinician on the Friday of Week 2 and the Friday of Week 3.

Week 15.

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Remediation week for any students who had deficient grades on SOAP assignments and/or Zoom rounds.

COMMUNICATION LAB ASSESSMENT: A brief self-assessment after the lab will be required. Details will be provided by Dr. Wise during the introduction in week 1.

XIII. **Grading and assessment policy, and grading rubrics** (must comply with SGU and SVM assessment guidelines)

Grading scale: This course is pass/fail.

Summative Assessments:

Students will receive 50% for pre midterm online assignments.

Students will receive 50% for midterm online assignments.

Formative Assessments:

Participation (answering questions during) small group Zoom meetings/online rounds.

Successful completion of online communication skills Lab.

Review communication interview.

Students are encouraged to participate in one (1) week clinical experience at a private practice. There is no grade attached to this clinical experience.

XIV. **Recommended study strategies**

The students should review the relevant subject matter pertaining to the medicine, surgery and emergency. The student should refer to previous course notes and manuals and should refresh clinical skills as necessary to be able to successfully complete the clinical experience section of the course.

Instructor's expectations of the student

The student is expected to read the WHOLE syllabus before the first lecture.

Students are expected to read the Calgary-Cambridge Guide before attending the online Communication Skills lecture and laboratory.

Expectations of the Student for Clinical Rotations include but are not limited to:

1.
 - a.
 1.
 1. a. Participation
 - b. Teamwork

- c. Professionalism
- d. Knowledge of SOAP and POMR
- e. Basic ability to collect history from pet owners and perform physical examinations
- f. Basic knowledge of medical terminology
- g. Be prepared—appropriate attire, equipment/supplies, mentally prepared
- h. Punctuality

XV. Professionalism statement

Students are expected to carry themselves in a professional manner in accordance with the AVMA professionalism competency. Professionalism is graded in every rotation. Unprofessional behavior, attitude, attire or ethics will not be tolerated. Students will be publicly representing themselves, St. George’s University and their profession; conducting themselves in an exemplary manner is expected. You are training to be veterinarians; a very high standard of professional conduct is expected of you.

XVI. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and complete all online assignments for which they have registered. Students’ lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

Attendance of the scheduled communication lab is **mandatory**. If you have a scheduling conflict, email Dr. Wise (lwise1@sgu.edu) and Keshia John (kjohn5@sgu.edu) IMMEDIATELY.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Students may optionally attend 1 week of clinical experiences at private practices. Students should also complete their case logs.

Lecture or Zoom session attendance policy: It is recommended that students attend all other lectures and Zoom sessions but these are not mandatory and will be recorded.

XVII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU,

International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XVIII. ExamSoft policy

There will be no mid-term or final exam on Examsoft.

Students grades for online rotations will be entered by faculty on Examsoft.

XIX. Copyright policy (if applicable):

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices (if applicable):

CLOs

LLOs

PLO to CLO mapping

Appendix 1.

Rubric for online Written comprehensive SOAP Assessments and Zoom rounds Assessments for SAMS 526

Name of Student _____

Name of Clinician _____

Date(s) of Rotation _____

	4 Performs assignment with 89.5-100% proficiency/competency	3 Performs assignment with 79.5-89% proficiency/competency	2 Performs the assignment with 69.5-79% proficiency/competency	1 Unable to perform assignment to an acceptable proficiency/competency (<69.5%)	Unable to Assess this assignment/online skill
Clinical Reasonin	Student attended and actively participated in online rounds on	Student attended and actively participated in online rounds on	Student attended but had limited participation with	Student did not attend and/or failed to participate with	

<p>g (oral) (Task review clinical paper or online case and participate in Zoom rounds)</p>	<p>Zoom. Student answered questions, asked questions and demonstrated appropriate knowledge base of surgery, emergency and medicine. Student was prepared for online rounds, student read and interpreted all information/case data sent to them prior to rounds.</p>	<p>Zoom. Student answered questions, asked questions and demonstrated appropriate knowledge base of surgery, emergency and medicine. Student was prepared for online rounds, student read and interpreted most information/case data sent to them prior to rounds.</p>	<p>regards to answering questions in online rounds on Zoom. Student demonstrated partial knowledge base of surgery, emergency and medicine. Student was partially prepared for online rounds, student partially read and partially interpreted information/case data sent to them prior to rounds. Student did not attend and/or failed to participate with regards to answering questions in online rounds on Zoom. Student did not demonstrate appropriate knowledge base of surgery, emergency and medicine. Student was not prepared for online rounds, student did not read and/or misinterpreted the information/case data sent to them prior to rounds.</p>	<p>regards to answering questions in online rounds on Zoom. Student did not demonstrate appropriate knowledge base of surgery, emergency and medicine. Student was not prepared for online rounds, student did not read and/or misinterpreted the information/case data sent to them prior to rounds.</p>	
<p>Applied Knowledge base (written and oral)</p>	<p>Student read and interpreted the clinical paper/online case. Through written assignments and</p>	<p>Student read and interpreted most aspects of the clinical paper/online case. Through written</p>	<p>Student read but fail to interpret/understand the clinical paper/online case. Through written</p>	<p>Through written assignments and any interactive Zoom sessions or sakai forums, the student clearly</p>	

	<p>interactive Zoom sessions or sakai forums, the student clearly discussed/stated the appropriate knowledge base for this stage of their career.</p> <p>Student is able to express in written format (+/- discuss verbally via Zoom) their knowledge of companion animal medicine, shelter medicine, surgery, anesthesia or emergency and critical care in a well-organized, logical and easy to follow format.</p> <p>Student develops appropriate written plans for case discussion and management</p>	<p>assignments and interactive Zoom sessions or sakai forums, the student discussed/stated the appropriate knowledge base for this stage of their career on most occasions.</p> <p>For the most part, the student is able to express in written format (+/- discuss verbally via Zoom) their knowledge of companion animal medicine, shelter medicine, surgery, anesthesia or emergency and critical care in an organized and logical format.</p> <p>For the most part, the student develops appropriate written plans for case discussion and management</p>	<p>assignments and interactive Zoom sessions or sakai forums, the student clearly discussed/stated inadequate knowledge base for this stage of the career.</p> <p>Student occasionally shares appropriate of companion animal medicine, shelter medicine, surgery, anesthesia or emergency and critical care in a haphazard and illogical format.</p> <p>Student develops inappropriate written and/or verbal plans for cases.</p> <p>Knowledge base needs to improve</p>	<p>discussed/stated inappropriate knowledge base for this stage of the career.</p> <p>Student is unable to share/express in written or verbal format any knowledge of companion animal medicine, shelter medicine, surgery, anesthesia or emergency and critical care.</p> <p>Student develops inappropriate written and/or verbal plans for cases</p>	
<p>SOAP assignments online (written assignment)</p>	<p>Written SOAP contained comprehensive Subjective (including signalment and SHEDC), Objective (TPRH, BCS, weight, all parameters from all body systems, all Day 1 diagnostic tests and their results), Assessment</p>	<p>Written SOAP contained adequate Subjective, Objective, Assessment and Plan sections. The Assessment section contained at least 75% of the total problems from the Subjective and Objective sections and 75% of them are prioritized correctly.</p>	<p>Written SOAP partially contained some correct aspects of Subjective, Objective, Assessment and Plan sections. The Assessment section contained at least 50% of the total problems from the Subjective and Objective sections and 50% of them are</p>	<p>Written SOAP consistently fails to include information in the correct section.</p> <p>The SOAP does not follow a logical order and is disorganized and inaccurate.</p> <p>More than 25% of the total problems are omitted,</p>	

<p>(including Problem List, all Differential Diagnoses for each problem from the DAMNIT-V scheme, discussion section in paragraph format) and Plan sections (including Diagnostic Plan, Treatment plan, client education, follow up plan). The Assessment section contained a complete prioritized problem list, all differential diagnoses (using DAMNIT-V scheme or Body system but not both for the same problem) for each problem in order of most likely to least likely and a mandatory discussion section in paragraph format is included. The SOAP contained only appropriate medical terminology. The discharge instructions must be written in layman terms</p> <p>and include important client take-aways for medications.</p> <p>The SOAP assignment is organized, accurate and thought</p>	<p>75% of the differential diagnoses for each problem are listed in order of most likely to least likely and mandatory comprehensive discussion subsection in paragraph format is included.</p> <p>The SOAP contained 75% of appropriate medical terminology whereas the discharge instructions must be written in layman terms.</p> <p>The SOAP is well organized, accurate and thought processes flows logically for the most part.</p>	<p>prioritized correctly.</p> <p>50% of the differential diagnoses for each problem are listed in order of most likely to least likely.</p> <p>The mandatory discussion subsection within the Assessment section in paragraph format was either missing completely or was very brief and vague.</p> <p>The SOAP contained 50% of appropriate medical terminology. The discharge instructions contained more a mixture of difficult medical terminology that a client will struggle to understand and layman terms.</p> <p>The SOAP is partially organized, inaccurate and thought processes do not flow in a logical sequence.</p>	<p>problems on the Problem List are not prioritized.</p> <p>The discussion subsection with the Assessment is missing or written in bullet point format.</p> <p>Discharge instructions only contains medical terminology which make it impossible for clients to understand or comply with the instructions given.</p>	
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	processes flows logically.				
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Comments

Appendix 2.

Course online Rotation Schedule

The class will be randomly divided in Groups A, B, C.

Group A will have clinical paper case assignments in Weeks 3 and 4.

Group B will have clinical paper case assignments in Weeks 5 and 6.

Group C will have clinical paper case assignments in Weeks 6 and 7.

Each student will need to participate in two hour Zoom rounds sessions on Fridays, these sessions will be recorded.

Group A will have clinical paper case assignments in Weeks 9 and 10.

Group B will have clinical paper case assignments in Weeks 11 and 12

Group C will have clinical paper case assignments in Weeks 13 and 14.

Each student will need to participate in two hour Zoom rounds sessions on Fridays, these sessions will be recorded.

Week 15 and 16 will be dedicated to any make up rotations that students missed due to valid medical excuses.

Appendix 3.

SAMS 526 communication skills online schedule

Time: Wednesdays from 1:00pm-4:00pm AST

Week number (#)	Group Number/student names
4 September 9th	TBD
5 September 16th	TBD
6 September 23rd	TBD

9	October 14th	TBD
10	October 21st	TBD
11	October 28th	TBD
12	November 4th	TBD

Appendix. Skills that students should acquire at the optional 2-5 days clinical experiences at local private practices.

Clinical Practice Experiences (small animal skills)	<ol style="list-style-type: none"> 1. Perform a complete physical examinations in private practice. 2. Recognize personal limitations in knowledge, ability, and equipment. 3. Develop an appropriate treatment plan with a private practitioner. 4. Demonstrate technical competency including: venipuncture, restraint, and other technical procedures, such as FNA, U/A, cystocentesis, ear/skin cytology. 5. Analyze, describe and/or perform surgery and anesthesia procedures. 6. Conducts him/herself professionally and ethically in communication with faculty. 7. Demonstrate professional demeanor at all times, e.g., work ethic and punctuality.
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Add attachments

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT
JUNIOR SURGERY AND ANESTHESIA LABORATORY (2 credits)
SAMS 527 (TERM 5)
Fall 2020

I. Course Faculty and Staff Information

Course Director: Marta Lanza-Perea, DVM, MRCVS, MSc,
Associate Professor (mperea@sgu.edu)

Assistant Course Director: Emily Turitto, DVM (eturit1@sgu.edu)
Assistant Professor

Office Hours/Communication:

- Faculty are available via email, response time within 24-48 hours
- Weekly rounds will serve as way of constant communication with students
- General course communication will occur within Sakai Email or Sakai announcements

Participating Faculty:

Surgery:

- Keith Kalasi, DVM. Instructor (KKalasi@sgu.edu)
- Heidi Janicke, DVM, PhD, MRCVS, Dipl. ECVS, SFHEA. Professor (hjanicke@sgu.edu)
- Tara Paterson, DVM, MSc. Associate Professor (tpaterson@sgu.edu)
- Adria Rodriguez DVM, MSc, CVA, CVCH. Associate Professor (airodriguez@sgu.edu)
- Rodolfo Bruh Day, DVM, ChD.SAS, Dipl.CLOVE, EdD. Professor (rbruhl-day@sgu.edu)
- Tomas Guerrero, DVM, Professor (tguerrero@sgu.edu)

Anesthesia:

- Flavia Restitutti DVM, PhD (frestitu@sgu.edu)
- Mercedes Miccio, DVM (mmiccio@sgu.edu)
- Mrs. Naudia Dundas, Demonstrator (ndundas@sgu.edu)

Technicians

- Registered Veterinary Technician: Ms. Elizabeth Peach (epeach@sgu.edu)
- Veterinary Technician: Mr. Jakobus Louw (jlouw@sgu.edu)
- Veterinary Technician: Mr. Quacy Matthew (QMatthew@sgu.edu)
- Veterinary Technician: Ms. Lydia Williams (LWillia8@sgu.edu)
- Veterinary Technician: Mr. Jude Modeste (jmodeste@sgu.edu)

Community Dog Recruitment Coordinator: Mr. Quacy Matthew

Assistant dog recruitment: Ms. Diane Basset

II. Course location

- Online Location
- Lectures will be available in Sakai via Panopto or Zoom, both live (synchronous) and recorded sessions (asynchronous). Rounds and Mock surgeries will be done using synchronous zoom sessions
- Sakai Resources being utilized include but are not limited to Announcements, Calendar, Resources, Assignments, Forums, Tests and Quizzes

III. Prerequisite and/or co-requisite courses

- SAMS517 (Anesthesiology course, Term 4)
- SAMS514 (Introduction to Surgical Skills, Term 4)
- Students must be current 5th term SVM students

IV. Required resources

- JSAL manual, updated for Fall 2020
- Veterinary Surgery: Small Animal, K Tobias and S Johnston
- Small Animal Surgery, T Welch Fossum, 4th Ed, 2013
- Fundamentals of Small Animal Surgery, FA Mann, Constantinescu & Hun-You, 2011

V. Recommended resources

- Veterinary surgical preparation and protocol, C Pasquini, 2011
- Course notes and videos from term 4 SAMS 514 (Intro to Surgical Skills) and SAMS 520 (Anesthesia)
- SAMS527 Resource contents in Sakai
- The Library on the SGU Carnage is a great resource to access materials and journal articles.

VI. Special accommodation

- Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

- Students will be required to create their own castration and spay models. This exercise is meant to be a learning experience meant to promote reflection and creativity as well as review of anatomy in preparation to perform the mock surgeries to practice their skills.
- A good internet connection and the possibility to have a camera to show their models and hands while performing mock surgeries.

VIII. Course rationale

This is a hands-on, faculty supervised, surgery and anesthesia clinical skills course. Students will be divided into teams of four and will be expected to apply knowledge gained from previous courses (SAMS 520- Anesthesia/SAMS 514- Intro to surgical Skills) and concurrent courses (SAMS 518- Small Animal Surgery).

Students will practice communication skills by presenting in pre-surgical and pre-anesthetic rounds. Rounds will include presentation of cases including signalment, physical examination and bloodwork findings, diagnostic procedures and treatment plans, as well as discussions related to infectious diseases with/without zoonotic potential.

Anesthetic protocols and the surgical plan for either a spay or a neuter in client-owned surgical candidates will be reviewed. Students will perform MOCK canine sterilization surgical procedures in models while describing aseptic technique principles.

Students will maintain medical records using the SOAP format for every patient, including the writing of surgery and anesthesia reports, postoperative treatment plans, discharge instructions, and will perform pain management assessments.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories
2. Describe and perform a Castration and a Spay procedure in a male and female model patient as a surgeon
3. Describe sedation and or anesthesia protocols in a male and female model patient for castrations and Spays
4. Demonstrate proficiency in medical record writing and keeping
5. Professionally perform and contribute in a team environment

X. Lesson-level outcomes

Course Level Outcomes	Lab Learning Outcomes:
1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories	<ol style="list-style-type: none">1. Describe and discuss a complete physical examination on a dog2. Describe and discuss a preanesthetic assessment including physical exam and collection of relevant medical history and diagnostic information3. Discuss and review surgical cases during rounds4. Use appropriate communication with surgeons regarding the perioperative patient condition5. Describe a patient during recovery from anesthesia until complete recovery6. Organize and demonstrate patient care in the postoperative period and to transfer a patient to the care of a co-worker if necessary7. Discuss postoperative pain and plan analgesic treatment as necessary

<p>2. Describe and perform a Castration and a Spay procedure in a model as a surgeon</p>	<ol style="list-style-type: none"> 1. Discuss general operating room procedures 2. Select and discuss correct patient and surgeon aseptic surgical preparations 3. Discuss aseptic technique throughout the procedures 4. Identify and select proper instrument handling 5. Select and execute suture patterns and knots 6. Discuss adequate tissue handling 7. Select suitable suture materials
<p>3. Describe sedation and or anesthesia in a model patient for Castrations and Spays</p>	<ol style="list-style-type: none"> 1. Prepare a complete and appropriate anesthetic plan including fluid therapy and perioperative pain management 2. Select and discuss the appropriate anesthetic equipment and check it before use 3. Discuss proper administration of preanesthetic medication by intramuscular injection 4. Discuss appropriate placement of an intravenous catheter 5. Discuss induction of general anesthesia by intravenous drug injection 6. Discuss process of placing an endotracheal tube 7. Discuss use an anesthetic machine for maintenance of inhalational anesthesia 8. Calculate perioperative fluid therapy 9. Discuss how to assess the depth and adequacy of anesthesia and intraoperative analgesia with and without the aid of monitoring equipment
<p>4. Demonstrate proficiency in medical record writing and keeping</p>	<ol style="list-style-type: none"> 1. Write basic medical records (SOAPS, Surgery Reports, Anesthetic Record Sheet, Discharge Instructions, and Hospitalization Forms).

<p>5. Professionally perform and contribute in a team environment</p>	<ol style="list-style-type: none"> 1. Demonstrate professional behavior 2. Demonstrate situational Awareness 3. Demonstrate maturity 3. Demonstrate that is safe to perform procedure
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XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Please refer to Appendix 1 at the end

XII. Course Schedule

For clarification of the schedule below:

Week 1, 2 and part of 3 will be review sessions for anesthesia and surgery and a new lecture for the whole class via synchronous zoom sessions or asynchronous recorded lectures

All synchronous sessions will take place at 11am-12pm (EST). This includes de prep lectures as well as Rounds and Mock surgeries

After those initial compulsory preparatory session, each student will attend:

- Anesthesia Rounds (1h) x2 - weeks 3 and 9
- Surgery Rounds (1h) x 6 - Weeks 4, 5 ,6, 10,11,12
- Mock castration (1h) per student in a group of 4
- Mock Spay (1h) Individual one to one with instructor

The following will be assignments due per student:

- Formative: Draping a dummy video
- SOAPS x 6 (3x castrations, 3x spays)
- Surgery Reports x2 (1 castration, 1 spay)
- Anesthesia round x2 (1 castration, 1 spay)
- Anesthesia case assignment x2 (1 castration, 1 spay)
- Surgery pre procedure assessments x2 (1 castration, 1 spay)

Week	DATE (11am-12pm)	LECTURE/LAB/MODULE	ASSIGNMENT
Week 1	17 - 21 Aug	Tues 18 th : Anesthesia Review (½ Class) Zoom live Thurs 20 th : Anesthesia Review (½ Class) Zoom live	
Week 2	24 - 28 Aug	Tues 25 th : JSAL intro (whole class) Zoom live Surgery prep review videos Panopto (whole class) Asynchron	Watch castration procedure video Sun 30 th : Castration Video Assignment Due
Week 3	31 Aug - 4 Sept	Tues 1 st : Lecture on Medical Records and Castration Procedure (Zoom live) Thurs 3 rd : Anesthesia Castration Rounds all class	
Week 4	7 Sept – 11 Sept	Tues 8 th : Castration Rounds all class Thurs 10 th : Mock Castration 1h/ 24 Students	Sun 13 th : SOAPs due (all groups)
Week 5	14 Sept – 18 Sept	Tues 15 th : Castration Rounds 1/3 Class 1 h Thurs 17 th : Mock Castration 1h/ 24 Students	Sun 20 th : SOAPs due (all groups)
Week 6	21 Sept – 25 Sept	Tues 22 nd : Castration Rounds 1/3 Class 1 h Thurs 24 th : Mock Castration 1h/ 24 Students	Sun 27 th : SOAPs Due (all groups)

Week 7	28 Sept – 2 Oct	Tues 29 th : Mock Castration 1h/ 24 Students Thurs Sept 1 st : Mock Castration make up	Anesthesia Castration assignment due
Week 8	5 Oct – 9 Oct	MIDTERMS: NO ASSIGNMENTS	
Week 9	12– 16 Oct	Tues 13 th : Zoom Spay Procedure live synchronous Thurs 15 th : Anesthesia Rounds whole Class 1 hr	Sun 18 th : Spay Video Assignment Due
Week10	19- 23 Oct	Tues 20 th : Spay Rounds whole class Thurs 22 nd : Mock Spay 12 students	Sun 25 th : SOAP1 due
Week11	26 - 30 Oct	Tues 27 th : Spay Rounds whole class Thurs 29 nd : Mock Spay 12 students	Sun 1st: SOAP2 due
Week12	2 - 6 Nov	Tues 3 rd : Spay Rounds whole class Thurs 5 th : Mock Spay 12 students	Sun 8 th : SOAP3 due
Week13	9 – 13 Nov	Tues 10 th : Mock Spay 12 students Thurs 12 th : Mock Spay 12 students	Sun 15 th : Surgery Reports Due

Week14	16 – 20 Nov	Tues 17 th Mock Spay 12 students Thurs 19 th Mock Spay 12 students	Sun 22 nd : Surgery Reports Due Anesthesia Spay case assignment due
Week15	23 – 27 Nov	Tues 24 th Mock Spay 12 students Thurs 26 th Mock Spay 7 students and make up if needed	Sun 29 th : Surgery Reports Due
Week16	30 Nov – 4 Dec	NO ASSIGNMENTS- Make up	
Week17	7 – 11 Dec	FINALS: NO ASSIGNMENTS	

XIII. Grading and assessment policy, and grading rubrics

1. Anesthesia Portion: 30%

- Rounds Presentations (x2) **6%** They will be assessed during rounds in week 3 and week 9
- Anesthesia Case Assignments (x2) **24%** These two assignments will be released after each of the anesthesia rounds. Deadline for completion are specified in the schedule.

2. Surgery Video Assignments (x2): 5%

- Short answer quizzes to be submitted previous to performing the mock castration and spay. Due dates are specified in the schedule.

3. Medical Records. SOAPS (x6): 20%

- SOAPS will be a group submission due Sunday after rounds.
- There will be 3 for Castrations and 3 for Spays. The first two are meant to be “training SOAPS” and will not count for the grade.
- The SOAP grades are based on group effort. Every person in the group of 4 will receive the same grade per patient.

4. Surgery Reports (x2): 5%

- These reports will be an individual student submission due on the Sunday after each student’s Mock castration (2.5 %) and Mock OVH (2.5%) in the primary surgeon role.
- Grades for medical records and surgery reports will be available in Sakai as they get corrected by instructors.

5. Mock Surgeries: 35%

- Castrations: 10%. They will be conducted in groups of 4 students with 1 instructor.
- Spays: 25%. They will be conducted individually, one student to one instructor
- A comprehensive preparation guide and expectative will be available for students to prepare for this exercise. This guide will include ideas to construct the models as well as what to have ready to perform.
- See Grading Rubric at the end of the Syllabus in Appendix 2

4. Professionalism: 5%

- It will be graded throughout the term by peers and faculty
- It is meant to be a combination of self-evaluation, reflection, participation and peer review.
- Two peer assessment assignments will be posted and due by midterms and final weeks. See Grading Rubric at the end of the Syllabus in Appendix 3 (please read and refer to the professionalism in section XVI)

Grading scale:

- This course is graded with a letter grade in accordance to the SGUSVM grading scale
- DOPS (Direct Observation of Procedural Skills) are clinical proficiency tests and are graded differently to exams and coursework. The importance of clinical skills in this course must be emphasized and recognized. Due to their practical nature, grades for DOPS are calculated independently using rubrics
- Due to the nature of DOPS, subjective grading is used in whole or in part for the course. A rubric will be supplied to outline the criteria that are necessary to perform at an acceptable level. These are the course director's expectations for a particular assignment or task. These rubrics provide a basis for self-evaluation, reflection, and peer review. This is necessary for fair assessment and student understanding.
- Rubrics are meant for student performance feedback, NOT for calculating grades. Different categories within a rubric have different weights associated depending on the importance of the skill
- There is a "Daily Performance" (pass/fail) element to the grading aside from the technical skills that MUST be passed in order to pass this course. "Daily Performance" refers to professional behavior, situational awareness, being safe to perform the procedure, collaboration with team members, and maturity. Students MUST pass that portion even if the technical skills grade is passed.
- Grades are determined by the faculty members involved in the course and are based on proficiency, participation, preparation and knowledge, professionalism, communication and clinical responsibility
- There will be no written mid-term or final examinations.
- Activities and participation may be restricted for any student not adequately prepared for a session. Lack of preparation is not acceptable and can result in dismissal.

The final pass/fail rate will be at the discretion of the course director with input from all course instructors

- Student performance is expected to improve during the course. Performance is based on course learning objectives and expected clinical skills.
- Students will receive feedback for their daily performance and record keeping after each rotation.
- Pay attention to the instructor's comments and try to improve on comments they made.

XIV. Recommended study strategies

It is recommended that the student prepares and reviews for each of the rounds sessions and mock surgeries. Each student is expected to be familiar with all aspects of the laboratory session reviewing relevant class notes, textbooks, and any relevant materials from other courses in preparation for the laboratory.

All students are expected to bring forward skills attained in Term 4. Please practice suturing before performing mock surgeries. Students are responsible for supplying their own suture material, practice board and Castration/ Spay models.

Additional assistance or Office hours can be arranged via email with the course instructors (mperea@sgu.edu , eturitt1@sgu.edu, kkalasi@sgu.edu) or the anesthesia team (frestitu@sgu.edu , mmiccio@sgu.edu) or with the appropriate instructor.

XV. Instructor's expectations of the student

- **Students are expected to build their own castration and spay models to perform the “mock surgeries”. Guides and suggestions on how to do them, as well as a list of necessary components and anatomical structures will be provided**
 - The student is expected to read and use the JSAL lab manual before each session of rounds and mock surgery, as needed.
 - The student is expected to submit all assignments and assessments on time. If there is an issue, students are required to reach out to the course director or the appropriate instructor via email: mperea@sgu.edu, eturitt1@sgu.edu, kkalasi@sgu.edu, frestitu@sgu.edu, mmiccio@sgu.edu, ndundas@sgu.edu
 - Students who are not performing up to an adequate standard will be notified the latest after midterm week or as needed. At the time of such an evaluation, methods to improve the student's performance will be discussed and a date will be set for a follow-up meeting to discuss the student's performance.
 - If you have any disability that may impair your performance should immediately inform the Course Director and/or the Instructors in order to receive the necessary assistance in the class.
 - Upon completion of this course, we would appreciate it if you could take the time to complete the course & instructor evaluations. Your thoughts, comments and constructive criticisms are extremely important and valuable to us as we continue to develop and improve this course.

XVI. Professionalism statement

- Punctuality is expected for rounds and mock surgery days.
- Cell phones are only allowed as calculators and should be switched off or in silent mode during live lectures and rounds. Ensure that all social media websites are logged off during class/ lab time.
- Students are expected to conduct themselves in an appropriate professional manner in their interactions with lecturers and fellow students via the online format. Please be respectful, courteous and open to other people's opinions.
- Please arrive on time for lectures and labs if the session is live and dress appropriately.
- Professional behavior is always expected.

XVII. Attendance/Participation Policy

- Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered.
- **Live Lecture/Lab Zoom Sessions Policy:**
 - Case presentations/ Rounds for anesthesia and Surgery will be live Zoom Sessions at a scheduled time. They are all mandatory for all students. These sessions will be the basis for the group work and the SOAP. If there is a major issue, an e mail to the correspondent instructor will be sent. The sessions will be recorded.
 - The Mock Surgeries will be live group or individual sessions and MANDATORY for each student
 - For attendance of live rounds sessions, students are strongly encouraged to turn on their cameras to increase class engagement and interaction. For the Mock surgeries, cameras are a MUST.
 - Students are expected to behave in a professional manner and dress appropriately for all live sessions.
 - If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

- Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.
- Students who have technical issues during the examination MUST inform the Course Director (mperea@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.
- Make-up assignments/assessments are at the discretion of the course director

XIX. ExamSoft policy

N/A

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices: Appendix #1 (to section XI)

Alignment of Course Learning Outcomes with Program Learning outcomes

1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4, B5,B6,B7,B8 C1,C2,C3,C4,C5,C8,C9
2. Perform a Castration procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C4,C5,C8
3. Perform sedation and or anesthesia in healthy male canine patients for Castrations	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C1,C2,C3,C4,C5,C8
4. Perform a Spay procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C4,C5,C8
5. Perform sedation and or anesthesia in healthy female canine patients for Spays	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C1,C2,C3,C4,C5,C8
6. Demonstrate proficiency in medical record writing and keeping	A1,A2,A3,A4, A5 B1,B2, C1,C2,C3, C4,C5
7. Professionally perform and contribute in a team environment	B1, B2,B3,B6 C8
8. Perform the minimum ophthalmic data base	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8
9. Practice techniques used in routine dentistry	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8
10. Practice techniques uses in osteosynthesis	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8

Appendix #2: Mock castration Rubrics

MOCK CASTRATION SURGEON RUBRICS				
	Able to perform the task with 89.5-100%	Able to perform the task with 79.5-89%	Able to perform the task with 69.5-79%	Unable to perform the task to an acceptable

	proficiency/competency	proficiency/competency	proficiency/competency	proficiency/competency (<69.5%)
Use of correct scalpel grip	The student demonstrates the ability to correctly hold the scalpel in the pencil grip position without being prompted.	The student demonstrates the ability to correctly hold the scalpel in the pencil grip position but needs to be prompted.	The student can hold the scalpel in the pencil grip position being prompted and with a lot of hesitation.	The student can't hold the scalpel in the pencil grip position.
Process of making an incision	The student demonstrates the ability to correctly identify the prescrotal area to make the incision. The student acknowledges they need to check with anesthesia before making first incision to check for patient's anesthetic depth/to let him/her know they would like to start the procedure. Student makes 1 continuous incision big enough to allow testicle to be removed. Student is able to keep depth even while making incision. Student is able to correctly identify the anatomical layers being incised.	The student demonstrates the ability to correctly identify the prescrotal area to make the incision. The student needs to be prompted to communicate with the anesthesia student for patient's anesthetic depth/to let him/her know he/she would like to start the procedure. The student makes an incision with a little hesitation and is either too bold or too cautious in order to exteriorize the testicle. The student is able to correctly identify the anatomical layers being incised.	The student is somewhat able to identify the prescrotal area to make the incision. The student needs to be reminded to check with the anesthetist about the patient's readiness before starting the incision. The student makes the incision too big or too small for the testicles and/ or in the wrong place. The student can assess the depth of the layers with a lot of help while making incision. The student is not able to correctly anatomically identify layers that are being incised.	The student is unable to identify the prescrotal area to make the incision. The student starts the procedure without checking with the anesthetist about the patient's readiness. The student makes the incision paramedian too big or too small for the testicles and in the wrong place, cutting into the scrotum or going too far cranial. The student is not able to assess the depth of the layers at all while making incision. The student is not able to correctly anatomically identify layers that are being incised.
Thumb forceps	The student holds the thumb forceps between the thumb and index finger in a pencil grip when being used and in a palm position during tying of knots.	The student holds thumb forceps between the thumb and index finger in a pencil grip when reminded. The student mostly holds the thumb forceps in the palm position when tying knots.	The student needs to be reminded multiple times to hold the thumb forceps between the thumb and index finger in a pencil grip. The student needs to be reminded multiple times to keep the thumb forceps in the palm position when tying knots.	The student has to be constantly reminded to hold the thumb forceps between the thumb and index finger in a pencil grip. The student needs to be constantly reminded to keep the thumb forceps in the palm position when tying knots.
Needle holders and needle placement	Loads needle properly and efficiently for forehand and backhand needle passes.	Loads needle properly for forehand and backhand needle passes but is inefficient and often requires multiple attempts.	Loads needle in proper direction for forehand pass but sometimes loads incorrectly for backhand pass. Loads too close or too far from	Frequently loads needle incorrectly.

			the swaged end of the needle	
Scissor handling and tag length (when applicable)	The student handles scissors using the tripod grip. The student is aware of the optimal ~ 4-8mm tag length and uses the tip of the scissors to cut suture appropriately (perpendicular to the suture).	The student mostly handles the scissors using the tripod grip. Some of the tags are left too long or too short. The student mostly uses the tip of the scissors when cutting	The student sometimes holds the scissors with the tripod grip and sometimes doesn't. The tags are mostly wrong in length, either too short or too long . The student sometimes uses the tip of the scissors and sometimes the middle of the blade to cut tags.	The student handles scissors without using the tripod grip. The student leaves tags that are too long or dangerously short. The student uses the scissors using the middle part of the blade to cut suture
Ligature placement for 3 clamp technique	The student places the circumferential ligature, Miller's or Strangle knot in the place of the proximal clamp. The student places the transfixing ligature between the circumferential and the middle clamp without any guidance	The student places the circumferential ligature, Miller's or Strangle knot in the place of the proximal clamp. The student places the transfixing ligature between the circumferential and the middle clamp with guidance	The student places one of the ligatures in the right position and the other ligature in the wrong position (either the circumferential ligature, Miller's knot or strangle knot or the transfixing ligature)	The student places the ligatures in the wrong places.
Circumferential ligature and transfixing ligature	The student is able to identify and place ligatures in proper location on pedicle without any granny knots or half-hitch knots. The student uses the appropriate number of securing throws tightening in the proper direction with needle holders always inside the "circle of love." The student uses instruments to remove needle from pedicle (not with hand). The student keeps thumb forceps in his/her hand while tightening knots. The knots stay secure. The student is efficient.	The student is able to identify and place ligatures in the proper location on the pedicle while properly tightening most of the knots in the correct direction. The student uses appropriate number of securing throws to tighten in a proper direction with needle holders always inside the "circle of love." The knots stay secure. The student is mostly efficient.	The student is able to identify and place ligatures on the pedicle with guidance from the instructor. The student tightens multiple knots the wrong way. The student doesn't use appropriate number of securing throws. Knots are not secure. Student doesn't keep thumb forceps in hand while tightening knot and /or leaves the needle holders over the table unattached.	The student is unable to identify and place ligatures on the pedicle even with guidance from the instructor. The student tightens majority of throw wrong way. The student doesn't use appropriate number of securing throws. Knots are not secure/tight. Student doesn't keep thumb forceps in hand while tightening knot and /or leaves the needle holders over the table unattached. Inefficient.
Transects pedicle in proper place and checks for bleeding (with	The student can correctly identify the proper place to transect the pedicle and does so in a	The student correctly identifies the proper place to transect the pedicle but doesn't do so in a fully	The student is able to locate area to transect pedicle with help of other students or instructor. The student	The student attempts to, or actually transects the pedicle in the wrong location endangering the life of the patient.

instructor) before releasing	safe controlled manner being careful to only transect pedicle. The student carefully checks the pedicle (with instructor) before releasing it.	safe/controlled manner. The student carefully checks the pedicle with the instructor before releasing it back into the body.	doesn't transect pedicle in a safe/controlled manner. the student doesn't check with instructor before releasing pedicle back into the body.	The student doesn't check with instructor before releasing the pedicle/check the pedicle before releasing it.
Simple continuous pattern	The student starts at the caudal aspect of the incision and correctly buries the first knot without any guidance from instructor (including median raphe). After buried knot is completed student takes first bite of the pattern on their side of the incision to help finish burying the knot. The student then demonstrates a proper simple continuous pattern through the subcutaneous tissue with a superficial bite through the median raphe in a timely fluid manner with properly spaced even bites. The student demonstrates how to correctly bury last knot of the pattern with a dive bite included.	The student starts at the caudal aspect of the incision and correctly buries the first knot with little guidance from the instructor. The student demonstrates mostly acceptable simple continuous pattern throughout the subcutaneous tissue with bites through median raphe included in a mostly timely manner with mostly even bites taken.	The student starts at caudal end of incision once directed. The student struggles burying first knot with the guidance of instructor. The student often forgets to include the median raphe. The simple continuous pattern is uneven and inefficient with uneven bites. The student struggles burying final knot with guidance from instructor.	The student is unaware of where to start closure of subcutaneous layer. The student is unaware of how to bury first knot even with guidance from instructor. The student demonstrates very inefficient pattern with uneven bites often not including median raphe. The student is completely unaware of how to bury last knot at end of the incision.
Intradermal pattern	The student starts the skin closure at the cranial aspect of the incision and correctly buries the first knot without any guidance from the instructor. After knot is made the students completes the "tuck and roll" under the knot to finish burying it. The student takes first bites of the pattern as far cranially in the	The student requires guidance of where to start closure of the incision. The student is able to bury first knot with little guidance and remembers to pass suture under the knot before starting the pattern. The student takes the first bites as far cranially as the incision allows but isn't able to completely "hide" first knot. The student takes mostly even bites on both side	The student needs guidance for all steps of the first buried knot and doesn't remember to "tuck and roll" under knot. The student takes uneven bites throughout the pattern. The student takes improper steps to perform the Aberdeen knot, but can correct him/herself with guidance.	The student is unable to properly bury the the first knot at cranial end of the incision. The student takes uneven bites with separation between bites. The student is unaware and unable to perform Aberdeen knot. Not efficient. Needs to practice.

	incision while working in caudal direction. The student demonstrates a proper intradermal pattern to close the skin in a fluid, efficient manner. The student performs the pattern to the end of the incision and performs an Aberdeen knot correctly. The students performs a "tuck and roll" under the Aberdeen knot and takes bite beyond the incision to correctly bury the knot.	of the incision close to the skin without going through it in an efficient manner. The student takes bites of the intradermal pattern as far caudally as the incision goes and can correctly perform an Aberdeen knot with little to no guidance. The student passes the needle under the Aberdeen knot and takes bite beyond the incision to correctly bury the knot.		
Use of suture material	The student demonstrates the ability to efficiently use suture material for the duration of the procedure without being reminded	The student demonstrates the ability to efficiently use suture material for the duration of the procedure with instructor guidance.	Excessive, unnecessary waste of suture material is sometimes demonstrated by the student.	The student uses excessive, unnecessary waste of suture material throughout procedure.
Knowledge of instruments	The student is able to identify, select and name instruments they would use	The student needs little guidance to identify, select, and name instruments they would use.	The student needs a lot of guidance to identify, select, and name instruments they would use.	The student is unaware of instrument names.
Knowledge of the procedure and preparation for surgery	Structured and logical sequence to the procedure with decisive movements and no hesitation.	Reasonable flow but occasionally indecisive or hesitant.	Stops and starts throughout the procedure.	Poor forward planning. Lacking in fluency. Hesitant. Multiple repeated OR MISSED tasks.
Daily Performance: Professional behavior, Situational Awareness, Safe to perform procedure, Maturity	PASS			FAIL

Appendix 3: Peer evaluation Rubrics

	Able to perform the task with 89.5-100% proficiency/competency	Able to perform the task with 79.5-89% proficiency/competency	Able to perform the task with 69.5-79% proficiency/competency	Unable to perform the task to an acceptable proficiency/competency (<69.5%)
Punctuality	Always on time	Mostly on time	Rarely on time	Never on time
Reliability and accountability	Always reliable and accountable	Mostly reliable and accountable	Sometimes reliable and accountable	Unreliable, avoids responsibility and work
Honesty/integrity/truthfulness	Always honest and trustworthy	Mostly honest and trustworthy	Sometimes honest and trustworthy	Dishonest, untrustworthy
Teamwork and Work load distribution	Works well with others, carries fair weight with medical records. Is of great help and value to the team	Mostly works well with others, carries fair weight with medical records. Mostly works great help and value to the team	Sometimes works well with others, carries fair weight with medical records. Is of some value to the team	Never participates. Never carries fair weight with medical records. Is of no value to the team
Patient care & compassion	Very compassionate. Loves patients	Mostly compassionate	Rarely compassionate	Does not exhibit compassion



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
Introduction to Clinical Rotations (2 credits)
SAMS 528 (TERM 6)
FALL 2020

I. Course Faculty and Staff Information

Dr. Kerri Nigito, DVM

Clinical Instructor

Large Animal Medicine and Surgery Department

Telephone: 444-4175 Ext: 3839

Email: nigker1@sgu.edu

Office Location: LARF (behind the SAC)

Office hours: by appointment on Zoom

Dr. Wayne Sylvester, DVM, MSc

Associate Professor

Medical Director- Small Animal Clinic

Email Address: WSylvester@sgu.edu

Telephone: 444-4175 Ext:3600

Office Location: Small Animal Clinic

Office Hours: By appointment

Dr. Alfred Chikweto, BVM, MSc, PhD

Associate Professor

Pathobiology Department

Email Address: achikweto@sgu.edu

Telephone: 444-4175 Ext: 3345

Office Location: Department of Pathobiology building

Office Hours: By appointment

II. Course location

Private clinical practice arranged through Y4C

Online using Sakai resources such as Panopto, Lessons, and Assignments

III. Prerequisite and/or co-requisite courses

IV. Required resources

Computer with functional camera and microphone

Notes from previous terms.

Necessary resources will be posted on SAKAI by faculty members responsible for each section.

Large Animal Internal Medicine, Bradford P. Smith, 5th edition.

Material covered in previous courses (example: anatomy, physiology, LAMS 501, LAMS 502, LAMS 503, LAMS 516, LAMS 519, SAMS 522, SAMS 515, SAMS 526, SAMS 527, SAMS 514) is considered appropriate material

V. Recommended resources

Textbook of Veterinary Diagnostic Radiology	D. Thrall	6th ed., 2013
Textbook of Veterinary Diagnostic Radiology (E-Book)	D. Thrall	6th ed., 2013
Small Animal Internal Medicine	R. Nelson & C.G. Couto	5th ed., 2014
Small Animal Internal Medicine (E-Book)	R. Nelson & C.G. Couto	5th ed., 2014
Textbook of Veterinary Internal Medicine Expert Consult	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Textbook of Veterinary Internal Medicine (E-Book)	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Fundamentals of Small Animal Surgery	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Fundamentals of Small Animal Surgery (E-Book)	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Small Animal Surgery	T. Welch Fossum	4th ed., 2013
Small Animal Surgery with Expert Consult Access	T. Welch Fossum	4th ed., 2013
Small Animal Surgery (E-Book)	T. Welch Fossum	4th ed., 2013
Veterinary Surgical Preparation and Protocol	C. Pasquini	2011
Veterinary Medicine: A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses	Otto M. Radostits; et.al	10 th ed.
Sheep and Goat Medicine	Pugh and Baird	2 nd ed.
Farm Animal Surgery	Fubini and Ducharme	2004
The Merck Manual	Merck & Co. Inc.	8 th ed.
Veterinary Laboratory Medicine, Interpretations and Diagnosis	Meyer, D. J. and Harvey, J. W	2 nd ed., 1998
Veterinary Laboratory Medicine	Latimer, K. S. et al	4 th ed., 2003

Atlas of Veterinary Hematology	Harvey, J. W.	2001
Necropsy: Procedures and basic diagnostic methods	Strafuss, A. C.	1988
The Necropsy Book	King, J. M.; et. al	2000
Veterinary Parasitology - Reference Manual	Foreyt, W. J.	5 th ed., 2001

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Supplies, attire and etiquette expected, and schedules for each assignment

VIII. Course rationale

This is a 2 credit course involving clinical and practical aspects of Laboratory diagnostics (necropsy, clinical pathology and parasitology), Large animal medicine and surgery, Ambulatory services, Small animal medicine and surgery, Emergency medicine, Shelter medicine and Communication skills. Teaching will be in private clinical practice and small online group format of about 10 students. The course will be offered predominantly in a private practice clinical setting and online zoom and self directed learning sessions on Sakai. This applied course will build on the theories learned in preceeding didactic courses covered in earlier terms. The course also seeks to prepare 6th term students for their year 4 clinical rotations.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to...

1. Perform thorough physical exams on large and small animals in clinical practice.
2. Demonstrate management of a case including history taking, physical examination, diagnostic work-up, problem solving
3. Describe radiographs using standard terminology, propose a radiological diagnosis, and recommend further diagnostic imaging procedures and clinical tests or case management in an online format.
4. Correlate clinical signs with gross findings and generate a morphologic diagnosis from archived necropsy records.
5. Interpret clinical data on Parasitology and Clinical Pathology cases in clinical practice.

X. Lesson-level outcomes

Clinical Practice Experiences (small and large animal skills)	<ol style="list-style-type: none"> 1. Perform a complete physical examinations. 2. Recognize personal limitations in knowledge, ability, and equipment. 3. Develop an appropriate treatment plan with a private practitioner. 4. Demonstrate technical competency including: venipuncture, restraint, and other technical procedures, such as FNA, U/A, cystocentesis, ear/skin cytology. 5. Analyze, describe and/or perform surgery and anesthesia procedures. 6. Conducts him/herself professionally and ethically in communication with faculty. 7. Demonstrate professional demeanor at all times, e.g., work ethic and punctuality. 8. Interpret a number of hematological, biochemical and cytological cases. 9. Make a diagnosis based on history, clinical signs and identification of the parasite(s) using online cases. 10. Recommend treatment and control strategies.
Radiology (online)	<ol style="list-style-type: none"> 11. Demonstrates adequate assessment of radiographic quality (positioning, centering, exposure, artefacts). 12. Appropriately interprets radiographs/sonograms. 13. Demonstrates adequate ability to form an appropriate (list of) differential diagnosis(es). 14. Recommends the appropriate further investigations / diagnostics. 15. Completes an online case presentation; including questions.
Ruminant Preparation Module (online)	<ol style="list-style-type: none"> 16. Identify sites to administer IV and IM injections

	<p>17. Identify FAMACHA scoring and review videos on performing the technique on small ruminants</p> <p>18. Practice medical math calculations to administer an appropriate dose of medication/fluids</p> <p>19. Review clinical skills videos to prepare for clinical practice experience</p>
Equine Preparation Module (online)	<p>20. Perform medical math calculations to administer an appropriate dose of medication/fluids</p> <p>21. Identify sites to administer IV and IM injections</p> <p>22. Review clinical skills videos to prepare for clinical practice experience</p>
Necropsy Rotation (online)	<p>23. Correlate gross necropsy findings to make an appropriate morphologic diagnosis.</p> <p>24. Prepare a written necropsy report.</p>

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

<i>Course Level Outcome</i>	<i>Program Level Outcome</i>
1. Perform thorough physical exams on large and small animals in clinical practice.	1, 2, 3, 4, 6, 7, 8, 10, 18,
2. Demonstrate management of a case including history taking, physical examination, diagnostic work-up, problem solving	1, 2, 3, 4, 5, 6, 7, 10, 12, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
3. Describe radiographs using standard terminology, propose a radiological diagnosis, and recommend further diagnostic imaging procedures and clinical tests or case management in an online format.	11, 20

4. Correlate clinical signs with gross findings and generate a morphologic diagnosis from archived necropsy records.	9, 11, 20
5. Interpret clinical data on Parasitology and Clinical Pathology cases in clinical practice.	11, 17, 18, 28

XII. Course Schedule

Week 1	Zoom Introduction lecture (all students) Wednesday, August 19 th 11:00am-12:00pm AST	1 lecture hour
Week 2	Zoom Introduction lecture (all students) Wednesday, August 26 th 11:00am-12:00pm AST	1 lecture hour
Week 1-3	Equine/ Bovine /Small Animal preparation modules (self-directed learning)	2 lecture hours
Week 3-7	Radiology 2-hour small group Zoom synchronous session Sign up via Google doc for a time/day slot	1 lecture hour
Week 3-7	Necropsy “module” Asynchronous 20-30-minute video review Necropsy report assignment (submit on Sakai)	2 lecture hours Due: October 30th 11:00pm AST
Week 9-13	Radiology Assignment (submit on Sakai)	1 lecture hour Due: November 30th 11:00pm AST
Week 1-14	Small Animal Clinical Experience	15 lecture hours (~ 9-10 days)
Week 1-14	Large Animal Clinical Experience	8 lecture hours (~ 4-5 days)
Total		30 lecture hours

XIII. Grading and assessment policy, and grading rubrics

This course is graded pass/fail.

At the conclusion of the course, if a private practitioner and SVM faculty mentors have concerns about a student's readiness and ability to proceed to 4th year Clinical Training, students will receive a failing grade in the course.

Necropsy and Radiology assignments will be graded using rubrics (please see appendix). Students who receive 70% will pass on the Necropsy assignment, less than 69.5% constitutes a failing grade. Students who receive rubric scores of 3, 4 or 5 will pass the Radiology assignment, (rubric scores of 1 and 2 constitute a failing grade).

Clinical experiences:

Case logs must be completed daily for review by SVM faculty mentors.

Clinical skills checklists must be completed and signed off by private practitioners.

Students must meet with faculty mentors 2 times during the course of clinical rotations on Zoom.

A self-assessment evaluation must be completed.

Students must complete all of the following faculty mentor evaluation criteria in order to pass the course (as seen below).

Faculty Mentor Evaluation	YES (PASS)	NO (FAIL)
Student completed the daily case log		
Student case log clearly conveyed the skills and procedures the student performed/participated/observed during the clinical experiences		
Student completed the clinical skills checklist		
Student completed the self-assessment evaluation		
Student attended and engaged in 2 Zoom sessions with faculty mentors to discuss clinical skills checklist and evaluations		
Student communicated in a timely and professional manner with the faculty mentor at all times		

**Grading Rubric for
A Necropsy report
[10 possible points]**

Content	6 points
<p>1. All relevant information for the case is included:</p> <ul style="list-style-type: none"> • Signalment • Brief clinical history • Gross necropsy findings • Morphologic diagnosis/diagnoses • Relevant comments (e.g cause of death, differential diagnosis etc) 	
Organization	2 points
Gross findings are described and arranged in a clear and logical manner.	
Grammar/ spelling	1 point
The writing is free or almost free of errors. Sentences are complete. Present tense is preferred for a necropsy report.	
Tone	1 point
The tone is consistently professional and appropriate for a necropsy report	

XIV. Recommended study strategies

The students should review the relevant subject matter pertaining to the large and small clinical practice. The student should refer to previous course notes and manuals and should refresh clinical skills as necessary to be able to successfully complete the rotation.

XV. Instructor's expectations of the student

The student is expected to have prepared for their clinical practices by reading the syllabus, resources and completing the preparation modules provided as well as actively participating at private practices. You are expected to initiate communication with your faculty mentors during your clinical experiences to schedule Zoom meetings and be accountable for your own self-directed learning.

XVI. Professionalism statement

- a. Students are expected to carry themselves in a professional manner in accordance with the AVMA professionalism competency. Professionalism is graded in every rotation. Unprofessional behavior, attitude, attire or ethics will not be tolerated. Students will be publicly representing themselves, St. George's University and their profession; conducting themselves in an exemplary manner is expected. You are training to be veterinarians; a very high standard of professional conduct is expected of you.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Students must attend 3 weeks of clinical experiences, one of the synchronous Radiology Rotations sessions, and complete the necropsy assignment as well as the radiology assignment. Students must also complete their case log, meet with their private practitioner and submit all pertinent documents to the SVM faculty mentor in a timely manner.

Lecture or Zoom session attendance policy: Radiology lectures is mandatory (one per student). We recommend that students attend all other lectures and modules but these are not mandatory and will be recorded.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

Not Applicable

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

Radiology Assignment Rubric

	Meets expectations consistently (4)	Meets expectations most of the time(3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Demonstrates adequate assessment of radiographic technique and quality (positioning, centering, collimation, exposure, labelling, artefacts)	Consistently demonstrated accurate identification of most major and minor technical problems which may affect the radiological interpretation	Generally demonstrated accurate identification of some major and minor technical problems which may affect the radiological interpretation	Occasionally demonstrated accurate identification of major and minor technical problems which may affect the radiological interpretation	The student did not demonstrate accurate identification of major and minor technical problems which may affect the radiological interpretation
Appropriately uses radiological terminology and descriptors	Consistently demonstrated accurate use of radiological terminology and descriptors throughout the radiological presentation	Generally demonstrated accurate use of radiological terminology and descriptors most of the time throughout the radiological presentation	Occasionally demonstrated accurate use of radiological terminology and descriptors throughout the radiological presentation	The student was inaccurate in the use of radiological terminology and descriptors throughout the radiological presentation
Appropriately interprets radiographs or sonograms	Consistently demonstrated appropriate interpretative skills throughout the radiological presentation	Generally interpreted the radiological findings during the radiological presentation	Occasionally demonstrated accurate interpretative skills during the radiological presentation	The student failed to demonstrate basic interpretative skills in the radiological presentation
Demonstrates the ability to form an appropriate and prioritized list of differential diagnoses	Demonstrated a good ability to form an appropriate list of differential diagnoses	Demonstrated a reasonable ability to form an appropriate list of differential diagnoses	Demonstrated an occasional ability to form an appropriate list of differential diagnoses	Demonstrated an inability to correctly form an appropriate list of differential diagnosis
Recommends the appropriate further investigations/diagnostics	Recommended all appropriate and logical further investigations/diagnostics	Recommended most of the appropriate and logical further investigations/diagnostics	Recommended limited appropriate further investigations/diagnostics	Recommended inappropriate further investigations/diagnostics
Writes a detailed radiological report using correct layout and structures and correct descriptors and terminology	Wrote an appropriate radiological report using the correct layout and structure according to the template provided	The radiological report generally was laid out correctly using the structure in the template provided	The radiological report occasionally was laid out correctly using the structure in the template provided	The radiological report was inappropriately laid out with poor structure when compared with the template provided.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
SMALL ANIMAL MEDICINE AND SURGERY DEPARTMENT
CLINICAL REASONING IN VETERINARY MEDICINE (2 credits)
SAMS 530 TERM 6
FALL 2020

I. Course Faculty Information

Course Director:

Adria Rodriguez, DVM, MSc, CVA, CVCH, MS TCVM
Associate Professor, Small Animal Medicine and Surgery and Professional
Development
Wellbeing, Diversity and Inclusion Officer, SVM
Email: AIRodriguez@sgu.edu
Office Hours: By appointment

Collaborating Faculty: See schedule

II. Course location: ONLINE Live Zoom Seminars/Panopto
ONLINE Sakai *Weekly Requirements*

III. Prerequisite and/or co-requisite courses:
Current Term 6 Student

IV. Required resources:
Software requirements: Sakai, Zoom, Panopto, Turning Point Mobile, Google Drive,
Google Slides

V. Recommended resources: N/A

VI. Special accommodation
A. Students with disabilities who need accommodations should contact Student
Accessibility and Accommodations Services (SAAS), located in the Dean of
Students Office.
B. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Equipment: Desktop or laptop computer, and/or tablet or other smart mobile device;
functional camera, speakers and microphone
Reliable internet connection

VIII. Course rationale

This selective course for term six students will allow students to recall information learned in previous courses and will provide students with additional opportunities to successfully utilize the clinical reasoning approach will be explained and demonstrated by discussing selected clinical cases in different fields and specialties in veterinary medicine. A clinical case will be presented each week through lecture, skit or interactive session to facilitate group discussion. Each lecture will focus on a different area to assist students in collecting relevant clinical data, developing a problem list in order of significance, creating a differential list and diagnostic plan using an evidence based approach, and aiming to reach a diagnosis by the end of the lecture. The students will then work independently to create a treatment plan/ discharge summary and/ or a referral letter and/ or a case report for case presentation rounds. The main goal is to increase the students proficiency in utilizing the critical reasoning approach to analyze clinical cases information and demonstrate their understanding of the case by producing and/ or presenting a specified component of the patient medical record, while promoting the effective use of professional communication and interaction.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

Successfully utilize the clinical reasoning approach when tackling veterinary clinical cases by way off 1) generating a problem list based on history and physical exam findings, 2) generating a differential diagnosis list, 3) practicing and enhancing clinical decision making process/skills, 4) demonstrating accurate, practical, and efficient case management, and 5) communicating professionally with clients, colleagues, and while presenting and/or referring cases or providing feedback to peers and clients.

X. Lesson-level outcomes

1. Use clinical reasoning through discussions of small/ large animal veterinary clinical cases in different fields and specialties to extrapolate relevant clinical data
2. Create a problem list by applying the clinical reasoning approach
3. Utilize clinical reasoning to generate differential diagnosis lists
4. Select and interpret appropriate diagnostic tests derived through utilizing the clinical reasoning approach
5. Appropriately and accurately analyze clinical data, design an appropriate treatment plan, and determined the prognosis for different disease processes
6. Recognize emergency presentations, and apply clinical reasoning skills to manage these cases
7. Promote decision making skills
8. Communicate professionally when presenting or referring a case to other clinicians/specialist, and communicating with peers and clients

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	Program Level Outcome
See Appendix TBA	

XII. Course Schedule

See Appendix: SAMS 530 Lecture and Assignment Schedule

XIII. Grading and assessment policy, and grading rubrics

- A. The course will be graded according to the SVM grading scale published in your gradebook. Grade will be determined by:
- i. Successful completion of assignments and peer assessments (see below)
 - ii. Mandatory engagement in the course content which includes:
 1. Attendance of all synchronous Zoom sessions
 2. Completion of post discussion tasks.
 3. Completion of weekly requirements checklists.

Unexcused absences are not allowed. Any absences or technical difficulties must be immediately addressed by emailing the course director (Dr. Adria Rodriguez at airodriguez@sgu.edu). Failure to attend mandatory lectures and/or engage in course content without following the appropriate reporting/excused absence protocols

outlined in Section XIII may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

B. Course Assignments: Listed below are descriptions of the assignments to be encountered in the course. COMPLETE post-discussion assignment and the peer assessment rubric when applicable.

- a. See course schedule for brief description of post discussion assignment. More detailed information regarding assignments and peer assessment will be provided soon.

XIV. Recommended study strategies

Course content will be released week by week. Students must visit the weekly requirements tab in Sakai to ensure they complete all the necessary requirements and use the checklist to aid in staying on track. Once all live seminars are viewed and the different activities and assignments are completed, the student will have successfully attained the intended knowledge and will have achieved the course learning outcome.

XV. Instructor's expectations of the student

- A. The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment submission.
- B. The student is expected to communicate with the Course director professionally and in a timely manner in the event of technical difficulties, inability to attend lectures or hand in assignments on time for any reason.
- C. Do not check off boxes on the weekly requirement checklists if you have not completed a task.

XVI. Professionalism statement

Always exhibit professional and respectful behavior towards colleagues, faculty and staff. Please be on time and engaged in course content as directed. Student's will be required to turn on their cameras during live sessions. Please be mindful of this regarding attire and surroundings. If you are asked to turn on your camera and you are not able to, please email your lecturer in advance prior to the live session.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic

activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Zoom Synchronous Lecture Attendance policy: Attendance is mandatory. If a student has received an excused absence or there are external circumstances which are communicated to the course director in a timely manner, students will be required to view the video of the lecture within a week of the session.

Every requirement in the Weekly Requirements and checkbox of the week's checklist for the week **MUST** be completed by Sunday 11:55pm AST of that week. **Do not check off boxes if you have not completed a task.**

XVIII. Policy regarding failure of submission of assignments

Students who fail to submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the assignment.

Students who have technical issues during assignment submission **MUST** inform the Course Director (Dr. Adria Rodriguez airodriguez@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving the highest score recorded at the time, but NOT being eligible for a remediation.

Scheduling of remediations is at the discretion of the School.

Failure to submit any assignment or late submission of an assignment may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

XX. Copyright policy:

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

SAMS 530 Seminar and Post Discussion Task Schedule (All times in AST)

Fall 2020 SAMS 530 CRVM Schedule

Week	Dates	Lectures/Content	Assigned Task for Peer Review	Faculty	Modality Zoom 10 Lectures (1 hour)
1	17- 21 Aug	No Content	-	-	-
2	24 - 28 Aug	No Content	-	-	-
3	31 Aug - 4 Sept	The Clinical Reasoning Process and its Importance in Vet Med	-	Dr. Adria Rodriguez	Tuesday Sept 1 12-1pm AST
4	7 - 11 Sept	Giving Productive Feedback/Peer Evaluation Process	-	Dr. Adria Rodriguez/ Dr. Nicki Wise	Tuesday Sept 8 12-1pm AST
5	14 - 18 Sept	Small Animal Internal Medicine Case	Discharge Instructions	Dr. Talia Guttin	Tuesday Sept 15 12-1 pm AST
6	21 - 25 Sept	Large Animal (Equine) Theriogenology Case	Post-Treatment Complications and their Management	Dr. Firdous Khan	Tuesday Sept 22 12-1 pm AST
7	28 Sept - Oct 2	Large Animal (Equine) Anesthesia Critical Care Case	Anesthetic Plan	Dr. Flavia Restitutti	Tuesday Sept 29 12-1 pm AST
8	5- 9 Oct	Small Animal Dentistry Case	Discharge Instructions	Dr. Francesca Ivaldi	Tuesday Oct 6 12-1 pm AST
9	12 - 16 Oct	Small Animal Neurology Case	Discharge instructions	Dr. Jill Narak	Tuesday Oct 13 12-1 pm AST
10	19 - 23 Oct	Large Animal (Alpaca) Internal Medicine Case	Treatment Plan	Dr. Stacey Byers	Tuesday Oct 20 12-1 pm AST
11	26 - 30 Oct	Small Animal Oncology Case	Communication to the owner re: treatment options	Dr. Annie Corrigan	Tuesday Oct 27 12-1 pm AST
12	2 - 6 Nov	Large Animal (Goat) Internal Medicine Case (Cardiology/Radiology)	Discharge Instructions and Owner Communication (Prognosis)	Dr. Kerri Nigito	Tuesday Nov 3 12-1 pm AST
Course Finished on Week 12					



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY
ADVANCED CARDIOLOGY SELECTIVE (1 credits)
SAMS 531 TERM 6
FALL 2020

I. Course Faculty and Staff Information

Course Director: Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor.
Email: acorrigan@sgu.edu
Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3441
Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

Class Office Hours via Zoom: Every Tuesday 11:00am-1:00pm (GMT-4). One-on-one office hours available upon request.

II. Course location

This course will be run completely online, using Sakai tools Zoom, Panopto, Assignments, and Forums with SYNCHRONOUS Zoom sessions each week, however they will be recorded. You will either participate in Zoom or in Forums depending on your week schedule, both will be graded.

III. Prerequisite and/or co-requisite courses

Successful completion of the first 5 terms of the DVM curriculum at SGU SVM are required.

IV. Required resources

Students will need a functional laptop and reliable internet connection.
Panopto lecture slides and/or lecture notes will be provided as pdf files, and will not be made available in hard copy. The slides will be accessible for digital notes. For certain lessons, scientific articles, videos, or other references will be assigned and will be provided via Sakai.
All lectures will be recorded and distributed via Panopto or Zoom.
The main references for this course are:
Textbook of Veterinary Internal Medicine, Editor Ettinger, Publisher Saunders, 8th edition.
Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.
JAVMA ECG's of the Month
ACVIM Cardiology Abstracts

V. Recommended resources

Videos and articles will be posted on Sakai.

VI.Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII.Other requirements

None.

VIII.Course rationale

To address special problems in Cardiology including: a review, critical evaluation and comparison of current literature and research topics. To practice advanced auscultation. To practice and evaluate electrocardiograms. To practice and evaluate echocardiograms. To review current interventional cardiac therapy, both surgical, medical and pharmaceutical management. To practice and become adept at CPR and the mean electrical axis. To practice case management and to present a full case in a professional format. To practice client communication.

IX.Course-level outcomes

Upon successful completion of this course the student should be able to

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for cardiology patients including emergency and critical care considerations.
2. Use relevant clinical data to create differential diagnosis list for cardiac conditions.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases, including a consideration of antimicrobial resistance.
5. Recognize emergency presentations and considerations for cardiology patients.
6. Formulate appropriate client communications regarding history, diagnostics, treatment and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in workspace, and select patients for isolation.
8. Discuss CPR on a model and discuss important patient considerations for appropriate CPR and crash carts.
9. Calculate the MEA.
10. Watch and discuss a cursory cardiac evaluation with the SAC ultrasound machine, be able to discuss the different views and measurements.
11. Practice auscultation skills.

X.Lesson-level outcomes

See Appendices XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes
See Appendices XXI

XII. Course Schedule

See Appendices XXI

XIII. Grading and assessment policy, and grading rubrics

Grading scale complies with SGU and SVM assessment guidelines:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Total grade in the course will be based on total points:

- Presentations: 30 Points
- Discussion Questions: 10 points
- Crash Cart Assignment: 10 points
- Zoom/Forum discussions: 40 points
- Self Reflection: 10 points
- NOTE the engagement rubric and the presentation rubrics in appendices

Instructions for Assignments:

ECG's of the Month

- Individual powerpoint presentations
 - 1 slide of signalment and history
 - 1-2 slides of ECG
 - 1 slide of diagnosis
 - 1-2 or 3 slides with bullet points of explanation
 - 1 slide of your discussion of new information,
 - What I had to look up!!
 - **5 minutes!!!!**
- **ACVIM Abstracts**
 - Pick 1 abstract, sign up day 1
 - Present the abstract
 - **5 minutes !!!**
 - 1-2 slides major concepts
 - 1-2 slides about new information
 - 1-2 slides about words/drugs/concepts That you had to look up!!!
 - 1 slide of how this could/will increase our knowledge/why is this important
- **Writing Assignment**
 - Written paragraph (~250 words) submitted electronically

- New concepts you encountered/ new ideas that were interesting to you
- New topics that you will continue to pursue in the literature
- Any topic that was discussed in an abstract that you think should be included in the SAMS 524 course.
- Can add in a course critique to help me make the course better
- **Discussions**
 - You MUST read your assigned article AHEAD of time
 - I will post them electronically on SAKAI
 - You will be called on to discuss a portion of the paper with the class
 - You will have to show your knowledge base and discuss:
 - Introduction
 - Materials and methods
 - Discussion
 - Problems you had with the paper
 - Content/ Experimental Conclusions
 - Application to clinical practice
 - Things that you had to look up to understand

XIV. Recommended study strategies

This is a completely online course was devised with your flexibility in mind. **Assignment and due dates are fixed, but if you fall ill, or have an excused absence such as a clinical rotation, you will have until the last day of the term to complete assignments.** Please submit excuses via the Dean of Students (Dr. Bhaiyat) and he will notify the course director. The material in this course will be integrating much of what you have learned in other courses, so get out your old course material and refer back to it for best learning.

- Read the assigned readings and come prepared to discuss them, participate in class discussions, review the Ettinger cardiac sound recordings. Please discuss any concerns with Dr. Corrigan.
- Office hours attendance and participation are recommended many points are based on discussion.

XV. Instructor's expectations of the student

Students are expected to adhere strictly to the honor code. Assignments and quizzes will have feedback provided and expect students to keep this feedback and answers to the questions to themselves. **If you share feedback or answers on Sakai Assignments or Quizzes, this is considered cheating and a violation of the honor code.**

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that it sees fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVII.Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Attendance, engagement, and participation WILL be recorded at every academic activity, Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy. If you cannot participate synchronously during the Zoom sessions you must participate in the forums discussion to get credit for discussion and engagement.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Participation and engagement will be graded with the Engagement Rubric (see Appendix XXI).

XVIII.Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination. Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX.ExamSoft policy

No exams will be given via ExamSoft in this course.

XX.Copyriht policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI.Appendices: LO Mapping, Course Schedule, Student Engagement and Presentation Rubric

CLOS Upon successful completion of this course the student should be able to

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for cardiology patients including emergency and critical care considerations.
2. Use relevant clinical data to create differential diagnosis list for cardiac conditions.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases, including a consideration of antimicrobial resistance.
5. Recognize emergency presentations and considerations for cardiology patients.
6. Formulate appropriate client communications regarding history, diagnostics, treatment and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in workspace, and select patients for isolation.
8. Discuss CPR on a model and discuss important patient considerations for appropriate CPR and crash carts.
9. Calculate the MEA.
10. Watch and discuss a cursory cardiac evaluation with the SAC ultrasound machine, be able to discuss the different views and measurements.
11. Practice auscultation skills.

SAMS 531 LLO's	CLO
1.Recognize and utilize appropriate terminology, for both veterinary professionals and clients	1 2 3 4 5 6 7, 8
2. Evaluate a current ACVIM Cardiology research abstract and construct a professional presentation	1, 2, 3, 5, 6
3. Evaluate a current ECG case report and construct a professional presentation	1 2 3 5 6
4.Discuss CPR, crash carts and appropriate teamwork	6, 8
5. Interpret and discuss advanced ecg's, and be able to calculate the MEA	1, 2, 3, 4, 5, 6

6. Understand EBVM: Appraise and discuss current research articles on interventional cardiology, the history of veterinary cardiology, cardiac drugs and appropriate use, echocardiography, and crash cart development	1, 5, 6
7. Discuss echocardiography skills	8
8. Understand and use appropriate scientific terms, abbreviations, and echocardiography views	5 6 7 8
9. Practice auscultation skills	6 8, 11
10. Discuss signalment, clinical signs, relevant history, auscultation findings and diagnostic testing to diagnose a variety of cardiac diseases	1, 2, 3, 4, 6 8, 11
11. Create a personal statement reflecting on the topics discussed	1, 2

Engagement Rubric:

Criteria	Excellent (A)	Good (B)	Fair (C)	Poor (F)
Panopto/Zoom Lectures Checklist	Listens to all Panopto lectures in a timely manner by the deadline.	Listens to most (90%) Panopto lectures in a timely manner by the deadline.	Listens to some (70-89%) Panopto lectures in a timely manner by the deadline.	Listens to less than 70% Panopto lectures in a timely manner by the deadline.
Forums Posts	Completes all the forums discussions tasks and follows all directions.	Completes most (90%) of the forums discussions tasks and follows all or most directions.	Completes some (70-89%) of the forums discussions tasks and follows most to some directions.	Completes less than 70% of the organ forums discussions tasks and follows all or most directions.
Assignments	Completes all the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes most (90%) of the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes some (70-89%) of the Sakai Assignments for the term in a timely manner, and/or shows partial integration of thought of course material.	Completes less than 70% of the Sakai Assignments for the term in a timely manner, or shows little integration of thought of course material.

Presentation Rubric:

Category	Exemplary (A)	Proficient (B)	Developing Skills (C)	Insufficient (F)
Completed assignment in time. (20%)	Assignment submitted on time.	Assignment submitted <48 hours past deadline with no documented excuse.	Assignment submitted 48 hours to 1 week late with no documented excuse.	Assignment submitted >1 week late with no documented excuse.
Followed assignment instructions. (20%)	Assignment instructions were followed thoroughly.	Most of the assignment instructions were followed thoroughly.	Some of the assignment instructions were followed thoroughly.	Less than acceptable following of assignment instructions occurred.
Integration of knowledge into answers. (20%)	Answers showed superb integration of knowledge.	Answers showed proficient integration of knowledge.	Answers showed average integration of knowledge.	Answers showed poor integration of knowledge.
Organization and clarity of formatting. (20%)	Presentation was clearly organized, easy to read, with clear formatting and font/writing.	Presentation was mostly organized, mostly easy to read, with mostly clear formatting and font/writing.	Presentation was somewhat organized, but some issues made reading unclear, or unclear formatting, font, or writing.	Presentation was not organized, were difficult to read, due to font, writing, or formatting.
Correct Terminology and "What I had to look up" complete (20%)	Correct Terminology and "What I had to look up" 80% complete	Correct Terminology and "What I had to look up" 70% complete	Correct Terminology and "What I had to look up" 60% complete	Correct Terminology and "What I had to look up" incomplete
FINAL SCORE:				

Class Schedule:

Week	Day/Dates	LECTURE TOPIC	Assessment
Week 8 1st week	Oct 5-11	<p>Readings: Buchannan “History of Veterinary Cardiology” Gordon and Nelson et al</p> <p>To do:</p> <ul style="list-style-type: none"> • Post your FAVORITE BIT from the History of Veterinary Cardiology and post in Forums (5 points) AND • Comment on another students post • Post “What I had to look up” from Gordon and Nelson et al (5 points) • Read and post on a classmates/Ask a question on their “What I had to look up” (5 points) • Pick your abstracts on Sakai (you will present this on Week 10) <p>Zoom: Oct 6th 11-11**</p> <ul style="list-style-type: none"> • Lecture: Course introduction and design and ECG Review (bring ECG homework from SAMS 524) • We will ASSIGN your ECG’s of the Week during this! (you will present this on week 11) <p>Discussion: Zoom Participation to discuss readings OR Forum Posts</p>	<p>Forums posts:</p> <p>5 points</p> <p>5 points</p> <p>5 points</p> <p>5 points</p>
Week 9 2nd week	Oct 12-18	<p>Readings:</p> <ul style="list-style-type: none"> • PERUSE Kittlesons’ ECG Chapter (lightly read this...I want you to realize how much you DO recognize! 20 min MAX) • Listen to Ettingers Cardiac Sounds <p>To Do: Participate in Zoom Discussion/Forums Post - if you cannot make the zoom it will be recorded for you and you can participate in the forums discussion.</p> <p>Lecture and Laboratory: MEA and Advanced ECG’s</p> <p>Zoom: Oct 13th 11-11**</p> <p>Discussion:</p> <ul style="list-style-type: none"> • Advanced ECG lab participation • Forum post on murmurs 	<ul style="list-style-type: none"> • Murmur Forum: Research a murmur and create a forums post about the possible ruleouts. <p>5 Points</p> <ul style="list-style-type: none"> • ASK a question

			<p>on another students post:</p> <p>5 points</p> <ul style="list-style-type: none"> • Arrhythmia Forum: My favorite arrhythmia and WHY? <p>5 points</p>
Week 10 3rd week	Oct 19-25	<p>Readings: ACVIM Canine and Feline Consensus statements</p> <p>To Do: prepare your abstract presentation, post on Forums, LIVE ZOOM presentation,</p> <p>Presentations: Abstracts (grading rubric)</p> <p>Discussion: you MUST ask a question of each presentation. This is to promote discussion and understanding</p> <p>Zoom: Oct 20th 10-12???:11-1***: Abstract Presentations and article discussions</p>	<p>Abstract Presentation: 15 points</p> <p>Discussion Question: 5 points</p> <p>Forums post: ACVIM Consensus statements what I had to look up/interesting points</p> <p>5 points</p>
Week 11 4th week	Oct 26- Nov 1	<p>Readings: Boswood et al 2016 EPIC study</p> <p>To Do: prepare your ECG presentation, post on forums and LIVE ZOOM presentation</p> <p>Presentations: ECG of the Month ALL must ask a question of the presenter!!!!</p> <p>Zoom: Oct 27th 11-1***: ECG Presentations and article discussions</p>	<p>ECG presentation: 15 points</p> <p>Forums post/ Discussion Question: 5 points</p>
Week 12 5th week	Nov 2-8	<p>Readings:</p> <ul style="list-style-type: none"> • Echo Chapter on VIN** PERUSE(20 min max!) • Crash cart article <p>To Do: write your personal reflection assessment, complete the crash cart homework assignment</p> <p>Discussion: crash cart article, Echo chapter, Heart Sounds</p> <p>Zoom: Nov 3rd 11-1***: Lecture: Echo Teaching Video and last meeting to catch up and talk about clinical year</p>	<p>Crash Cart homework: 10 points **if you are in the ECC selective this is the SAME and you can use the same document!</p> <p>Personal Reflection: 10 points</p>



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
SAMS

Special topics in small animal orthopedic surgery
SAMS 534 Term 6
Spring 2019

I. Course Faculty and Staff Information

Tomas Guerrero PD Dr. med vet Dipl ECVS, Professor

Email: tguerrero@sgu.edu

Office location: Cassia Building ground floor. Office hours can be made by appointment.

II. Course location

Online location—Sakai resources being used (ie. Panopto, Lessons, Assignments, etc.) and any other.

III. Prerequisite and/or co-requisite courses

Current 6th term SVM student

IV. Required resources

Your small animal surgery notes and handouts from 5th term.

Any small animal surgery text, e.g. Fossum or Tobias & Johnston

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

VI. Special accommodation

a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.

b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

VIII. Course rationale

This course provides an in depth sight on common ortopedic problems that students will face on a daily basis during the fourth year small animal surgery rotations. It consists of 15 hours of lectures of relevant topics in small animal surgery. These lectures will be presented in an interactive format to stimulate the students' active and enthusiastic participation. Principles of diagnosis, treatment, and outcome of orthopedic problems in small animals will be taught and discussed. Clinical cases will be presented and analyzed. The course present common complaints, history, clinical signs, PE findings and specific diagnostic testing with the goal of students being able to learn about problem lists, make differential diagnoses, and introduce veterinary methods for case work up.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to recognize the most common orthopedic problems in small animal surgery and the state of the art procedures and implants needed to treat those disorders.. Students will be able to analyze and work out orthopedic clinical cases.

X. Lesson-level outcomes

See bellow

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
1. Demonstrate in-depth knowledge of common orthopedic problems in small animals	PLO1 ,PLO2, PLO3, PLO4, PLO6, PLO7, PLO8, PLO11 PLO12, PLO13, PLO17, PLO19 PLO20, PLO27, PLO28
2. Plan treatment options for patients affected with fractures and common orthopedic problems	PLO3, PLO4, PLO6, PLO12, PLO13, PLO17, PLO19, PLO20, PLO21, PLO23, PLO24, PLO26, PLO27

XII. Course Schedule

Lecture N°/ Date/ Time	Topic	Goals	Learning objectives	Course online Format
1 Date 17-21 August	Bone structure, blood supply and fracture healing under stable and unstable conditions	Review of bone anatomy. Introduce the concepts of relative and absolute stability, and how changes in movement affects bone healing.	Recognize the effect of different fixation techniques in fracture healing.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
2 Date/ 17-21 August	Postoperative fracture assessment	Introduce students to a systematic approach to evaluate fracture healing (AAAA)	Be able to systematically evaluate bone healing in serial radiographic examinations	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
3-5 Date	Case discussions	Computer-based discussion of clinical fracture-patients	Be able to discuss patient-fracture score, choose the best treatment option, and	ALL Lectures via Panopto

24-28 August		using the AAAA system	evaluate healing in radiographs	Cases to discuss will be provided as PDF. Students are expected to work the cases out during the week and submit them for assessment. Feedback will be provided via email/Zoom
6 & 7 Date 31 August -4 sept.	Evolution of internal fixation in small animals. Locking plate systems.	Review of the history and evolution of the internal fixation of fractures in small animals.	Know and understand the changes regarding fracture treatment occurring in the last decade, moving from rigid fixation and absolute stability towards a more elastic and biological fixation.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
8 & 9 Date 7-11 Sept	Cranial cruciate ligament disease in the dog Stifle biomechanics. Biomechanics of TTA and TPLO techniques	Introduce to the pathophysiology and the most common techniques to treat this disease.	Understand the biomechanical basis of dynamic methods, and be able to explain the differences between commonly used procedures.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
10 Date 14- 18 Sept	TTA/ TPLO planning	Demonstrate how the techniques are planned in radiographs.	Be able to do the preoperative measurements for a TTA and for a TPLO	ALL Lectures via Panopto

				ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
11-12 Date 21-25 Sept	Total Hip Replacement in small animals	Introduce to different systems, principles, surgical technique and outcome.	Understand the principles behind total hip replacement in the dog; know the most commonly used systems, its inherent complications and what can be expected from this surgery.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
13 Date 28 Sept- 2 Oct	Limb alignment	Introduce to principles of corrective osteotomies and limb alignment procedures.	Be able to diagnose a misaligned limb, to know the specific terminology, and to plan the needed required osteotomies.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on MyCourses/ Resources
14 Date 19-23 Oct	Joint luxations	Introduce to elbow and shoulder luxations.	Be able to diagnose these problems and to offer a rationale option of treatment.	ALL Lectures via Panopto ALL Lecture PowerPoint pdfs to go with lectures supplied on

				MyCourses/ Resources
15	Final exam			
26-30 Oct	15 questions. Short assays, and MCQ Open book To be submitted by Oct 30			

XIII. Grading and assessment policy, and grading rubrics

Grading scale There will be 1 final examination worth a **total of 100% of the class grade**. The exam material will come from lectures and in class discussions. Students will be graded on a A to F Scale based on a final exam. All questions will be multiple choice or true-false, and of equal value. There will be approximately 30 questions.

Pictures, radiographs and /or drawings may be included in the exam. Excuses to attend special meetings will be considered upon the student's performance. SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desk top. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an ESSAY or Short-Answer Format and will take place using ExamSoft.

- Grading Scale

>89.5%	A
84.5- 89.4	B+
79.5- 84.4	B
74.5- 79.4	C+
69.5- 74.4	C
64.5- 69.4	D+
59.5- 64.4	D

<59.4	F
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- All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

Active preparation for classes and participation in classes is expected.

XV. Instructor's expectations of the student

The student is expected to read the handouts and related uploaded materials before classes.

XVI. Professionalism statement

XVII. Attendance policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext.

4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A ExamSoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The ExamSoft student perspective video 30mins](#)
 - c. [The ExamSoft/ExamID FAQ](#)
 - d. ExamSoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited

Appendices (if applicable): Course Schedule

CLOs

LLOs

PLO to CLO mapping Rubrics

Please be aware that this syllabus is just a simple guide. Some lectures may take more and others less than stated pending on the students' interest, participation and involvement for debate. Also is highly recommended to read from your required text books section.



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

***ADVANCED TOPICS IN SMALL ANIMAL DERMATOLOGY* (1 credit)**

SAMS535 TERM 6

FALL 2020

I. Course Faculty and Staff Information

Course Director: Tara Paterson, DVM, MSc., Associate Prof
Email: tpaterson@sgu.edu

Visiting Professor: Andrea Lam, DVM, DACVD
Email: alamdaevd@gmail.com

Office Hours: by appointment only

II. Course location

Sakai: All course material will be available on the SAMS535 course Sakai site. Sakai Lessons will be used for weekly organization of tasks with direct links to resources and tasks as needed.

III. Prerequisite and/or co-requisite courses

SAMS515 (Vet. Physical Diagnosis I)
LAMS503 (Introduction to Clinical Medicine)
SAMS522 (Small Animal Medicine I)

IV. Required resources

All required materials will be provided in electronic form on the course Sakai site

V. Recommended resources

Kirk & Muller's Small Animal Dermatology (7th ed). Miller, Griffin & Campbell (2013).

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

No special materials are needed for the course apart from access to an electronic device that will enable access to view lectures, participate in live Zoom sessions, and has word processing & presentation (Powerpoint) software.

VIII. Course rationale

Since one half of the cases presenting to the Small Animal general practitioner are related to dermatologic disease, it is vitally important that the new graduate be well-trained in the diagnosis and management of common dermatologic disease. The goal of this course is to further enhance the student's confidence and understanding of dermatology and their diagnostic approach to dermatologic disease.

This selective course is designed to enhance the student's knowledge of Small Animal Dermatology and will build upon the foundations of veterinary dermatology laid in Term 2 (SAMS515), Term 4 (LAMS503) and Term 5 (SAMS522). The course will focus on the diagnosis and management of small animal dermatologic diseases. In this remote version of the course, clinical experience will be replaced by virtual cases that will provide students an opportunity to work-up a case from start to finish. The course will be delivered through a collaborative effort between SVM faculty and a visiting veterinary dermatologist. Use of peer-reviewed literature will be encouraged to enable students to familiarize themselves with the current literature in veterinary dermatology.

IX. Course-level outcomes

See Appendix 1.

X. Lesson-level outcomes

See Appendix 2.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix 3.

XII. Course Schedule

See Appendix 4.

XIII. Grading and assessment policy, and grading rubrics

Grading scale:

The current SGU SVM grading scale applies to this course.

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Course assessment:

Student assessment will be based on two quizzes, one group assignment & one group presentation based on a virtual case, and one homework assignment.

Quiz #1	25%
Quiz #2	25%
Clinical case – work-up	10%
Clinical case – presentation	15%
Clinical case - assignment	15%
Homework	10%

Course quizzes:

All materials covered in the course are examinable material.

Group virtual case assignment:

Students will work in small groups (of 3 or 4) on a virtual case. Each group will be assigned a virtual case for which they will be responsible for conducting a virtual work-up, preparing a written case report and delivering a short Powerpoint presentation. More detailed instructions will be provided to the students on Sakai.

Homework:

There will be one homework assignment to assist in preparation for the Cytology lab. This homework assignment will be posted on Sakai and must be completed prior to the scheduled lab.

XIV. Recommended study strategies

Although this e-course will not be given in the usual condensed format, time management and keeping with the weekly schedule will enable the student to perform optimally on all course assessments and assignments. While no formal office hours will be scheduled, both the course director and visiting professor will be available for consultation by appointment only. All topics discussed in lecture and lab are examinable material. Students should refer to the Lesson/Laboratory Level Outcomes (Appendix 3) to guide their quiz preparations.

XV. Instructor's expectations of the student

The student is expected to make an effort to attend any real-time lectures, labs and case presentations wherever possible as the live interactive nature of these sessions are designed to enhance the student learning experience. It is expected that assessments and assignments will be completed within the given time frame and students will reach out to the course director in the event that a deadline is not realistic. Upon completion of this course, it would be appreciated if the student would take the time to complete the course & instructor evaluations – this is of particular importance this term as this is the first e-offering of the course. Your thoughts, comments and constructive criticisms are extremely important and valuable to us as we continue to develop and improve this course.

XVI. Professionalism statement

Professional behavior in the virtual classroom is expected at all times. The use of cellphones, social media or other entertainment media are not permitted during real-time lectures/labs. Further, the student is expected to approach all assessments and assignments in a professional and honest manner.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason [see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS] will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (Dr. Tara Paterson, tpaterson@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

APPENDICES

Appendix 1. CLOs

Upon successful completion of this e-course, the student is expected to be able to:

CLO1: With regards to common small animal dermatoses (discussed within the course), the student is expected to be able to recognize symptoms, discuss disease pathogenesis and list the therapeutic options.

CLO2: Obtain a thorough dermatologic history from a client and interpret the significance of physical and dermatologic exam abnormalities in a dog or cat.

CLO3: Generate an appropriate list of differential diagnoses based on a patient's history, physical & dermatological examination, select the most appropriate dermatologic diagnostic test(s) and interpret the results.

CLO4: Identify key diagnostic features on cytologic evaluation for select dermatologic conditions.

CLO5: Based on a virtual clinical case, the student is expected to prepare a detailed case report and brief oral presentation using at least one peer-reviewed publication and one veterinary textbook to research their topic.

Appendix 2. LLOs

Lecture/Surgical Skills Learning Outcomes	Course Learning Outcome Number(s)
LECTURE: Pemphigus foliaceus [Lam]	
Explain the pathogenesis of pemphigus foliaceus (PF)	1
List the key clinical features of PF	1
Describe the diagnostic steps required to make an accurate diagnosis	3
Cite the key diagnostic features of a cytologic sample	4
Discuss general treatment options	1
LECTURE: Canine pyoderma [Lam]	
List differential diagnoses for diseases causing folliculitis	3
Discuss the predisposing factors leading to the development of canine pyoderma	1
Describe the clinical signs associated with pyoderma	1
Differentiate between superficial and deep pyoderma based on clinical signs and cytologic characteristics	1, 4
Select appropriate diagnostic tests for suspected cases of pyoderma	3
Develop an appropriate treatment plan for the treatment of pyoderma	1
Explain the importance of practicing sound stewardship of antibiotic use	1
LECTURE: Canine atopic dermatitis [Lam]	

Discuss the intrinsic and extrinsic components that lead to the pathogenesis of atopic dermatitis	1
List the clinical signs associated with canine atopic dermatitis and how this differs from other pruritic skin diseases of the dog, particularly other hypersensitivity reactions	1
Describe the process of reaching a definitive diagnosis of canine atopic dermatitis	3
Develop individualized management plans which include both systemic and topical treatment options based on clinical presentation; cite the pros and cons of different treatment options and how to optimize their use	1
LECTURE: Clinical approach to otitis [Lam]	
Discuss the primary, predisposing, and perpetuating factors involved in the pathogenesis of otitis	1
Discuss the strategic use of diagnostic tests during different stages of disease management	3
Discuss treatment options and length of therapy	1
LECTURE: Skin nodules [Lam]	
List the differential diagnoses for all categories of nodular skin disease	3
Discuss the approach to diagnosing skin nodules including when to apply certain diagnostic tests	3
LECTURE: Non-endocrine alopecia [Lam]	
Discuss the stages of hair cycling	1
Discuss causes of alopecia unrelated to endocrinopathies	1
Explain how to make a diagnosis of non-endocrine alopecia	3

Cite the supportive management therapies for non-endocrine alopecia	1
LECTURE: Feline dermatoses [Lam]	
Discuss specific dermatologic diseases unique to cats	1
Recognize clinical patterns of feline dermatoses	1
Describe the appropriate diagnostic steps to manage feline-specific skin diseases	3
LAB: Virtual clinical case	
Obtain a thorough dermatologic history from a client/simulated client.	2
Describe how to conduct a dermatological exam and interpret the significant of physical and dermatologic exam abnormalities in a dog or cat.	2
Develop a list of differential diagnoses based on history and clinical presentation.	2
Based on the differential diagnoses, select appropriate dermatological diagnostics and accurately interpret their results.	3, 4
Based on your diagnosis/presumptive diagnosis, formulate an appropriate therapeutic plan.	1
Write discharge instructions based on the clinical case.	5
LAB: Cytology lab	
Identify key cytological diagnostic features of common dermatologic diseases of small animals.	4

Appendix 3. PLO to CLO mapping

Course level outcome	SGUSVM program level outcome
CLO1: With regards to common small animal dermatoses (discussed within the course), the student is expected to be able to recognize symptoms, discuss disease pathogenesis and list the therapeutic options.	SGU PLOs: 2, 3, 4, 5, 6
CLO2: Obtain a thorough dermatologic history from a client and interpret the significance of physical and dermatologic exam abnormalities in a dog or cat.	SGU PLOs: 2, 3, 12, 20, 24, 27
CLO3: Generate an appropriate list of differential diagnoses based on a patient's history, physical & dermatological examination, select the most appropriate dermatologic diagnostic test(s) and interpret the results.	SGU PLOs: 3, 6, 20, 24
CLO4: The student is expected to be able to identify key diagnostic features on cytologic evaluation for select dermatologic conditions.	SGU PLOs: 3, 6, 20, 24
CLO5: Based on a virtual clinical case, the student is expected to prepare a detailed case report and brief oral presentation using at least one peer-reviewed publication and one veterinary textbook to research their topic.	SGU PLOs: 1, 2, 3, 4, 5, 6, 11, 12, 14, 20, 21, 24, 27

Appendix 4. Course schedule

Week #	Date	Lecture	Lab	Assignment
1	Aug 17-23	Canine pyoderma [WED AUG 19 @ 2:30p]		
2	Aug 24-30	Pemphigus foliaceus [WED AUG 26 @ 3p]	Cytology [FRI AUG 28, 1-3p]	Cytology ¹ [Due: THURS AUG 27]
3	Aug 31 – Sept 6	Canine atopic dermatitis		
4	Sept 7-13	Clinical approach to otitis		Quiz #1
5	Sept 14-20	Skin nodules OR Non-endocrine alopecia		
6	Sept 21-27	Feline dermatoses Clinical cases		Quiz #2
7	Sept 28 – Oct 4	Group clinical case presentations ³ [MON SEPT 28, noon-2p]		Group clinical case assignment

¹ Assignments due by 11:59pm on Thursday Aug 27

² Quizzes must be completed by Sunday Sept 13 & Sunday Sept 27 @ 11:59pm

³ Date/time of group presentation to be confirmed.

Appendix 5. Rubrics

Work in progress...



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

EMERGENCY AND CRITICAL CARE SELECTIVE SYLLABUS (1 credit)

SAMS 536 TERM 6

FALL 2020

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor

Email: tguttin@sgu.edu

Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3440

Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

Office Hours via Zoom by appointment.

II. Course location

This course will be run completely online, **asynchronously**, using Sakai tools Panopto, Assignments, and Quizzes.

III. Prerequisite and/or co-requisite courses

Successful completion of the first 5 terms of the DVM curriculum at SGU SVM are required.

IV. Required resources

Students will need a functional laptop and reliable internet connection.

Panopto lecture slides will be provided as pdf files, and will not be made available in hard copy. The slides will be accessible for digital notes. For certain lessons, scientific articles, videos, or other references will be assigned and will be provided via Sakai.

The main references for this course are:

Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.

Fletcher, et al. RECOVER CPR Guidelines. Journal of Emergency and Critical Care, 22(S1); 2012: S102-131.

V. Recommended resources

Videos and articles will be posted on Sakai.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

None.

VIII. Course rationale

This is a one credit course aimed at providing students with an introduction to topics pertinent to the specialty of Emergency and Critical Care. The course offers laboratory hands-on training in a simulation environment and with live animals on relevant topics. The course will cover both small and large animal species.

IX. Course-level outcomes

Upon successful completion of this course, students will be able to:

1. Utilize evidence-based resources to guide emergency room decisions, diagnostics, and treatments.
2. Use relevant clinical data to guide emergency assessment, treatment decisions, and discuss prognosis for selected emergency conditions.
3. Explain the indications for and steps to perform common diagnostic and therapeutic emergency procedures and techniques.
4. Discuss moral and ethical conundrums associated with emergency and critical care medicine.

X. Lesson-level outcomes

See Appendices XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendices XXI

XII. Course Schedule

See Appendices XXI

XIII. Grading and assessment policy, and grading rubrics

Grading scale complies with SGU and SVM assessment guidelines:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Total grade in the course will be based on:

Engagement rubric 20% (please see Engagement Rubric, Appendix XXIII)

Forum discussion on ethics in critical care x1 10%

Assignments x4 40%

Quizzes x3 30%

XIV. Recommended study strategies

This is a completely asynchronous course devised with your flexibility in mind, but be careful to not fall behind. Make a schedule for yourself at the beginning of the term, and stick to it. Make sure that you do not get to the end of the term and realize you have a lot of work to make up. The material in this course will be integrating much of what you have learned in other courses, so get out your old course material and refer back to it for best learning.

XV. Instructor’s expectations of the student

Students are expected to create and stick to a schedule on their own, and complete all sections of the course. This course is really driven by interest and motivation to learn as much as you can about emergency and critical care. You will get out of it what you put into it.

XVI. Professionalism statement

Students attending St. George’s University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George’s University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

The Code of Conduct includes student comportment and the honor code, as well as those actions that warrant disciplinary action. The University reserves the right to take any action that is sees fit to protect the rights of the student body, as well as the reputation of the University.

Abuses of this Code, outline in the student manual, will result in disciplinary action, which may include suspension or dismissal. It is the responsibility of all students to know the University Code of Conduct. It is required that all students abide by the terms of the University Code of Conduct.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

Participation and engagement will be graded with the Engagement Rubric (see Appendix XXI).

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (COURSE DIRECTOR email HERE) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

No exams will be given via ExamSoft in this course.

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George’s University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

XXI. Appendices:

Course-level Outcomes

Upon successful completion of this course, students will be able to:

1. Utilize evidence-based resources to guide emergency room decisions, diagnostics, and treatments.
2. Use relevant clinical data to guide emergency assessment, treatment decisions, and discuss prognosis for selected emergency conditions.
3. Explain the indications for and steps to perform common diagnostic and therapeutic emergency procedures and techniques.
4. Discuss moral and ethical conundrums associated with emergency and critical care medicine.

Mapping CLOs to Program Level Outcomes:

Course Level Outcomes	SGU-SVM Program Level Outcomes
Course Level Outcome 1	6, 11, 15, 16, 20, 26, 28
Course Level Outcome 2	1, 2, 3, 4, 5, 6, 7, 10, 20, 21, 22, 23, 24, 25, 26, 27
Course Level Outcome 3	4, 5, 6, 10, 15, 16, 21, 26
Course Level Outcome 4	6, 7, 8, 12, 13, 14, 15, 16, 17, 19, 27

Mapping of LLOs to CLOs:

Lecture/lab	Lecture/lab Learning Outcome	Course learning outcome
Cardiac vs. Respiratory Case	1. Apply previous knowledge from core SVM coursework in cardiac and respiratory medicine to emergency scenarios	2 3
	2. Use evidence-based veterinary medicine resources to create a diagnostic and treatment plan for a respiratory distress case.	1 2
Focused Ultrasound Section	1. Define a focused ultrasound exam and describe its utility in the ER setting	1 2
	2. Describe and practice the AFAST3, TFAST3, and VetBlue exam landmarks	1 3
	3. Apply the AFS scoring system to a patient and understand the utility of serial AFS scores	1 2 3
	4. Compare and contrast the utility and limitations of each type of exam	1 3
	5. Reinforce basic knowledge of ultrasound with regard to fluid, tissue, and air echogenicity and artifact	3
Hemodialysis Section	1. Identify the indications for dialysis	1 2
	2. Discuss dialysis complications and prognosis	2
	3. Describe the function of dialysis and the different methods of performing dialysis	2
Central Venous Catheter Section	1. Practice a situation where a medical procedure must be learned from a textbook, article, and/or video resources	1 3
	2. Identify the indications and complications of central venous catheters in small animal patients	2 3
	3. Understand the Seldinger technique and the application of this technique in multiple settings	1 3
Discussions on Euthanasia, Critical Care	1. Identify the moral and ethical conundrums of emergency and critical care medicine	1 4
	2. Discuss these moral and ethical issues with classmates, exhibiting professionalism and communication skills	4
	3. Reflect on the discussions	4
CPR section	1. Review RECOVER guidelines	1
	2. Utilize evidence-based resources to design a crash cart	1 3
	3. Practice using the RECOVER guidelines for medical math	1 3
Endocrine ER case	1. Identify a patient with an endocrine emergency based on signalment, relevant history, and PE findings	2
	2. Triage and assess affected organ systems for each endocrine emergency, including prioritizing emergency treatment	1 2
	3. Discuss the prognosis with the owners	2
Septic Patient Section	1. Identify a patient with sepsis based on signalment, relevant history, and PE findings	2
	2. Discuss emergency diagnosis, treatment, and monitoring of septic patients.	1 2

	3. Discuss the prognosis of sepsis with the owners	1 2
Neurologic emergencies	1. Utilize evidence-based articles to answer questions about neurologic emergencies	1 2
Advanced Fluid Therapy	1. Identify patients that may have special fluid therapy considerations (ie. hypoalbuminemia, vasculitis, AKI)	1 2 3
	2. Discuss the fluid therapy treatment plans for these patients.	
	3. List methods of monitoring fluid therapy.	
	4. Utilize evidence-based articles to learn and practice how to calculate constant rate infusions	

Student Engagement Rubric

Criteria	Excellent (A)	Good (B)	Fair (C)	Poor (F)
Assignments (40%)	Completes all the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes most (90%) of the Sakai Assignments for the term in a timely manner and shows integration of thought of course material.	Completes some (70-89%) of the Sakai Assignments for the term in a timely manner, and/or shows partial integration of thought of course material.	Completes less than 70% of the Sakai Assignments for the term in a timely manner, or shows little integration of thought of course material.
Forums Posts (20%)	Completes all the Sakai Forums posts for the term in a timely manner.	Completes most (90%) of the Sakai Assignments for the term in a timely manner.	Completes some (70-89%) of the Sakai Assignments for the term in a timely manner.	Completes less than 70% of the Sakai Assignments for the term in a timely manner.
Sakai Quizzes (30%)	Completes all the Sakai Quizzes for the term in a timely manner.	Completes most (90%) of the Sakai Quizzes for the term in a timely manner.	Completes some (70-89%) of the Sakai Quizzes for the term in a timely manner.	Completes less than 70% of the Sakai Quizzes for the term in a timely manner.
Professionalism (10%)	Completes the online learning course with professionalism—timeliness, organization, communication.			Does not complete the online learning course with professionalism—timeliness, organization, communication.

Course Schedule SAMS 536 ECC Selective Spring 2020: This is a **RECOMMENDED schedule, starting on week 4 of the term to allow for clinical rotations in weeks 1-4. However, this course is asynchronous to allow for flexibility with your clinical rotation schedule. You can work ahead of time if your rotations fall during the term. If a due date for an assignment falls during a clinical rotation week, that assignment will be due on the final due date for all assignments/quizzes, posted at the bottom of the schedule.**

Recommended weekly schedule	Topic	To Do For That Topic	Lecture hour equivs.
Week 5 Sept 14-20	Intro to the course, Point-of-care ultrasound in the ER	Panopto lecture: Point-of-care ultrasound in the ER. YouTube videos embedded in lecture. Sakai Quiz #1	2
Week 6 Sept 21-27	Hemodialysis lecture + quiz	Panopto lecture: Hemodialysis. Sakai Quiz #2	2
Week 7 Sept 28-4	Respiratory distress case	Sakai Assignments: Respiratory Case Assignment Article: https://todaysveterinarypractice.com/approach-to-respiratory-distress-in-dogs-and-cats/ Sakai Assignments #1: use the article to make an ER treatment plan and diagnostic plan to differentiate respiratory from cardiac causes of respiratory distress.	1
Week 8 Oct 5-11	Crash Cart Homework	Sakai Assignments #2: Crash Cart Homework with article + assignment	1
Due dates for Sakai quiz 1 & 2, and Sakai assignments 1 & 2 is Saturday October 10th			
Week 9 Oct 12-18	Neurologic emergencies	Sakai Assignments #3: Neurologic Emergencies paper + assignment	1
Week 10 Oct 19-25	Central Venous Catheters	Sakai Resources: Central Venous Catheter folder: Video & paper. Sakai quiz #3.	1
Week 11 Oct 26-Nov 1	Endocrine emergencies	Panopto lecture: Endocrine Emergencies. Sakai Resources: Endocrine ER VCNA paper. Sakai Assignments #4 (pick this OR septic cat treatment sheet)- submit treatment sheet.	1 (or 2)
Week 12 Nov 2-8	Septic Cat	Panopto lecture: Septic Cat Sakai Assignments #4 (pick this OR endocrine ER treatment sheet)- submit treatment sheet.	1 (or 2)
Due dates for Sakai quiz 3, and Sakai assignment 3 & 4, is Saturday November 7th			
Week 13 Nov 9-15	Advanced fluid therapy: Fluid conundrums and CRI calculations.	Panopto Lecture: AKI and Fluid Conundrums. CRI article and practice problems on your own: https://www.atdove.org/article/medical-math-constant-rate-infusion CRI article below and practice problems on your own:	2

		https://www.theveterinarynurse.com/review/article/how-to-calculate-and-manage-constant-rate-infusions If videos work better for you: https://www.atdove.org/video/titratable-cri-math A video of how a CRI is mixed up, FYI: https://www.atdove.org/video/constant-rate-infusion-cri-preparation	
Week 14 & 15 Nov 16-22 Nov 23-29	Critical Care Ethics Discussion	Mini-Panopto lecture: Critical Care Ethics. Sakai Resources: Read 1 of the 2 papers posted. Answer 3 questions on Sakai Forums by Nov 21 (or earlier). Read and reply to 2 classmates' posts by Nov 28 .	2
Week 16 Nov 30-Dec 6	Catch up week	SUBMIT ALL ASSIGNMENTS BY: December 5th	
Total	10 topics	5 Panopto lectures. Assignments 4 (+1 on your own CRI calcs). Quizzes 3. 1 Forums discussion.	15



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

SMALL ANIMAL CLINICAL NUTRITION (1 credit)

SAMS537 TERM 6

FALL 2020

I. Course Faculty and Staff Information

Course Director: Tara Paterson, DVM, MSc., Associate Prof
Email: tpaterson@sgu.edu

Visiting Professor: Cecilia Villaverde, BVSc, PhD, DACVN, DECVCN
Email: cvillaverde@expertpetnutrition.com

Office Hours: by appointment only

This course is provided via the Mark Morris Institute (MMI), a non-profit organization with a focus on veterinary nutrition education (www.markmorrisinstitute.org).

II. Course location

Sakai: All course material will be available on the SAMS537 course Sakai site. Sakai Lessons will be used for weekly organization of tasks with direct links to resources and tasks as needed.

III. Prerequisite and/or co-requisite courses

ANPH502 (Nutrition)
SAMS522 (Small Animal Medicine I)

IV. Required resources

All required materials will be provided in electronic form on the course Sakai site

V. Recommended resources

- Small Animal Clinical Nutrition, 5th Edition by Hand, Thatcher, Remillard, Roudebush & Novotny, published 2010 (available online at www.markmorrisinstitute.org)
- Small Animal Clinical Nutrition Quick Consult by Hand, Zicker, Novotny, published 2011.

- Applied Veterinary Clinical Nutrition by Fascetti AJ and Delaney SJ, published 2012. Wiley-Blackwell. (New edition coming soon).
- Nutritional Management of Hospitalized Small Animals, 1st edition by Daniel L. Chan, published 2015. Wiley Blackwell.

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

No special materials are needed for the course apart from access to an electronic device that will enable access to view lectures, participate in live Zoom sessions (where possible), and has word processing software.

VIII. Course rationale

The objective of this course is to provide students with advanced training in small animal clinical nutrition through the use of lectures, clinical cases and practical exercises that will help to prepare the student for veterinary practice. The goal of the course is to train students to critically evaluate every patient based on nutritional needs so that they may incorporate nutritional management into their daily practice upon graduation. Students will also learn how to use nutrition resources as well as the importance of incorporating evidenced-based science into their veterinary practice.

IX. Course-level outcomes

See Appendix 1.

X. Lesson-level outcomes

See Appendix 2.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix 3.

XII. Course Schedule

See Appendix 4.

XIII. Grading and assessment policy, and grading rubrics

Grading scale: The current SGU SVM grading scale applies to this course.

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

Course assessment:

Topic quizzes (3% per quiz)	27%
Topic assignments (8% each)	16%
Nutrition case assignment	22%
Final exam	35%

Topic quizzes: Students will be asked to complete one post-topic quiz consisting of 3-4 MCQs per lecture topic. There will be a total of 9 quizzes. These will be posted on Sakai on Mondays in Quizzes & Tests on Sakai and must be completed by Sunday of that week.

Topic assignments: Students will be asked to complete two nutritional recommendation assignments based on clinical cases provided. This assignment is designed to provide the student with *real-world experience* that will include selection of the most appropriate diet for the patient and performing pet food math to accurately calculate the daily energy requirements and amount of food to be fed. The assignments will be posted on Sakai on Mondays in Assignments and must be completed by Sunday of that week.

One assignment will be based on the topic, Obesity, and will incorporate body condition scoring which is typically taught as a lab in this course. Students will be asked to perform a body condition assessment on their own pet (where possible). If the student deems their pet to be over-conditioned, they will have the opportunity to use their own pet to complete the assignment rather than use the case provided. For those students without access to a pet OR in those instances where a weight loss plan is not indicated for their perfect pet, a clinical case will be provided for the topic assignment.

Nutrition case assignment: Each student will complete a nutritional recommendation based on the template used throughout the course. Students will

select a specific condition/disease where nutrition plays a role in its management *that was not covered in the course*. The assignment will consist of:

- Discussion of the role of nutrition in the selected disease
- Development of a fictitious case with an appropriate patient signalment, history and diagnostic work-up
- Preparation of a nutritional recommendation including selection of an appropriate therapeutic diet, calculation of DER and daily feeding recommendation (and any other nutritional recommendations that may be relevant).

XIV. Recommended study strategies

Although this e-course will not be given in the usual condensed format, time management and keeping up with the weekly schedule will enable the student to perform optimally on all course assessments and assignments. While no formal office hours will be scheduled, the visiting professor will be available for consultation by appointment only. All topics discussed are examinable material. Students should refer to the Lesson Level Outcomes (Appendix 3) to guide their quiz and final examination preparations.

XV. Instructor's expectations of the student

The student is expected to make an effort to attend any real-time lectures wherever possible as the live interactive nature of these sessions are designed to enhance the student learning experience. It is expected that assessments and assignments will be completed within the given time frame and students will reach out to the Course Director and the Dean of Students if a deadline cannot be met. Upon completion of this course, it would be appreciated if the student would take the time to complete the course & instructor evaluations. Your thoughts, comments and constructive criticisms are extremely important and valuable to us as we continue to develop and improve this course. In addition, the Mark Morris Institute (MMI) typically administers a pre- and post-course survey. Students are expected to comply with MMI's request to complete these surveys.

Most importantly, we ask students to take care of their mental & physical health during these trying times.

XVI. Professionalism statement

Professional behavior in the virtual classroom is expected at all times. The use of cellphones, social media or other entertainment media are not permitted during real-time lectures/labs. Further, the student is expected to approach all assessments and assignments in a professional and honest manner.

XVII. Attendance/Participation Policy

Students are expected to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Although attendance, engagement, and participation may not be recorded at every academic

activity, attendance, engagement, and participation may be graded randomly. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

Students who fail to attend an examination or submit an assignment by the deadline without a valid reason [see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS] will receive a score of "0" points for the examination.

Students who have technical issues during the examination MUST inform the Course Director (Dr. Tara Paterson, tpaterson@sgu.edu) and IT (tellexaminationservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of "0" points for the examination.

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University's Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Examplify on their laptop prior to exam day. Once Examplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).

5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Examplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Slides/materials are also property of Dr. Cecilia Villaverde but also in some cases MMI. Students should not duplicate these materials unless permission is granted by Dr. Villaverde and/or MMI. Any other reproduction in whole or in part is prohibited.

APPENDICES

Appendix 1. Course Learning Outcomes

Upon successful completion of this e-course, the student is expected to be able to:

Course level outcome (CLO)
CLO1: Explain the overall importance of nutrition to animal health and its role in the management of a variety of diseases and physical conditions affecting canines and felines.
CLO2: Pet food math - Accurately perform calculations for nutrient conversion and be able to determine a dog/cat's daily energy requirements (DER) and the necessary adjustments required to achieve a therapeutic goal.
CLO3: Describe the nutritional goals of management of specific canine and feline diseases (including key nutritional factors) and develop an appropriate nutritional management plan.
CLO4: Describe the pathophysiology of certain small animal diseases which have recognized nutritional linkages.
CLO5: Discuss the importance of routine evaluation of body condition and perform describe how to perform a body condition assessment on a dog and cat. [Amended for 2020 COVID distance learning]
CLO6: Review basic pet food nutrition and explain how over-the-counter, therapeutic, homecooked and raw food diets differ

Appendix 2. Lesson Learning Outcomes

Lecture Learning Outcome (LLO)	Course Learning Outcome (CLO)
Introduction to Clinical Nutrition	
Estimate energy requirements for dogs and cats of various life stages and lifestyles and calculate a dose of a given food	2
Discuss the limitations of the Guaranteed Analysis including potential issues with the way that nutrients are measured	6
Convert nutrient concentrations in foods to a calorie basis and compare between different products	2
Explain what makes a veterinary therapeutic diet different from an over-the-counter diet in terms of both regulatory and practical aspects	6
Alternative Diets	
Discuss the pros and cons of homecooked diets	6
Perform a basic evaluation of a homecooked pet food recipe	6
Discuss pros and cons of raw diets	6
Myths & Client Communication	
Discuss with clients why therapeutic diets are necessary in specific cases	1, 6
Describe where to obtain reliable and science-based nutrition information regarding diet and nutrition	1, 6
Critical Care Nutrition	
Identify cases where nutritional support is appropriate	1, 3
List pros and cons of various forms of assisted feeding including common types of feeding tubes	3
Select a diet and calculate feeding amounts for a specific patient	2
GI Disease	
Describe the nutritional approach to pets with chronic GI disease	1, 3, 4
Explain the purpose of and outline the steps of a diet elimination trial for adverse food reaction	3
Obesity Management & Prevention	

Select an appropriate diet for weight loss for a specific pet	1, 3, 4
Design a weight loss plan taking into account owner factors and pet factors and including diet, calorie goals, goal weight loss rate, treats, and follow-up	2, 3
Body condition scoring	
Describe how to assign body condition scores and muscle condition scores	5
Estimate ideal body weight based on body condition scoring and morphometric measurements	5
Urolithiasis	
Outline the critical nutrients and strategies for calcium oxalate, struvite, and urate stones	1, 3, 4
Select an appropriate diet for a patient with a history of uroliths	3
Diabetes mellitus	
Explain general nutritional strategies for management of diabetes	1, 3, 4
Contrast the nutritional management of diabetes in cats vs dogs	4

Appendix 3. Alignment of Program Learning Outcomes to Course Learning Outcomes

Course level outcome (CLO)	SVM Competency
CLO1: Explain the overall importance of nutrition to animal health and its role in the management of a variety of diseases and physical conditions affecting canines and felines.	10
CLO2: Pet food math - Accurately perform calculations for nutrient conversion and be able to determine a dog/cat's daily energy requirements (DER) and the necessary adjustments required to achieve a therapeutic goal.	10
CLO3: Describe the nutritional goals of management of specific canine and feline diseases (including key nutritional factors) and develop an appropriate nutritional management plan.	5, 10, 21, 24, 26
CLO4: Describe the pathophysiology of certain small animal diseases which have recognized nutritional linkages.	1, 3
CLO5: Discuss the importance of routine evaluation of body condition and perform describe how to perform a body condition assessment on a dog and cat. [Amended for 2020 COVID distance learning]	10
CLO6: Review basic pet food nutrition and explain how over-the-counter, therapeutic, homecooked and raw food diets differ	10

Appendix 4. Course schedule

SAMS537 SMALL ANIMAL CLINICAL NUTRITION

COURSE SCHEDULE FALL 2020

SGU Week #	Date*	Topic	Assignment
8	Oct 6 th (2 hours)	Introduction & Pet food math Alternative diets	
9	Oct 13 th (2 hours)	Nutritional myths Critical care	
10	Oct 20 th	Obesity & body condition scoring	Obesity assignment (Due: Sunday Oct 25 th)
11	Oct 27 th	Urolithiasis: Intro & struvite uroliths	
12	Nov 3 rd	Urolithiasis: Other urolith types	
13	Nov 10 th	Diabetes mellitus	DM assignment (Due: Sunday Nov 15 th)
14	Nov 17 th	Intestinal disease	Final course assignment (Due: Sunday Nov 22 nd)
15	Nov 24th	FINAL EXAM	

* All lectures will be live streamed on Zoom at 1pm AST. Recordings will be posted on Sakai for viewing at a later date/time



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
SMALL ANIMAL MEDICINE AND SURGERY
SHELTER MEDICINE SELECTIVE (1 Credit)
SAMS 539 (TERM 6)
FALL 2020

I. Course Faculty and Staff Information

Course Directors:

Ms. Elizabeth Peach	and	Dr. Marta Lanza-Perea
LVT/CVT, Demonstrator IV		DVM, MsC, Associate Professor
epeach@sgu.edu		mperea@sgu.edu
Office: Ray and Sis Hall, Ground Floor, VSL		Office: Cassia building, 2 nd Floor

Office Hours/Communication:

- Course Directors are available via email, response time within 24-48 hours
- Zoom Open Office Hours every Monday from 1 PM-2 PM EST or by Appointment
- General course communication will occur within Sakai Email or Sakai Announcements
- Weekly emails will be sent to the students to describe in detail the lecture/lab and assignments/assessments due for the week

Visiting Professors in their Respective Fields of Shelter Medicine:

- Dr. Jennifer Bolser, DVM
- Dr. Joellen Bruinooge, DVM.
- Dr. Melissa Bain, DVM, DACVB, MS, DACAW
- Ms. Consie von Gontard
- Dr. Katherine Polak, DVM, MPH, MS, DACVPM
- Dr. Elise Gingrich, DVM, MPH, MS

II. Course location

- Online Location
- Lectures/Labs will be available in Sakai via Panopto or Zoom, both live (synchronous) and recorded sessions (asynchronous)
- Sakai Resources being utilized include but not limited to Announcements, Calendar, Resources, Assignments, Forums, Tests and Quizzes

III. Prerequisite and/or co-requisite courses

Current 6th Term SGU SVM Student

IV. Required resources

- The Association of Shelter Veterinarians (ASV) Guidelines for Standards of Care in Animal Shelters, 2010.
- ASPCA Shelter Care Checklists: Putting ASV Guidelines into Action, 2014.
- The Association of Shelter Veterinarians (ASV) Veterinary Medical Care Guidelines for Spay-Neuter Programs, 2016.
- Computer/laptop with reliable broadband connection to the internet and functional speakers, microphone, and camera.
- Students will be provided with a list of “Required Readings” for each lecture/lab in Sakai.

V. Recommended resources

- Access to a shelter or rescue organization for observation and opportunities for practical application of lesson learning outcomes is highly encouraged but not required.
- Students will be provided with a list of “Additional Resources/References Recommended” for each lecture/lab in Sakai.

Textbooks

- *Shelter Medicine for Veterinarians and Staff, Second Edition*, Lila Miller and Stephen Zawistowski (Editors), Wiley-Blackwell Publishing, 2013.
- *Field Manual for Small Animal Medicine*, Katherine Polak and Ann Therese Kommedal (Editors), Wiley-Blackwell Publishing, 2018.
- *Infectious Disease Management in Animal Shelters*, Kate Hurley and Lila Miller (Editors), Wiley-Blackwell Publishing, 2009.
- *Veterinary Forensics: Animal Cruelty Investigations, Second Edition*, Melinda D. Merck (Editor), Wiley-Blackwell Publishing, 2013.
- *Low Stress Handling, Restraint, and Behavior Modification of Dogs and Cats: Techniques for Developing Patients Who Love Their Visits*, Sophia Yin, Cattle Dog Publishing, 2009. (+Videos)
- *Handbook of the Behavior Problems of the Dog and Cat, Second Edition*, G. Landsberg, W. Hunthausen, L. Ackerman, Elsevier/Saunders Publishing, 2003.
- *Animal Behavior for Shelter Veterinarians and Staff*, Emily Weiss, Heather Mohan-Gibbons, Stephen Zawistowski (Editors), Wiley-Blackwell Publishing, 2015.
- *Veterinary Disaster Response*, Wayne E. Wingfield and Sally B. Palmers (Editors), Wiley-Blackwell Publishing, 2009.
- *Animals in Disaster*, Green, Dick, Elsevier Publishing, 2019.

Journals

- *Clinician’s Brief* <https://www.cliniciansbrief.com/>
- *dvm360 Magazine* <https://www.dvm360.com/>
- *Animal Shelter Magazine* <https://www.animalsheltering.org/>

Websites

- <https://www.sheltervet.org/> (Association of Shelter Veterinarians)
 - <https://abvp.com/> (American Board of Veterinary Practitioners)
 - www.sheltermedicine.vetmed.ufl.edu/ (Maddie's Shelter Medicine Program-College of Veterinary Medicine University of Florida)
 - www.sheltermedicine.com (Koret Shelter Medicine Program-UC Davis College of Veterinary Medicine)
 - <https://www.vet.cornell.edu/hospitals/maddies-shelter-medicine-program> (Maddie's Shelter Medicine Program-Cornell University School of Veterinary Medicine)
 - <https://www.uwsheltermedicine.com/> (University of Wisconsin-Madison Shelter Medicine Program)
 - www.avma.org (American Veterinary Medical Association)
 - www.hsvma.org (Humane Society Veterinary Medical Association)
 - <https://www.ruralareavet.org/> (HSVMA/Fund for Animals Rural Area Veterinary Services)
 - <https://www.humanesociety.org/> (Humane Society of the United States)
 - <http://www.humanesociety.org/about/departments/pets-for-life/> (HSUS Pets for Life)
 - <https://www.aaha.org/> (American Animal Hospital Association)
 - <https://catvets.com/> (American Association of Feline Practitioners)
 - www.wsava.org (The World Small Animal Veterinary Association)
 - <https://theaawa.org/> (The Association for Animal Welfare Advancement))
 - <https://www.aspcapro.org/> (ASPCA Pro)
 - <https://www.aspcapro.org/humane-alliance> (ASPCA Spay/Neuter Alliance)
 - www.acc-d.org (Alliance for Contraception in Cats and Dogs)
 - <https://bestfriends.org/> (Best Friends Animal Society)
 - www.americanhumane.org (American Humane)
 - www.maddiesfund.org (Maddie's Fund)
 - <https://shelteranimalscount.org/> (Shelter Animals Count National Database)
 - <https://lowstresshandling.com/> (Sophia Yin/ Low Stress Handling University)
 - <https://fearfreeshelters.com/> (Fear Free Shelter Program)
 - <https://fearfreepets.com/> (Fear Free Clinics and Veterinary Team Training)
 - <https://training.fema.gov/> (FEMA Disaster Response Training)
 - <https://www.ready.gov/> (Disaster Preparedness)
 - <https://www.alleycat.org/> (Alley Cat Allies)
 - <https://www.millioncatchallenge.org/> (Million Cat Challenge)
- **Additional Resources will be provided specific to each module by faculty and visiting professors.**

VI. Special accommodation

- a. Students with disabilities who need accommodations should contact Student Accessibility and Accommodations Services (SAAS), located in the Dean of Students Office.
- b. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

Models and videos will be utilized for the lecture/lab on High-Quality High-Volume (HQHV) Spay and Neuter Surgical Techniques and Medical Protocols.

VIII. Course rationale

This course will introduce students to the concept of Shelter Medicine and increase their knowledge of this emerging field, including such topics as herd health management, shelter population statistics, disaster preparedness, public health, disease prevention and zoonosis, population control, animal welfare, veterinary forensics, behavior assessment and modification, euthanasia protocols, and compassion fatigue. The field of shelter medicine is recognized by the AVMA as a specialty and valued for the benefits it can provide to animals, people, and the surrounding communities. The course will empower students with tools, resources, and skills to best practice shelter medicine in a variety of clinical settings upon graduation, following the Association of Shelter Veterinarians (ASV) guidelines. The course will also present new career opportunities, both in the US and internationally, in the field of shelter medicine, such as non-profit community outreach program management, behavior consultation, animal welfare, ethics, and advocacy, and veterinary forensics.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:

1. Discuss current topics and emerging trends in the field of shelter medicine.
2. Utilize resources to provide appropriate and humane care for shelter animals and communities.
3. Identify the variety of career paths associated with shelter medicine.

X. Lesson-level outcomes

Lecture/Lab	Lesson Learning Outcomes
1. Shelter Animal Physical Health and Management	<ol style="list-style-type: none">1. Define the term shelter.2. List the Five Freedoms and explain their significance to shelter medicine.3. Identify the functions of a modern shelter.4. Compare and contrast the different types of shelter models.5. Define the term capacity for care.6. Utilize guidelines to calculate capacity for care for a specific shelter model example.7. Explain the principles of herd health management and the importance of physical and behavioral well-being in the shelter environment.8. Explain the value of vaccinations in a shelter and design an appropriate vaccine protocol for animals in a shelter environment.

	<ol style="list-style-type: none"> 9. Discuss Shelter Medicine as an ABVP Specialty and identify career opportunities in the field of shelter medicine. 10. Review the ASV Guidelines for Standards of Care in Animal Shelters and identify their application in a shelter. 11. Perform an analysis of a shelter utilizing the Association of Shelter Veterinarians (ASV) guidelines. Draft SOPs to implement changes for best practice.
<p>2. Models of Sheltering and Population Statistics</p>	<ol style="list-style-type: none"> 1. Define the terms open admission and limited admission. 2. Discuss advantages and disadvantages of open versus limited admission shelter models. 3. Define the term No-Kill. Explain the No-Kill Movement's impact upon shelters and communities. 4. Discuss different methods of data collection and statistical analysis utilized by shelters, including shelter management software. 5. Explain the Asilomar Accords definitions: healthy, treatable-rehabilitatable, treatable-manageable, unhealthy-untreatable. 6. Classify examples of medical or behavioral conditions using the Asilomar Accords definitions. 7. Explain the Pet Evaluation Matrix. 8. Define the term live release rate. 9. Calculate live release rate for a shelter. 10. Define the term non-profit organization. 11. Compare a non-profit versus a for-profit business model. 12. Discuss the benefits and challenges of a nonprofit shelter model. 13. Discuss sources of funding for different shelter models, including grant proposals and fund-raising tips. 14. Discuss the positive and negative role public and social media can play in the reputation of the shelter in the public eye.
<p>3. Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics</p>	<ol style="list-style-type: none"> 1. Define the term veterinary forensic sciences. 2. Define the terms animal cruelty and animal neglect. 3. Identify examples of animal abuse for individual cases and large-scale cases. 4. Discuss the link between animal abuse and domestic violence, elder abuse, and child maltreatment. Explain the Macdonald Triad. 5. Describe the role of the veterinarian in animal cruelty/neglect cases.

	<ol style="list-style-type: none"> 6. Describe how to perform a proper forensic medical examination, including evidence collection. 7. Describe how to write a proper forensic medical report, including written and photographic documentation. 8. Discuss animal cruelty and neglect laws and state to state differences. Explain the role of law enforcement in cruelty/neglect cases. 9. Design SOPs for a hospital/shelter setting for neglect/cruelty cases. 10. Design SOPs for large scale animal cruelty/neglect cases in the field. 11. Discuss and analyze case examples of animal cruelty and neglect, including international animal welfare issues. 12. Discuss ways to prevent animal cruelty and advocacy efforts by individuals and larger animal organizations. 13. Identify advanced career opportunities in animal forensics and animal welfare/advocacy.
<p>4. Shelter Animal Behavioral Health</p>	<ol style="list-style-type: none"> 1. Define how animals learn. 2. Discuss dog and cat training techniques, including clicker training. 3. Explain and describe Low-Stress Handling and Restraint techniques. 4. Explain and describe Fear Free Handling and Restraint Techniques. Observe and practice techniques from the Free Shelter Program. 5. Explain and identify animal warning signs for stress, fear, and aggression. 6. Explain and identify techniques and examples to incorporate enrichment into the shelter environment. 7. Evaluate behavior assessments in dogs, including SAFER. 8. Evaluate behavior assessments in cats, including Feline-ality. 9. Discuss adoption criteria and candidacy for animals with behavioral problems, including behavior disclosures and post- adoption support. 10. Discuss common behavioral problems in dogs and cats and successful behavior modification in the shelter and home environment. 11. Discuss pharmaceutical management for common behavioral problems in dogs and cats. 12. Identify advanced career opportunities in animal behavior.
<p>5. Disaster Preparedness</p>	<ol style="list-style-type: none"> 1. Name different types of disasters, including natural and man-made.

	<ol style="list-style-type: none"> 2. Define the term co-location shelter and explain the concept. 3. Recognize the importance of disaster preparedness. 4. Define the term ICS (Incident Command Structure) and explain the concept. 5. Discuss how disasters can impact animals in a community and the shelter environment. Use case examples. 6. Identify steps that individual pet owners, communities, and shelters can take to mitigate disaster, prepare for a disaster, and recover from a disaster. 7. Review examples of Disaster Plans for Shelters and discuss their design and recommendations based on individual shelter needs. 8. Design an evacuation plan for an animal shelter in case of a disaster. 9. Design a plan to set-up a temporary animal shelter in case of a disaster. 10. List courses (including FEMA) and resources for additional hands-on training in disaster response.
<p>6. Management of Feline Overpopulation in Communities</p>	<ol style="list-style-type: none"> 1. Define the term community cat and classify the different types of community cats. 2. Describe the different methods for managing community cats, including TNR, SNR, RTF. 3. Discuss the key components of setting-up and managing successful TNR, SNR, and RTF programs from a shelter perspective and a community perspective. 4. Describe safe and humane handling techniques for community cats in the spay/neuter clinic environment. 5. Explain best practices for medical and management protocols of community cats in the clinic environment. 6. Discuss arguments against TNR and opposition faced by TNR advocates and programs. 7. State FeLV/FIV testing recommendations for community cats in a TNR clinic. 8. State vaccination recommendations for community cats in a TNR clinic. 9. Review and discuss scientific studies and case examples of TNR programs. 10. Practice effective community outreach techniques to educate the public about humane methods for managing community cats. 11. Discuss the benefits and success of TNR/SNR/RTF programs for individual cats, cat colonies, the community, and the shelter.

	<ol style="list-style-type: none"> 12. Design feline population management control plans for local shelters and communities.
<p>7. Shelter, Community, and Public Health</p>	<ol style="list-style-type: none"> 1. Define the term zoonotic disease. 2. List examples of zoonotic agents in the shelter. 3. Identify factors contributing to zoonoses in a shelter environment. 4. Explain the impact of zoonotic agents in the shelter. 5. Identify methods to prevent and/or manage zoonotic outbreaks. 6. Identify effective and appropriate sanitation agents and procedures for the shelter. 7. Understand the risks shelter animals can pose to immunocompromised people. 8. Analyze a case example of a zoonotic agent in the shelter environment. 9. Recognize techniques for Rabies prevention, effective diagnosis, and quarantine protocols for Rabies positive species. 10. Demonstrate effective communication techniques for public education related to public health. 11. Describe the role of the veterinarian as it relates to public health.
<p>8. Spay and Neuter Programs</p>	<ol style="list-style-type: none"> 1. Define the terms ovariohysterectomy, castration, and neuter. 2. Identify trends and advancements of the spay and neuter movement. 3. Compare and contrast the pros/benefits and the cons/negatives to spay/neuter. 4. Define the term pediatric spay/neuter. Explain pediatric surgical and anesthetic considerations and discuss the benefits and disadvantages of the procedure. 5. Review and discuss scientific studies on spay/neuter, including age and breed recommendations based on findings. 6. State appropriate spay/neuter age recommendations for shelter animals, owned cats, and owned dogs based on current resources/evidence. 7. Discuss barriers to access to care and spay/neuter resources for the general public. Identify methods the veterinary profession can utilize to increase access to veterinary care for pet owners in all socioeconomic groups. 8. Identify different spay/neuter clinic models. Provide examples for each clinic model.

	<ol style="list-style-type: none"> 9. Compare and contrast the advantages, disadvantages, and target audience for the different spay/neuter clinic models. 10. Describe the ASV Medical Care Guidelines for Spay and Neuter and discuss their application to all spay/neuter clinic models. 11. Identify strategies, community outreach techniques, and public education, for effective spay/neuter outreach.
<p>9. High-Quality High-Volume (HQHV) Spay and Neuter Surgical Techniques and Medical Protocols</p>	<ol style="list-style-type: none"> 1. Review the ASV Medical Care Guidelines for Spay and Neuter and discuss their application to all spay/neuter clinic models. 2. Define the term High-Quality High-Volume Spay/Neuter (HQHV) clinics. 3. Discuss High-Quality High-Volume Spay/Neuter techniques, including incision site placement, suture on a reel, pediatric patients, pedicle ties for feline spays, ovariectomies, flank spays, and scrotal approach to castrations. Cite specific examples related to surgical techniques and medical and management protocols. 4. Demonstrate proficiency in performing Miller’s knots, pedicle ties in female cats, and figure-8 instrument ties in male cats. 5. Discuss autotransfusion protocols and practical application of the technique. 6. Discuss anesthetic protocol considerations in HQHV Spay and Neuter clinics. 7. Discuss non-surgical forms of sterilization in dogs and cats, including chemical castration of canines. Explain indications, contra-indications, and practical application of non-surgical techniques.
<p>10. Euthanasia and Emotional Well-Being in the Shelter Environment</p>	<ol style="list-style-type: none"> 1. Cite approved euthanasia techniques based on the AVMA Guidelines for Euthanasia. 2. Identify legal and technical aspects of euthanasia. 3. Compare and contrast euthanasia protocols in a shelter versus private practice. 4. Determine best practice techniques for euthanasia in a shelter environment. 5. Discuss the role of the shelter veterinarian in euthanasia, including legal, technical, and emotional components. 6. Discuss additional stressors and the emotional impact working in a shelter environment has upon the psyche of veterinarians, staff, and volunteers. 7. Define the terms burnout, compassion fatigue, and ethical/moral fatigue.

	8. Develop healthy and appropriate techniques for stress management and self-care. 9. Identify resources, tools, and professional programs to help veterinary students and veterinary professionals positively manage their emotional well-being.
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XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome (CLOs)	SGU SVM Program Level Outcome (PLOs)
CLO 1. Discuss current topics and emerging trends in the field of shelter medicine.	A. Core Medical Knowledge PLOs 1,2,3,4,5,6,7,8,9,10,11 B. Core Professional Attributes PLOs 12,13,15,17,18,19 C. Core Clinical Competencies (Skills) PLOs 22,23,24,25,26,27,28
CLO 2. Utilize resources to provide appropriate and humane care for shelter animals and communities.	A. Core Medical Knowledge PLOs 1,2,3,4,5,6,7,8, 9,10,11 B. Core Professional Attributes PLOs 12,13,14,15,17,18,19 C. Core Clinical Competencies (Skills) PLOs 20,21,22,23,24,25,26,27,28
CLO 3. Illustrate the variety of career paths associated with shelter medicine.	A. Core Medical Knowledge PLOs 7,8,9,11 B. Core Professional Attributes PLOs 12,13,14,15,16,17,18,19 C. Core Clinical Competencies (Skills) PLOs 23,24,25,26,27,28

Please find a detailed description of Course Level Outcomes (CLOs) mapped to Program Level Outcomes (PLOs) at the end of the syllabus in the Appendix.

XII. Course Schedule

SAMS 539 Fall 2020 Course Schedule

WEEK	DATE	LECTURE/LAB/ MODULE	LECTURER/ INSTRUCTOR	ASSIGNMENT/ ASSESSMENT
Week #1	August 16 th - August 22 nd	Shelter Animal Physical Health and Management	Dr. Marta Lanza and Ms. Liz Peach	Forum Post Due Date: Friday, August 21st
Week #2	August 23 rd - August 29 th	Models of Sheltering and Population Statistics	Dr. Jennifer Bolser	None
Week #3	August 30 th - September 5 th	Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics	Dr. JoEllen Bruinooge	None
Week #4	September 6 th - September 12 th	Shelter Animal Behavioral Health	Dr. Melissa Bain	Short Answer Assignment for Lectures from Weeks 2, 3, and 4 Due Date: Friday, September 11th
Week #5	September 13 th - September 19 th	Disaster Preparedness	Ms. Consie von Gontard	None
Week #6	September 20 th - September 26 th	Management of Feline Overpopulation in Communities	Dr. Katherine Polak	None
Week #7	September 27 th - October 3 rd	Shelter, Community, and Public Health	Dr. Elise Gingrich	Short Answer Assignment for Lectures from Weeks 5, 6, and 7 Due Date: Friday, October 2nd

Week #8	October 4 th - October 10 th	No Lecture	NA	None
Week #9	October 11 th - October 17 th	No Lecture	NA	Standard Operating Procedure (SOP) Disinfection Protocol for Shelter Due Date: Friday, October 16th
Week #10	October 18 th - October 24 th	Spay and Neuter Programs	Dr. Marta Lanza and Ms. Liz Peach	None
Week #11	October 25 th - October 31 st	HQHV Spay and Neuter Surgical Techniques and Medical Protocols	Dr. Marta Lanza and Ms. Liz Peach	Multiple Choice Quiz for Lectures from Weeks 10 and 11 Due Date: Friday, October 30th
Week #12	November 1 st - November 7 th	Euthanasia and Emotional Well-Being in the Shelter Environment	Dr. Elise Gingrich	Forum Post Due Date: Friday, November 6th
Week #13	November 8 th - November 14 th	No Lecture	NA	None
Week #14	November 15 th - November 21 st	No Lecture	NA	None
Week #15	November 22 nd - November 28 th	No Lecture	NA	Short Answer Final Exam Due Date: Friday, November 27th

XIII. Grading and assessment policy, and grading rubrics

➤ Grading Scale:

This course is graded with letter grade in accordance to the SGUSVM grading scale:

>89.5%	A
84.5-89.4	B+
79.5-84.4	B
74.5-79.4	C+
69.5-74.4	C
64.5-69.4	D+
59.5-64.4	D
<59.4	F

➤ Assessments and Assignments:

1. Short Answer Final Exam= 30 Points

- The final exam will consist of 5 short answer, open-book questions.
- The questions are designed to summarize the course learning outcomes.
- Material covered includes lectures and Required Readings for each module.
- See Grading Rubric at the end of the Syllabus in the Appendix

2. Standard Operating Procedure (SOP) Disinfection Protocol for Shelter=20 Points

- The assignment is designed as an exercise for the practical application of The Association of Shelter Veterinarians (ASV) Guidelines for Standards of Care in Animal Shelters and a critical analysis of a real shelter setting example.
- A Standard Operating Procedure (SOP) needs to be drafted in written form for the GSPCA or shelter/rescue of your own choosing.
- Students are required to submit the following:
 1. A Standard Operating Procedure (SOP) written as a simple, step-step description to present to the shelter for inclusion in their daily operations.
 2. A 500 word or less written description and summary of your recommendations.
- See Grading Rubric at the end of the Syllabus in the Appendix

3. Forum Posts x 2 Posts= 20 Points (10 Points Each)

- **Personal Introduction Post for Lecture: Shelter Animal Physical Health and Management, Week 1**
Please provide an introduction about your background in shelter medicine/veterinary medicine, what interests you about shelter medicine, why you have chosen to participate in this selective, what you hope to gain from this course, anything else you would like to share with the class.
- **Self-Reflection Exercise for Stress Management and Self-Care Post for Lecture: Euthanasia and Emotional Well-Being in the Shelter Environment, Week 12**
This post is designed as a self-reflection exercise. Please describe:

1. 3 healthy and appropriate methods for stress management and self-care you utilized in Grenada.
 2. 3 healthy and appropriate methods for stress management and self-care you are currently using at home.
 3. 3 healthy and appropriate methods for stress management you plan to utilize in your 4 th year of clinical rotations and your future veterinary career.
- Your Forum Posts will be shared with the entire class and course directors.
 - You are required to:
 - Post your own personal response to this question(s).
 - Reply to one post made by your fellow classmates/course directors in an effort to encourage class engagement and discussions.
 - See Grading Rubric at the end of the Syllabus in the Appendix
- 4. Short Answer Assignment x 2 Assignments=20 Points (10 Points Each)**
- **Short Answer Assignment for Lectures from Weeks 2, 3,4**
Please identify and describe 3 main concepts you learned or were impacted by from the lectures. Please refer to the lecture learning outcomes for assistance.
 - **Short Answer Assignment for Lectures from Weeks 5, 6, 7**
Please identify and describe 3 main concepts you learned or were impacted by from the lectures. Please refer to the lecture learning outcomes for assistance.
 - See Grading Rubric at end of the Syllabus in the Appendix
- 5. Multiple Choice Quiz= 10 Points**
- **Multiple Choice Quiz for Lectures from Weeks 10 and 11**
 - The quiz consists of 10 multiple choice questions and will be open book/notes.
 - Please refer to the lecture learning outcomes as a guideline for the material to review.
 - The quiz will be posted and graded within Sakai Test and Quizzes.
 - There is no Grading Rubric for this assignment. The total points will be based on the number of questions answered, at a value of one point per question. Partial credit will not be given for any questions answered incorrectly.
- **Final Grade:**
- The course grade will be based on a total of 100 points, weighted as described above.
 - All assignments should be submitted via Sakai Forum, Assignments, and Tests and Quizzes.
 - Feedback on all assignments and assessments will be provided within a week after submission via Sakai.
 - Final grades will be posted in Sakai Gradebook and released within one week of submission of the Short Answer Final Exam.
 - Students are required to sign and adhere to the honor code for all assignments and assessments.
 - There is no clinical skills component for this course.
 - Class participation is included in your final grade as part of your Forum Posts in Sakai.

- Attendance is not mandatory and there are no points in your final grade for attendance.

XIV. Recommended study strategies

- The student should watch all lectures and labs utilizing Panopto and/or Zoom, including live and recorded sessions.
- The student should adapt to the online learning format and set aside appropriate time and draft a calendar to “attend” lectures and complete all assignments and assessments on time.
- The student should utilize the required and recommended resources provided by course directors and lecturers.
- Access to a shelter or rescue organization for observation and opportunities for practical application of lesson learning outcomes is highly encouraged but not required.
- Contact your Professor/s if there is a need for further clarifications related to the lecture material or assignments. The course directors are always available for discussions via e-mail, Zoom scheduled office hours, or by appointment: Ms. Peach (epeach@sgu.edu) or Dr. Lanza (mperea@sgu.edu).

XV. Instructor’s expectations of the student

- The student is expected to read/skim the required materials and resources prior to class in preparation for that lecture or lab.
- The student is expected to familiarize themselves with the technology being utilized for the course and reach out to the Office of Information Technology and/or the course director(s) for assistance if needed.
- The student is expected to submit all assignments and assessments on time. If there is an issue, students are required to reach out to the course director(s) via email: Ms. Peach (epeach@sgu.edu) or Dr. Lanza (mperea@sgu.edu).

XVI. Professionalism statement

- Students are expected to conduct themselves in an appropriate professional manner in their interactions with lecturers and fellow students via the online format. Please be respectful, courteous, and open to other people’s opinions.
- Cell phones should be switched off or silenced during lectures and labs that are live sessions.
- Please arrive on time for lectures and labs if the session is live and dress appropriately.

XVII. Attendance/Participation Policy (refer student to the student manual page if applicable)

- Students are encouraged to virtually attend and partake in all classes and clinical rotations for which they have registered.
- Students are required to engage in the course material, that is to participate in the learning tools provided (Panopto lectures, Zoom lectures, Forums, Tests and Quizzes, and Assignments).
- Class participation is included in your final grade as part of your Forum Posts in Sakai.
- Attendance is not mandatory and there are no points in your final grade for attendance.

- Lectures will be a combination of live and recorded sessions via Zoom and Panopto. Students will have access to all recorded sessions in Sakai.
- **Live Lecture/Lab Zoom Sessions Policy:**
 - Three lectures/labs (**Week #1 (August 17th-21st)**, **Week #10 (October 19th-23rd)** and **Week #11 (October 26th-30th)**) will be live Zoom Sessions at an agreed upon time for the majority of students and course directors. The sessions will also be recorded. Attendance to these live sessions is not mandatory.
 - For attendance of live sessions, students are strongly encouraged but not required to turn on their cameras to increase class engagement and interaction.
 - Students are expected to behave in a professional manner and dress appropriately for all live sessions.
- If failure to attend, engage, or participate in individual classes, examinations, and online activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

XVIII. Policy regarding missing examinations and/or failure of submission of assignments

- Students who fail to attend an examination or submit an assignment by the deadline without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of “0” points for the examination.
- Make-up assignments/assessments are at the discretion of the course director(s).
- Students who have technical issues during the examination **MUST** inform the Course Directors (peeach@sgu.edu or mperea@sgu.edu) and IT (tellexaminationsservices@sgu.edu OR support@sgu.edu OR call 1-631-665-8500 ext. 4444 (US, NU, International) OR 1-473-439-2000 ext. 4444 (Grenada), AND Dean of Students (DOS@sgu.edu OR call *****) during the open period for the examination. Failure to do so immediately will result in the student receiving a score of “0” points for the examination.
- Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the School.

XIX. ExamSoft policy

All students are responsible for knowing and complying with the University’s Code of Conduct and the guidelines. Students must read and then sign the Honor Code statement at the start of examinations to indicate that they will comply with the University Code of Conduct.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:

2. Examinees must use their MY SGU Member Center username and password to access the Custom Home Page (www.examsoft.com/sgu) created by ExamSoft for the University.
3. Examinees are responsible for downloading and registering the latest version of Exemplify on their laptop prior to exam day. Once Exemplify has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. Examinees are responsible for setting their laptop up for ExamMonitor prior to the exam (see links below).
5. Examinees will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
6. Examinees experiencing difficulties with their laptop are encouraged to visit the IT department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.
7. Examinees should visit the following information to familiarize themselves with the online proctored exam format and set up their baseline photo.
 - a. [A Examsoft/ExamID quick guide for students](#) (Please note that the current Exemplify version is **2.3.8**)
 - b. [The examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. [Examsoft information page](#)
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

The materials (such as slides, handouts, and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. Students are free to duplicate these materials *solely* for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited.

Appendices:

1. Alignment of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs)-Detailed Description

Course Level Outcome	SGU SVM Program Level Outcome
<p>CLO 1. Discuss current topics and emerging trends in the field of shelter medicine.</p>	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.</p>

	<p>PLO 11 Understand and apply basic principles of research and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues, and responsible authorities.</p> <p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity, and empathy.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 22 Analyze, design, and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 23 Analyze, design, and execute appropriate plans for basic surgery and surgical case management.</p> <p>PLO 24 Analyze, design, and execute appropriate plans for medical case management.</p> <p>PLO 25 Analyze, design, and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p> <p>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p>
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	<p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
<p>CLO 2. Utilize resources to provide appropriate and humane care for shelter animals and communities.</p>	<p>A. Core Medical Knowledge</p> <p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.</p> <p>PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.</p> <p>PLO 4 Explain the relationship between disease processes and clinical signs.</p> <p>PLO 5 Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines.</p> <p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.</p> <p>PLO 11 Understand and apply basic principles of research and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Core Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues, and responsible authorities.</p>

	<p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity, and empathy.</p> <p>PLO 14 Demonstrate, evaluate, and model leadership, teamwork, and conflict resolution skills as a member of a multidisciplinary team.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>C. Core Clinical Competencies (Skills)</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p> <p>PLO 21 Create comprehensive treatment plans.</p> <p>PLO 22 Analyze, design, and execute appropriate plans for anesthesia and pain management considering patient welfare.</p> <p>PLO 23 Analyze, design, and execute appropriate plans for basic surgery and surgical case management.</p> <p>PLO 24 Analyze, design, and execute appropriate plans for medical case management.</p> <p>PLO 25 Analyze, design, and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p>
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	<p>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p> <p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
<p>CLO 3. Illustrate the variety of career paths associated with shelter medicine.</p>	<p>A. Core Medical Knowledge</p> <p>PLO 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p> <p>PLO 11 Understand and apply basic principles of research and recognize the contribution of research to all aspects of veterinary medicine.</p> <p>B. Professional Attributes</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues, and responsible authorities.</p> <p>PLO 13 Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity, and empathy.</p> <p>PLO 14 Demonstrate, evaluate, and model leadership, teamwork, and conflict resolution skills as a member of a multidisciplinary team.</p> <p>PLO 15 Model lifelong continuing education and professional development.</p> <p>PLO 16 Demonstrate and model adaptability and resilience.</p> <p>PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.</p> <p>PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.</p> <p>PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p>

	<p>C. Core Clinical Competencies (Skills)</p> <p>PLO 23 Analyze, design, and execute appropriate plans for basic surgery and surgical case management.</p> <p>PLO 24 Analyze, design, and execute appropriate plans for medical case management.</p> <p>PLO 25 Analyze, design, and execute appropriate plans for emergency and critical care case management.</p> <p>PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.</p> <p>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p> <p>PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.</p>
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2. Rubrics for Assignments/Assessments-Detailed Description

A. Short Answer Final Exam Grading Rubric

B. Short Answer Assignment Grading Rubric

5	A+
4	A
3	B
2	C
1	D
0	F

	Poor		Average		Excellent
1. Completeness Student directly answers each question and provides required number of examples.	1.0	2.0	3.0	4.0	5.0
2. Knowledge Student correctly defines key terms and concepts and makes appropriate reference to guidelines and standards from veterinary medicine, and shelter medicine specifically.	1.0	2.0	3.0	4.0	5.0
3. Analysis Student clearly and concisely describes analytical thought process, provides clear explanations, and utilizes appropriate examples to support points.	1.0	2.0	3.0	4.0	5.0
4. Written Skills and Communication Student utilizes scientific and professional language, minimal errors in grammar and spelling.	1.0	2.0	3.0	4.0	5.0
Total Score and Comments					

C. Standard Operating Procedure (SOP) Disinfection Protocol for Shelter Grading Rubric

5	A+
4	A
3	B
2	C
1	D
0	F

	Poor		Average		Excellent
1. Completeness <ul style="list-style-type: none"> • Student provides a thorough analysis of the current disinfection protocol and practices being utilized at the shelter. • Student provides shelter with appropriate and practical recommendations for improvements to their current disinfection protocol. 	1.0	2.0	3.0	4.0	5.0
2. Knowledge <ul style="list-style-type: none"> • Student correctly defines key terms and concepts and makes appropriate reference to guidelines and standards from veterinary medicine, including the Association of Shelter Veterinarians (ASV) Guidelines for Standards for Standards of Care in Animal Shelters and the ASPCA Shelter Disinfectant Quick Reference. 	1.0	2.0	3.0	4.0	5.0
3. Analysis <ul style="list-style-type: none"> • Student clearly and concisely describes analytical thought process, provides clear explanations, and utilizes appropriate examples to support points. • Student includes the following in their analysis: <ol style="list-style-type: none"> 1. Surface materials at the shelter 	1.0	2.0	3.0	4.0	5.0

<ul style="list-style-type: none"> 2. Product efficacy against viruses/diseases in the shelter environment 3. Cleaning procedures and product application 4. Contact time 5. PPE Required 6. Cost/Availability of Product 7. Staff Training Required 					
<p>4. Written Skills and Communication</p> <ul style="list-style-type: none"> • Student utilizes scientific and professional language, minimal errors in grammar and spelling. • Student drafts an SOP in a concise, simple step-step description that can be followed by all staff and volunteers at the shelter. Pictures can also be included. • Student also includes a written 500 words or less summary of their recommendations. 	1.0	2.0	3.0	4.0	5.0
Total Score and Comments					

D. Forum Posts Grading Rubric

5	A+
4	A
3	B
2	C
1	D
0	F

	Poor		Average		Excellent
1. Completeness Student provides a thorough and complete response to address all components of the discussion prompt.	1.0	2.0	3.0	4.0	5.0
2. Knowledge <ul style="list-style-type: none"> • Student correctly defines key terms and concepts and makes appropriate reference to guidelines and from veterinary medicine. • Student applies class content (lecture/lab material) in an appropriate manner to post. 	1.0	2.0	3.0	4.0	5.0
3. Analysis Student clearly and concisely describes analytical thought process, provides clear explanations, and utilizes appropriate examples to support points.	1.0	2.0	3.0	4.0	5.0
4. Written Skills and Communication <ul style="list-style-type: none"> • Student utilizes scientific and professional language, minimal errors in grammar and spelling. • Student adheres to word limit (250 words or less). 	1.0	2.0	3.0	4.0	5.0
5. Student Engagement	1.0	2.0	3.0	4.0	5.0

<ul style="list-style-type: none"> • Student respond to 1-2 other posts, with professional, insightful, constructive, relevant feedback. • Students encourages further discussion in the post through a built upon/refuted point or additional question. 					
Total Score and Comments					

St. George's University
School of Veterinary Medicine
Course Director Listing - Fall 2020

Anatomy, Physiology & Pharmacology Department (Dept. Chair: Dr. Hector Zerpa)

Banner CRN	COURSES Term I	COURSE CODE	20 Credits	Course Director	SYLLABI
11891	Histology & Embryology	ANPH 501	5	Dr. Sunil Gupta	YES
11890	Anatomy I	ANPH 506	5	Dr. Mahesh Shiram Deokar	YES
11892	Physiology I	ANPH 512	5	Dr. Hector Zerpa	YES
11894	Clinical Orientation	LAMS 502	1	Dr. Keith Kalasi & Dr. Kerri Nigito	YES
12137	Basic Small Animal Nutrition	LAMS 540	1	Dr. Catherine Werners Butler	YES
12138	Professional Development I	LAMS 541	2 (P/F)	Dr. Brian P Butler & Dr. Kerri Nigito	YES
11893	Radiology I	SAMS 501	1	Dr. Thomas Hanson	YES

Banner CRN	COURSES Term II	COURSE CODE	21 Credits	Course Director	SYLLABI
11895	Anatomy II	ANPH 503	5	Dr. Tom Aire	YES
11898	Veterinary Pharmacology I	ANPH 504	3	Dr. Kamashi Kumar	YES
11896	Physiology II	ANPH 513	3	Dr. Hugo Hernandez Fonseca	YES
12226	Professional Development II	LAMS 542	2 (P/F)	Dr. Adria Rodriguez	YES
11900	Bacteriology/Mycology	PTHB 503	4	Mr. Victor Amadi & Dr. Andy Alhassan	YES
11897	Veterinary Immunology	PTHB 512	2	Dr. Euan Allan	YES
11899	Radiology II	SAMS 502	1	Dr. Thomas Hanson	YES
11901	Veterinary Physical Diagnosis I	SAMS 515	1	Dr. Francesca Ivaldi	YES

Pathobiology Department (Dept. Chair: Dr Melinda Wilkerson)

Banner CRN	COURSES Term III	COURSE CODE	21 Credits	Course Director	SYLLABI
11905	Veterinary Pharmacology II	ANPH 505	3	Dr. Arend Werners	YES
11908	Veterinary Physical Diagnosis II	LAMS 501	1	Dr. Zainab Momoh	YES
12227	Professional Development III	LAMS 543	2 (P/F)	Drs. Austin P. Kirwan & Adria Rodriguez	YES
11902	Parasitology	PTHB 505	4	Dr. Rhonda Pinckney	YES
11903	Pathology I	PTHB 506	4	Dr. Brian Butler	YES
11904	Virology	PTHB 515	3	Dr. Sonia Cheetham-Brow	YES
11906	Clinical Pathology	PTHB 532	4	Dr. Richard Kabusu & Dr. Melinda Wilkerson	YES

Banner CRN	COURSES Term IV	COURSE CODE	19 Credits	Course Director	SYLLABI
11912	Introduction to Clinical Medicine	LAMS 503	4	Dr. Inga Karasek	YES
11909	Pathology II	PTHB 507	5	Dr. Muhammad Bhaiyat & Dr. Camila Dores	YES
11914	Veterinary Public Health	PTHB 510	2	Dr. Rohini Roopnarine	YES
11911	Veterinary Epidemiology	PTHB 511	1	Dr. Rohini Roopnarine	YES
11915	Avian, Fish & Exotic Animal Diseases	PTHB 516	3	Dr. David Marancik	YES
11910	Introduction to Surgical Skills	SAMS 514	1	Dr. Tara Paterson	YES
11913	Veterinary Anesthesiology	SAMS 520	3	Dr. Rodolfo Bruhl Day & Dr. Flavia Restitutti	YES

Small Animal Medicine and Surgery Department (Prog. Direc.: Dr. Rodolfo Bruhl-Day)
Large Animal Medicine and Surgery Academic Program (Prog. Direc.: Dr. Catherine Werners- Butler)

Banner CRN	COURSES Term V	COURSE CODE	22 Credits	Course Director	SYLLABI
11919	Large Animal Surgery I	LAMS 516	2	Dr. Heidi Janicke	YES
11918	Theriogenology	LAMS 519	4	Dr. Firdous Khan	YES
12228	Livestock Medicine I	LAMS 544	2	Drs. Stacey Renee Byers	YES
11916	Diagnostic Imaging	SAMS 513	3	Drs. Thomas Hanson & Hester McAllister	YES
11917	Small Animal Surgery	SAMS 518	5	Dr. Rodolfo Bruhl Day	YES
11920	Small Animal Medicine I	SAMS 522	3	Dr. Talia Guttin	YES
11922	Introduction to Clinical Practice	SAMS 526	1 (P/F)	Dr. Wayne Sylvester	YES
11921	Junior Surgery & Anesthesiology Lab	SAMS 527	2	Dr. Marta Lanza-Perea	YES

Banner CRN	COURSES Term VI	COURSE CODE	19 Credits	Course Director	SYLLABI
12142	Vet Ed Assessment Term 5	VEA 500	0	Dr. Anne Corrigan	
11927	Veterinary Toxicology	ANPH 520	2	Dr. Arend Werners	YES
11923	Equine Internal Medicine	LAMS 505	3	Drs. Catherine Werners Butler & Dr. Lauren Nicole Wise	YES
11924	Livestock Medicine II	LAMS 515	3	Dr. Stacey Renee Byers	YES
11925	Professional Veterinary Development	LAMS 533	2 (P/F)	Dr. Lauren Nicole Wise	YES
12235	Large Animal Surgery II	LAMS 545	2	Dr. Heidi Janicke	YES
11928	Small Animal Medicine II	SAMS 524	4	Dr. Anne Corrigan	YES
11926	Introduction to Clinical Rotations	SAMS 528	2 (P/F)	Dr. Wayne Sylvester, Dr. Kerri Nigito and Dr. Alfred Chikweto	YES

12017	Special Topics in Equine Practice	LAMS 537	1	Dr. Inga Karasek	YES
12270	Veterinary Practice, Management and Leadership	LAMS 546	1	Drs. Lauren Nicole Wise and Dr. Heather Douglas	YES
12271	Clinical Reasoning in Veterinary Medicine	SAMS 530	1	Dr. Adria Rodriguez	YES
11930	Advanced Cardiology in SAM	SAMS 531	1	Dr. Anne Corrigan	YES
11931	Special Topics in Small Animal Orthopedic Surgery	SAMS 534	1	Dr. Tomas Guerrero	YES
11940	Advanced Topics in Dermatology	SAMS 535	1	Dr. Tara Paterson	YES
11932	Special Topics in Emergency Critical Care	SAMS 536	1	Dr. Talia Guttin	YES
11933	Small Animal Clinical Nutrition	SAMS 537	1	Dr. Tara Paterson	YES
12016	Shelter Medicine	SAMS 539	1	Ms. Elizabeth Peach & Dr. Marta Lanza Perea	YES
12268	Year Four Clinical Rotation	VMEX 999	0	Drs. Rolf Larsen & Nicole Wise	

DVM-Global Veterinary Medicine Track (TOTAL 41 credits)					
12109	VPH: A Global Perspective	PTHB 537	1	Dr. Rohini Roopnarine	YES
12094	Transboundary Animal Disease	PTHB 539	1	Dr. Brian Butler	YES
12021	Extra Mural Studies	PTHB 540	38 (P/F)	Dr. Austin Kirwan	NO
12159	Food Hygiene & Meat Inspection	PTHB 541	1 (P/F)	Dr. Satish Bidaisee	YES

DVM-Work Based Advancement Track (TOTAL 16 credits)					
12272	Veterinary Practice Experience	ELEC 550	16 (P/F)	Drs. Lauren Nicole Wise & Rolf Larsen	

DVM-VSRI (TOTAL 12 credits)					
12151	Research Experience	ELEC 517	1	Dr. Sonia Cheetham-Brow	
12066	Research Experience	ELEC 518	2	Dr. Sonia Cheetham-Brow	
12073	Research Experience	ELEC 519	3	Dr. Sonia Cheetham-Brow	
12153	Research Experience	ELEC 520	4	Dr. Sonia Cheetham-Brow	

indicates changes implemented for the semester (DVM = 122 cr; DVM-RCVS = 163 cr; DVM-WBA = 138 cr; DVM-VSRI = 134 cr)

DVM ELECTIVES FALL 2020					
12150	Advance Molecular Techniques	ELEC 529	3 (P/F)	Dr. Andy Alhassan	NO
12126	Topics in Veterinary Entomology	ELEC 532	1 (P/F)	Mr. Daniel Fitzpatrick	NO