



**ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY HISTOLOGY & EMBRYOLOGY SYLLABUS (5 Credits)
ANPH501(Term-1)
Spring 2021**

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: rstlou2@sgu.edu

II. Course location

Online location—Sakai resources, Panopto online video, Zoom online classroom, Assignments and Examsoft

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. 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 (CLOs)

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 (PLOs):

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) 24 th February 2021	30 points
Midterm Examination (Lect.1 – 26 & Lab.1-10) 8 th March 2021	75 points
Second Quiz (Lecture. no. 27 – 41) 14 th April 2021	30 points
Final Examination (Lect.27-55 & Lab.11-14) 3 rd May 2021	75 points
Lab Assignment	15 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 be available during the standard 8 - 5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every

academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.
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 / Exam ID 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/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:

Table 1 Lecture & Laboratory schedule

Detailed course contents are available in lecture / lab notes and PowerPoints.

During campus teaching, histology labs are generally for two hours. One hour of presentation and one hours of studying the histological slides. During online classes as students are only studying through lab videos, hence second hour of histological slides studies are replaced by mandatory zoom classes

Abbreviations used in the table 1: Lect. = Lecture, Lab. = Laboratory session, Zoom M = Mandatory zoom class, Zoom O = Optional zoom office hours
SKG =Sunil K Gupta, RSL = Rhea St. Louis

Total Lectures = 55, Total labs = 14, Quizzes = 2, Assignment = 1
Zoom mandatory class =14, Zoom optional office hour= 9

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

Week / dates	Topic and material covered	Scheduled activity	Weekly hours
1. Jan 18- 22	Lect. 1-4 Sakai – Panopto (SKG) 1. Introduction of the course and course syllabus (live session) 2. Cytology: Cell membrane and nucleus, Ribosomes 3. Cell organelles & Inclusions 4. Intercellular junctions & specialization of cell surfaces, Epithelium Lab.1 Study of microscope, staining and artifacts (RSL)	Zoom Mandatory on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 1 hr. Zoom M = 1 hr. Total = 6 hr.
2. Jan 25-29	Lect. 5-8 Sakai – Panopto (SKG) 5. Epithelium and glands 6. Glands and Connective tissues 7. Connective tissue, Cartilage 8. Bone Lab. 2 Epithelium (RSL) Lab. 3 Glands and Connective tissue (RSL)	Zoom M on Monday at 1.00 pm Zoom Optional on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 2 hr. Zoom M = 1 hr. Total = 7 hr.
3. Feb 1-5	Lect. 9-12 Sakai – Panopto (SKG) 9. Muscular tissue 10. Nervous tissue: neuron and classification 11. Neuroglia & Peripheral nerve 12. Ganglia, Nerve endings & CNS Lab. 4 Cartilage, bone and muscles (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 1 hr. Zoom M = 1 hr. Total = 6 hr.
4. Feb 8-12	Lect. 13-15 Sakai – Panopto (SKG) 13. Cardiovascular system: heart 14. Blood vessels 15. Blood 16. Hemopoiesis and lymph node Lab. 5 Nervous system and blood vessels (RSL) Lab.6 Blood (RSL)	Zoom M on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 2 hr. Zoom M = 1 hr. Total = 7 hr.
5. Feb 15-19	Lect. 17-20 Sakai – Panopto (SKG) 17. Thymus, and spleen 18. Hemal node, cloacal bursa Respiratory system 19. Respiratory system 20. Avian respiratory system Lab. 7 Lymphatic and Respiratory system (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 1 hr. Zoom M = 1 hr. Total = 6 hr.

6. Feb 22-26	Lect. 21-23 Sakai – Panopto (SKG) 21. Digestive system: Oral cavity and tongue 22. Teeth, salivary gland and esophagus 23. Ruminant and glandular stomach Lab. 8 Digestive system I (RSL)	Zoom M on Monday at 1.00 pm Quiz-1 Wednesday at 12.30 pm	Lect. = 3 hr. Lab. = 1 hr. Zoom M = 1 hr. Quiz = 1 hr. Total = 6 hr.
7. Mar 1-5	Lect. 24-26 Sakai – Panopto (SKG) 24. Small and large intestine, Anal canal and anal sacs 25. Liver and pancreas 26. Avian digestive system Lab 9 Digestive system II (RSL) Lab 10 Digestive system III (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 3 hr. Lab. = 2 hr. Zoom M = 1 hr. Total = 6 hr.
8. Mar 8-12	MID TERM EXAMINATION	Monday 8th March	
9 Mar 15-19	Lect. 27-30 Sakai – Panopto (SKG) 27. Urinary system: kidney 28. Ureter, urinary bladder and testis (partly) 29. Testis, ductus deferens, accessory sex glands and urethra 30. Female reproductive: ovary and uterine tube Lab.11 Urinary and Male genital system (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 4 hr. Lab. = 1 hr. Zoom M = 1 hr. Total = 6 hr.
10. Mar 22-26	Lect. 31-33 Sakai – Panopto (SKG) 31. Uterus, vagina and avian urogenital system 32. Endocrine: Hypophysis and Pineal gland 33. Thyroid, parathyroid, adrenal, pancreas and skin (partly) Lab.12 Male and female genital system (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 3 hr. Lab. = 1 hr. Zoom M = 1 hr. Total = 5 hr.
11. March 29 - April 2	Lect. 34-36 Sakai – Panopto (SKG) 34. Integument: skin and hair 35. Glands: mammary and others gland and hoof 36. Sense organ: Eye and ear Lab.13 Endocrine and Integument (RSL) Lab. 14 Sense organs (RSL)	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 3 hr. Lab. = 2 hr. Zoom M = 1 hr. Total = 6 hr.

12. Apr 5-9	Lect. 37-41 Sakai – Panopto (SKG) 37. Introduction of embryology and gametogenesis 38. Ovulation, and Fertilization and cleavage 39. Cleavage and Formation of germ layers 40. Body folding, fetal membranes and Implantation 41. Comparative placentation & Teratology	Zoom M on Wednesday at 12.30 pm Lab. Assignment Submission	Lect. = 5 hr. Zoom M = 1 hr. Total = 6 hr.
13. Apr 12-16	Lect. 42-45 Sakai – Panopto (SKG) 42. Development of blood vessels, blood and heart 43. Cardiac abnormalities, embryonic circulations, aortic arches 44. Development of veins, fetal circulation and abnormalities 45. Development of Musculoskeletal and abnormalities	Zoom M on Monday at 1.00 pm Quiz-2 Wednesday at 12.30 pm	Lect. = 4 hr. Zoom M = 1 hr. Quiz = 1 hr. Total = 5 hr.
14. Apr. 19-23	Lect. 46-50 Sakai – Panopto (SKG) 46. Development of digestive tube 47. Development of liver & pancreas 48. Development of respiratory system 49. Development of Urinary system 50. Development of Genital system	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 5 hr. Zoom M = 1 hr. Total = 6 hr.
15 Apr 26-30	Lect. 51-55 Sakai – Panopto (SKG) 51. Development of Neural tube and spinal cords 52. Development of brain & endocrine 53. Development of eye and pharynx 54. Development of pharynx, tongue and teeth 55. Development of Ear & face, teratology	Zoom M on Monday at 1.00 pm Zoom O on Wednesday at 12.30 pm	Lect. = 5 hr. Zoom M = 1 hr. Total = 6 hr.
16. May 3-7	FINAL EXAMINATION	Monday 3rd May	

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

Grenada, West Indies

DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY

COMPARATIVE VETERINARY ANATOMY (5 credits)

ANPH 503; TERM 2

SPRING TERM, 2021

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. 3326]
- 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

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. **videos of prosections**

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

Avian: Laboratory handout notes and **video of a prosected specimen**

Piscean: **Video of prosected specimens**

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 Learning 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 ungulate (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 ungulate (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 normal 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, as well as staff and faculty members.

X. Lesson Learning Outcomes

See "Resources" on SAKAI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

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.

Program Learning Objectives:

1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
4. Explain the relationship between disease processes and clinical signs.
6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.
7. Evaluate and analyze normal versus abnormal animal behavior.

Course Learning Outcome	SGUSVM Program Learning Outcome
CLO1	PLO 1, PLO 4, PLO 6, PLO 7
CLO2	PLO 1, PLO 4, PLO 6, PLO 7
CLO3	PLO 1, PLO 4, PLO 6, PLO 7
CLO4	PLO 1, PLO 4, PLO 6, PLO 7
CLO5	PLO 1, PLO 4, PLO 6, PLO 7
CLO6	PLO 1, PLO 4, PLO 6, PLO 7
CLO7	PLO 1, PLO 4, PLO 6, PLO 7
CLO8	PLO 1, PLO 4, PLO 6, PLO 7
CLO9	PLO 1, PLO 4, PLO 6, PLO 7

XII. Course Schedule

SEE ATTACHMENT 1

XIII. Grading and assessment policy, and grading rubrics

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 about one week, due to time zone differences. The “Lecture” portion of the Midterm and Final course examinations shall be based on the ExamSoft system of assessment, while the “Laboratory” portion shall remain “Tests and Quizzes”-based. As usual, the Special Accommodation students shall be given the appropriate extra time allocated. There could be changes in these under extenuating circumstances, in these COVID-19 times.

Ruminant/Pig

Laboratory Quiz 1 (Open Jan 29 – Feb 3, 2021) --- 10 points (Lab. Nos. 1- 4)

Lecture Quiz 1 (Open Feb 12-17, 2021) ----- 10 points (Lect. Nos. 1-10)

Laboratory Quiz 2 (Open Feb 19-24, 2021) ----- 10 points (Lab. Nos. 5 -10)

Midterm Examination [Lect.] (Mar 8–12, 21)--- 60 points (Lect. Nos. 1-21)

Midterm Examination [lab.] (Mar 8 – 12, 2021) ----- 40 points (Lab. Nos. 1-14)

Total = 130 points

Equine Anatomy, Avian and Fish Anatomy

Laboratory Quiz 3 (Open Apr. 2 – 7, 2021) ----- 10 points (Lab. Nos. 15-20)
 Lecture Quiz 2 (Open Apr. 9-14, 2021) ----- 10 points (Lect. Nos. 22-32)
 Laboratory Quiz 4 (Open Apr. 23-28, 2021) ----- 10 points (Lab. Nos. 21-26)
 Final Examination [Lecture] (May 5, 2021) ----- 60 points (Lect. Nos. 16-38)
 Final Examination [Laboratory] (May 5 - 10, 2021)---- 40 points (Lab. Nos. 13-26)

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 person) study sessions are very helpful and beneficial, where possible.

XV. Instructor's expectations of the student

We expect students to read through appropriate sections of 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. The use of the "Help Questions" provided for each body region and/or species is an extremely learning and knowledge consolidation strategy.

XVI. Professionalism statement

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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: the Zoom sessions, except the first one during the first week of the term (see Class/Course Schedule), 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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 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy:

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Appendices (if applicable):

Course Schedule --- Attachment 1

LLOs – on SAKAI (Resources section)

Attachment 1

Wk	Lect No.	<u>ANPH 503 – 5cr.</u> Lecture [Panopto] topic and Quiz * <u>Each lecture is for 50min.</u> * <u>Quiz lasts for 20min.</u>	Date	Time	Instruct.	Lab. No. and Quiz	Laboratory topic and Guide pages * <u>Each Lab. Period is 2hr. [e.g. 1.30-3.30pm]</u> * <u>Each Lab. quiz lasts for 20 min.</u>
1	1 2 3	<u>RUMINANT:</u> Skin, Neck and thorax Abdomen Abdomen ZOOM – 12.30 -1.30 pm; Thursday, Jan 21 [mandatory]	Jan 18 to 22	1 hour “ “	Aire Aire Aire	2 h. periods 1 “ 2 “ [TA/ER/CH]	<u>RUMINANT:</u> Neck and Thorax “ “ [Goat Diss. <u>SLIDES – 1 to 14, and Goat Video on neck/thorax]</u>
2	4 5 6	Abdomen Abdomen (contd.); Pelvis and Male Reprod. organs “ “ “ “ “ (contd.) ZOOM – 12.30 -1.30 pm; Thursday, Jan 28	Jan 25 - 29	“ “ “	Aire Aire Aire	3 “ 4 “ <u>Lab Quiz 1 (10 points) [Labs 1-4] (Open Jan 29 – Feb 3)</u>	Abdomen (pp. 18-33) Abdomen (cont.) [Goat Diss., Slides – 15 to 30, and Goat Video on the abdomen]
3	7 8 9	Pelvis and Female Reprod. organs Mamma Mamma (contd.) ZOOM – 12.30 -1.30 pm; Thursday, Feb 4	Feb 1 - 5	“ “ “	Aire Aire Aire	5 “ 6 “	Pelvis (pp.33 - 46) Male and Female reprod. organs and tract (pp. 47 – 54) [Goat Diss., Slides – 31 to 40, and Goat Video on the pelvis]
4	10 11 12	Limbs Head: general structure <u>Quiz 1 [Lects. 1 to 10] (10 points) (Open Feb 12-17)</u> ZOOM – 12.30 -1.30 pm; Thursday, Feb 11.	Feb 8 - 12	“ “ “	Harrylal Rennie	7 “ 8 “	Thoracic limb (55 – 66) “ “ (contd.) [Goat Diss. Slides – 41 to 46, and Goat Video on the forelimb]
5	13 14 15	Head (contd.) – general structure Head (contd.) - neuroanatomy Head: neuroanatomy ZOOM – 12.30 -1.30 pm; Thursday, Feb 18	Feb 15 - 19	“ “ “	Rennie Rennie Rennie	9 “ 10 <u>Lab Quiz 2 (10 points) [Labs. 5-10] (Open Feb 19-24)</u>	Pelvic limb (pp. 67 - 77) Pelvic limb (contd.) [Goat Diss. Slides – 47 to 55, and Goat Video on the hindlimb]
6	16 17 18	<u>EQUINE:</u> Neck Thorax Abdomen ZOOM – 12.30-1.30 pm; Thursday, Feb 25	Feb 22 - 26	“ “ “	Aire Aire Aire	11 “ 12 “	Rum. head (pp. 78 – 87) Rum. Neuroanat. [Goat Diss. Slides – 56 to 68, and Goat Video on the abdomen]
7	19 20 21	Abdomen (contd.) Abdomen (contd.) Pelvis and male reprod. organs ZOOM -- 12.30 -1.30 pm; Thursday, Mar 4.	Mar 1 - 5	“ “ “	Aire Aire Aire	13 “ 14 “	<u>EQUINE</u> Neck (3-16) Neck and Thorax (pp. 17 – 31) [EQ. Cornell Slides: neck/thorax; video]

8		MID-TERM EXAMINATIONS	Mar 8 - 12 (Mar 10)	12.00 pm AST	TA/ER/C H	2.00pm AST	
9	22 23 24	Pelvis and female reprod. organs Forelimb- arthrology Forelimb – arthrology/myology ZOOM – 12.30-1.30 pm; Thursday, Mar 18	Mar 15 - 19	“ “ “	Aire Harrylal Harrylal	15 “ 16 “	Abdomen (pp. 37 -50) Abdomen (contd.) [EQ. Cornell Slides: abdomen; video]
10	25 26 27	Forelimb –myology/neurol Forelimb – neurol/angiology Hindlimb- arthrology/myology ZOOM – 12.30-1.30 pm; Thursday, Mar 25	Mar 12 - 26	“ “ “	Harrylal Harrylal Harrylal	17 “ 18 “	Pelvis (pp. 51 – 79) Pelvis + forelimb [EQ. Cornell Slides: pelvis and forelimb; video]
11	28 29 30	Hindlimb - myology/neurol Equine foot Equine foot (contd.) ZOOM – 12.30-1.30 pm; Thursday, April 1	Mar 29 – Apr 2	“ “ “	Harrylal Harrylal Harrylal	19 “ 20 “ Lab. Quiz 3 (10 points) [Labs 15 - 20] (Open Apr 2 - 7)	Forelimb (pp. 112-152) Forelimb (pp. 112-152) [EQ. Cornell Slides: forelimb; video]
12	31 32 33	HEAD – general structure of, HEAD – specific structures of, Quiz 2 [Lects. 22 to 32] (10 points) (Open Apr 9-14) ZOOM – 12.30-1.30 pm; Thursday, Apr 8	Apr 5 - 9	“ “ “	Rennie Rennie	21 “ 22 “	Hindlimb (pp. 80-111) Hindlimb (80-111 cotd.) [EQ. Cornell Slides: Hindlimb; video]
13	34 35 36	HEAD - neuroanatomy AVIAN : skeleton, muscles, pharynx “ gastroint. tract + resp. system ZOOM – 12.30-1.30 pm; Thursday, Apr 15	Apr 12 - 16	“ “ “	Rennie Aire Aire	23 “ 24 “	Head Head [EQ. Cornell Slides: Head; video]
14	37 38	“ respiratory system (contd.) + reprod. “ reprod. system, lymphatic and nervous systems ZOOM – general Thursday, Apr 22: 12.30-1.30 pm	Apr 19 - 23	“ “	Aire Aire	25 “ 26 “ Lab. QUIZ 4 (10 points) [Labs 21 - 26] (Open Apr. 23-28)	Fish dissection video Avian dissection video
15		Revision: ZOOM; Email and Forum sessions ZOOM – general; Thursday, Apr 29: 12.30-1.30 pm	Apr 26 - 30				
16		FINAL EXAMINATIONS	May 3 - 7 (May 5)	12.00pm AST	TA/RE/C H	2.00pm AST	



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY

VETERINARY PHARMACOLOGY I SYLLABUS (3 Credits)

ANPH 504 (Term 2)

Spring 2021

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 2.00 p.m. to 3.00 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 materials will be posted under Weekly Lessons of SAKAI site under each week module. 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 weekly modules of SAKAI.

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. 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.

IX. Course Learning 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).

X. Lesson Learning Outcomes

Detailed information of the lecture topics and lesson learning outcomes are enclosed as a table at the end of the syllabus.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

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

XII. Course Schedule

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

XIII. 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	4	Basic Pharmacology lectures	10
2	7	ANS lectures	7
Midterm Exam	8	Midterm exam (1-22 lectures)	25
3	11	covers lectures 23-29	8
4	13	covers lectures 30-36	7
FINAL	16 (May 3rd)	Covers lectures 37-43 (12%) + cumulative 26%	38
		Total	95%

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

Total – Assessments + Exams (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 is 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%

XIV. 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 Course Director. Additional Zoom office hours can be fixed by appointment through Email.

XV. 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.

XVI. Professionalism statement

Students at 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.

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

Students are expected to be available during the standard 8 AM-5 PM AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or ExamSoft) 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. Kamashi Kumar, (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 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.
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Appendices:

Pharmacology I lecture schedule – Spring 2021 (each lecture of 1 hour)

(Lecturer: Dr. Kamashi Kumar)

Week	Lecture topic	Assessment
1 (Jan. 18-22)	1. Introduction to Pharmacology 2. Pharmacokinetics - Routes of administration 3. Pharmacokinetics - Absorption	
2 (Jan. 25-29)	4. Pharmacokinetics – Distribution 5. Pharmacokinetics – Metabolism 6. Pharmacokinetics - Excretion/elimination 7. Quantitative kinetics	
3 (Feb. 1 - 5)	8. Pharmacodynamics 9. Pharmacodynamics 10. Pharmacodynamics	
4 (Feb. 8 - 12)	11. Autonomic nervous system 12. Adrenergic nervous system 13. Adrenergic nervous system	Assessment 1 (10 %) – Basic pharmacology (lectures 1-10)
5 (Feb. 15-19)	14. Adrenergic nervous system 15. Adrenergic nervous system 16. Cholinergic nervous system	

6 (Feb. 22-26)	<p>17. Cholinergic nervous system</p> <p>18. Cholinergic nervous system</p> <p>19. Pharmacophysiology of CNS - intro anaesthesia and analgesia</p>	
7 (Mar. 1-5)	<p>20. Muscle relaxants</p> <p>21. Sedatives and tranquilizers</p> <p>22. Sedatives and tranquillizers</p>	Assessment 2 (8%) – ANS (lectures 11- 18)
8 (Mar. 8-12)	<p>Mid-term week</p> <p>Pharm I midterm exam on 9th Mar. at 12.00 p.m. AST.</p>	
9 (Mar. 15-19)	<p>23. Control of pain</p> <p>24. Control of pain</p> <p>25. Injectable anaesthetics</p>	
10 (Mar. 22-26)	<p>26. Injectable anaesthetics</p> <p>27. Inhalant anaesthetics</p> <p>28. Local anaesthetics</p> <p>29. Local anaesthetics</p>	
11 (Mar. 29- Apr. 2 nd)	<p>30. Anaesthetics - Review</p> <p>31. Anticonvulsants</p> <p>32. Anticonvulsants</p>	Assessment 3 (8%) - covers lectures 23 to 29
12 (Apr. 5 – 9)	<p>33. Histamine & serotonin antagonists</p> <p>34. Histamine & serotonin antagonists</p> <p>35. Hemostatics & anticoagulants</p>	

13 (Apr. 12-16))	36. Hemostatics & anticoagulants 37. Anabolic steroids 38. NSAIDs	Assessment 4 (7%) covers lectures 31-36
14 (Apr. 19-23)	39. NSAIDs 40. Corticosteroids 41. Corticosteroids	
15 (Apr. 26-30)	42. Drugs modifying animal behaviour 43. Prescription writing 44. Review	
16 (May 3-7)	FINAL EXAM (<u>May 3rd at 12.00 p.m.</u>)	Covers lectures 37-43 (12%) + cumulative 26% Total – 38%

LECTURE LEVEL OUTCOMES

Lecture topic	Lecture Level Outcomes (Student Learning 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
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
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
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
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

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.
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 parameters. 4. Analyze the importance of therapeutic index of drug
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)
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.
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.

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.
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
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
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 drug suitable for the various species. 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
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
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.
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.

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
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
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
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.
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.
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.

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.
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PLO to CLO mapping

Course Learning Outcome	SGUSVM Program Learning Outcome
CLO1	A1, A5, C2, C9
CLO2	A1, A2, A3, A4, A5, A6, C2, C5, C9
CLO3	A5, A6, A11, C2, C3, C4, C6
CLO4	A5, A6, A7, C2, C7
CLO5	A1, A5, A6, C1, C2, C7
CLO6	A5, B7
CLO7	A5, A11, B7C7, C9

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

- 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.
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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
PHARMACOLOGY 2 SYLLABUS (3 credits)
ANPH505 TERM 3
Spring 2021

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I. Course Faculty and Staff Information

Course Director and lecturer for the course is Professor Arno Werners DVM, M.Ed, PhD, DECVPT (awerners@sgu.edu).

General office hours are scheduled weekly and a link will be made available on the Sakai Lessons tab for the course. Individual or small group office hours can be scheduled after contacting the course director (awerners@sgu.edu).

II. Course location

All lectures will be delivered/offered virtually. We will use the “Lessons” 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, assignments, formative assessments and the long notes.

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

I will use long notes and/or slides. Long 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. All lectures will be available via Panopto: the link is published on the Sakai site on the “Lessons” tab. 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. Accommodations

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 therapeutic decision making, food safety, 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.

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 Pharmacology 2 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 (long notes, lecture slides, and Panopto recordings) 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](#) (30 questions) 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 of the mark for the SAQs (20%), 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), Short Answer Questions (SAQs), Fill in the Banks (FITB) and Matching questions.

Assessment	% of total grade	Total # of points	Subjects
SAQs	20%	46	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%	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, an assignment and a peer evaluation. 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:

The long notes contain all the information you need to know. Each chapter starts with an introduction, followed by the description of the different drugs. Read the long notes strategically focussing on clinical relevance of the material presented.

Each chapter in the long notes has take away boxes with the most pertinent information of each drug or drug group. 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. To help you studying in this manner, drug lists are provided on Sakai for each chapter/group of drugs.

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 working on the SAQs and before coming to the office hours and are expected to 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 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.

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](#)

- 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
Cardiavascular pharmacology	CV 1. Identify the drug targets and mechanisms of action of drugs with an effect on the heart and/or the vasculature CV 2. Compare and contrast clinical effects of drugs with an effect the heart and or the vasculature CV 3. Evaluate the adverse effects and contraindications of drugs with effects on the heart and/or the vasculature CV 4. Create a treatment protocol for diseases of the heart and/or the vasculature	1, 2, 3, 4, 5
Ophthalmic pharmacology	OPTH 1. Clarify the pharmacokinetic characteristics required for treatment of ocular diseases OPTH 2. Identify the drug targets and mechanisms of action of drugs that are used to treat common ocular diseases OPTH 3. Evaluate the adverse effects and contraindications of drugs used to treat common ocular diseases OPTH 4. Create treatment protocols for common diseases in and around the eye	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	<p>ECT 1. Identify the drug targets and mechanisms of action of ectoparasitic drugs</p> <p>ECT 2. Compare and contrast the effects of different groups of ectoparasitic drugs</p> <p>ECT 3. Clarify different mechanisms of resistance against ectoparasitic drugs</p> <p>ECT 4. Evaluate the adverse effects and contraindications of ectoparasitic drugs</p> <p>ECT 5. Create a treatment protocol for different ectoparasitic infestations</p>	1, 2, 3, 4, 5
Antifungal drugs	<p>AF 1. Identify the drug targets and mechanisms of action of antifungal drugs</p> <p>AF 2. Compare and contrast the effects of antifungal drugs</p> <p>AF 3. Clarify different mechanisms of resistance against antifungal drug</p> <p>AF 4. Evaluate the adverse effects and contraindications of antifungal drugs</p> <p>AF 5. Create a treatment protocol for fungal infections</p>	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	Hours	Topics and materials covered	Scheduled activities	Time commitment
Week 1	3	Introduction of the therapeutic concept 1. Read chapter 1 2. Panopto short introduction video and short video on therapeutic concept	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Sunday 5pm AST	4 SAQs - 20 minutes Chapter 1 - 1 hours Panopto video's - 1 hour
Week 2	3	Introduction to antiinfectives and general principles of antimicrobial therapy 1. Read chapter 3 and chapter 4 paragraphs 4.1-4.5 2. Panopto short videos on the introduction of antiinfectives and antiinfective decision making	Zoom office hours on Wednesday September 2 nd from 2.30-3.30 AST Work on antibiotic assignment	Panopto videos - 45 minutes Chapter 3 and chapter 4 paragraphs 4.1-4.5 - 2 hours
Week 3	3	General introduction to antibiotics 1. Read chapter 4 paragraphs 4.6.1 - 4.6.6 2. Panopto short videos on PK/PD indices and bacteriostatic versus bacteriocidal antimicrobial drugs	Zoom office hours on Wednesday September 2 nd from 2.30-3.30 AST Work on antibiotic assignment	Panopto videos - 1 hour AB assignment - 1 hour Chapter 4 paragraph 4.6.1 - 4.6.6 - 1½ hour
Week 4	3	Antibiotics continued 1. Read chapter 4 paragraphs 4.6.7 - 4.6.10 2. Panopto short video on AB decision making 3. Panopto short video on considerations in lifespan	Zoom office hours on Wednesday 2.30-3.30pm AST Work on antibiotic assignment	Panopto videos - 1 hour AB assignment - 1 hour Chapter 4 paragraphs 4.6.7 - 4.6.10 - 1½ hour

Week	Hours	Topics and materials covered	Scheduled activities	Time commitment
Week 5	4	Antiinfectives - antibiotics and antiprotozoal drugs 1. Read chapter 4 paragraphs 4.6.11 and 4.6.12 and chapter 5 2. Panopto short video on antiprotozoal drugs	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Sunday 5pm AST	2 SAQs - 10 minutes Panopto video - 20 minutes AB assignment - 1½ hour Chapter 4 paragraphs 4.6.11 and 4.6.12 and chapter 5 - 2 hours
Week 6	3	Antiinfectives - antiviral and antifungal drugs 1. Read chapters 6 and 7 2. Panopto short videos on antiviral and antifungal drugs	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Sunday 5pm AST	4 SAQs - 20 minutes Panopto videos - 35 minutes Chapters 6 and 7 - 2 hours
Week 7	4	Antiinfectives - ectoparasiticides and anthelmintics 1. Read chapter 8 and 9 2. Panopto short videos on ectoparasiticides and anthelmintics	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	6 SAQs - 30 minutes Panopto video - 50 minutes Chapters 8 and 9 - 2 hours
Week 8		Midterm examination	Midterm examination Monday March 8th at 12pm AST	
Week 9	4	Cardiovascular drugs, diuretics and anticoagulant drugs 1. Read chapters 10, 11 and 12 2. Panopto short videos on vasodilators, antiarrhythmics, diuretics	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	6 SAQs - 30 minutes Panopto videos - 50 minutes Chapter 10, 11 and 12 - 3 hours
Week 10	3	Food safety 1. Read chapter 2 2. Panopto short video on food safety	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	4 SAQs - 20 minutes Panopto video - 2 hours Chapter 2 - 2 hours

Week	Hours	Topics and materials covered	Scheduled activities	Time commitment
Week 11	3	Respiratory drugs 1. Read chapter 13 2. Panopto: Short video on respiratory drugs	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	4 SAQs - 20 minutes Panopto video - 20 minutes Chapter 13 - 1¼ hour
Week 12	3	Anticancer drugs 1. Reach chapter 14 2. Panopto: Short video on anticancer drugs	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	4 SAQs - 20 minutes Panopto video - 20 minutes Chapter 14 - 1½ hour
Week 13	3	Ophthalmic pharmacology 1. Read chapter 15 2. Panopto short videos on ophthalmic pharmacology	Zoom office hours on Wednesday 2.30-3.30pm AST Antibiotic assignment and peer evaluation assignment due on Saturday 5pm AST Examsoft SAQs due date Thursday 5pm AST	4 SAQs - 20 minutes Chapter 15 - 1¼ hour Panopto video - 25 minutes
Week 14	3	Urogenital drugs 1. Read chapter 16 2. Panopto short videos on urogenital drugs	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	4 SAQs - 20 minutes Chapter 16 - 1¼ hour Panopto video - 20 minutes
Week 15	3	Gastro-intestinal drugs 1. Read chapter 17 2. Panopto short video on GI-drugs 1 and 2	Zoom office hours on Wednesday 2.30-3.30pm AST Examsoft SAQs: due date Thursday 5pm AST	4 SAQs - 20 minutes Chapter 17 - 1½ hour Panopto videos - 1 hour
Week 16		Final examination	Final examination Wednesday May 5th 12pm AST	

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?
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. Write a short layman's summary for the owner, where you describe the choices you have made; treatment duration and potential adverse effects. *Tip: let your parents or your neighbour read the text; if they understand what you have written than you are okay!*
6. Give 2-3 references for the information you presented. References can only include peer reviewed articles or books, should be relevant and the latest information on the subject. References only have to be mentioned at the end of the document and not throughout the text; the reference list should be in APA Style (<https://apastyle.apa.org/style-grammar-guidelines/references/examples>)
7. The **total** word count should not exceed 750 words. The references are included in the total word count.
8. Required format: A4 page, style Arial 12pt with 1.2 line spacing. See example below the rubric for reference.

	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				

Treatment of a Caucasian male with an uncomplicated *Vibrio parahaemolyticus* infection

Miles Davis, Taylor Swift, Nina Simone and Justin Timberlake

Therapeutic goal: The therapeutic goal is to clear the man from this infection and restore normal function of the GI-tract.

Therapeutic target: The therapeutic target is *Vibrio parahaemolyticus*, a Gram-negative bacterium that causes gastro-intestinal upsets in seahorses.

Treatment protocol: Based on the current susceptibility data for this particular bacterium, there are a number of antibiotics that can be used to treat this man. Our first choice is cefotaxime, a parenteral third generation cephalosporin with excellent efficacy against *Vibrio parahaemolyticus*. One of the disadvantages of this drug is that it needs to be given parenterally. Other concerns are that although cephalosporins are generally considered to be very safe antibiotics, they can cause allergy in individuals and can cause gastro-intestinal upsets mainly when high doses are used.

Second and third choices: Our second choice is tetracycline. Although another cephalosporin is available, cross resistance does occur. The advantage of tetracycline is that it can be administered orally ensuring client compliance. Adverse effects are minimal and include GI-upsets. Third choice is ciprofloxacin, a fluoroquinolone that can be administered orally as well. These compounds should only be used when efficacy is established via culture and sensitivity testing. Similarly to the other choices, fluoroquinolones are relatively safe antibiotics and can cause GI-upsets.

Summary for the owner: Your spouse is suffering from an infection that is quite common after eating raw oysters. We have chosen to inject your spouse in his arm muscle with an antibiotic that will cure his illness. He will have to come back to the practice tomorrow and on Wednesday to complete the treatment. Although adverse effects of this injection is rare, the muscle can become a bit sore. We will check your spouse again tomorrow; by then most of the clinical signs will have resolved.

References:

1. Han, F., Walker, R. D., Janes, M. E., Prinyawiwatkul, W. & Ge, B. Antimicrobial Susceptibilities of *Vibrio parahaemolyticus* and *Vibrio vulnificus* Isolates from Louisiana Gulf and Retail Raw Oysters. *Appl Environ Microb* **73**, 7096-7098 (2007). Doi: 10.1128/aem.01116-07
2. Yang, Y. *et al.* Prevalence, Antibiotic Susceptibility and Diversity of *Vibrio parahaemolyticus* Isolates in Seafood from South China. *Front Microbiol* **8**, 2566 (2017). Doi: 10.3389/fmicb.2017.02566

Table 7: Peer assessment instructions and document

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

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 Student showed no initiative, missed several meetings and did not adhere to the deadlines set by the group	Moderate Student showed some initiative, missed some meetings and missed the deadline set by the group	Major Student showed initiative, attended all meetings and adhered to the deadlines set by the group	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

Grenada, West Indies

Anatomy, Physiology and Pharmacology Department

Anatomy 1 (5 Credits)

ANPH 506 Term 1

Spring 2021

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:** Open office hours meetings will be held on Thursdays during Zoon sessions. If required, additional appointments can be made with prior notice. Please send us an e-mail and we will respond accordingly. Providing additional office hours depends on the availability of time and the matter to be discussed.

Contact information of the faculty members is 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. Narindra Roopnarain, DVM, Instructor. - nroopnar@sgu.edu

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

d. Staff members:

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

Department Secretary - Mrs. Cherry Ann Lumpriss

II. Course location

The course will be delivered online via Distance learning Methods.

III. Prerequisite and/or co-requisite courses

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, the DOS office will prescribe the courses in term 1)

IV. Required resources

- a. Lecture presentation Available on Sakai (Panopto), 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. Colorado State University, Virtual anatomy Website/Software – Full version available to students on SAKAI
- d. 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 / Fifth Edition, Saunders/ Elsevier pub.
- b. The University of Minnesota, College of Veterinary Medicine Anatomy Website.
- c. Learn Anatomy in 3D – www.vin.com (Free registration for Veterinary students)
- d. EasyAnatomy – 3D Anatomy Software (Optional Purchase)

Note - Links to b, c, and d 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. Information can be found at mycampus.sgu.edu/group/saas

VII. Other requirements

A. General Guidelines

- a. Students **must carry ID cards** for all Zoom Meetings/online classrooms.
- 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 can contact the course director for Individual Issues. Any matter Involving more than 15 students or more / the entire class will be resolved by communication via the Forum tool on SAKAI and the class representatives.
- e. 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 course director/course Faculty or the IT department.

B. Attendance, Resources and Examinations

- a. **Zoom Sessions** - Observe the following while attending the zoom sessions.
 - I. Time - Tuesdays and Thursdays - 2.00 pm to 3.00 pm (Grenada time). If the session continues after an hour, students are free to leave the meeting If they have other commitments.
 - II. Use only SGU email Id for joining the zoom sessions, this Is Important for recording attendance and participation.
 - III. While in the meeting, the web camera should be turned on. Keep your microphones muted unless you are talking in the meeting. Do not post unnecessary messages in the chat window.
 - IV. **Zoom sessions on Tuesdays are mandatory** (10 points total). We use zoom attendance logs to estimate the participation of the students. Repeated late arrivals and early departures from the Zoom sessions without permission will be considered nonattendance.

- V. **Zoom sessions on Thursdays are optional and require prior registration.** Students with questions posted on forums will be given priority during the available 1-hour meeting time.
- b. **Course Forum tool** - It is required that students use the appropriate forums for posting their questions. We will reply to the forum questions, and if needed, the topic will be taken for discussion in the zoom meeting.
- c. Recorded zoom sessions with necessary edits will be posted on the course website. Personal video and audio recording of the zoom sessions is not permitted.
- d. **Both lecture and laboratory components of this course constitute the material from which examination questions shall be drawn.** Some topics will be learned exclusively during the laboratory sessions (Video demonstrations) but the lecture examination will contain questions on those topics, **e.g. Study of the Musculoskeletal system.** (Details will be posted in the syllabus for each examination/quiz).
- e. **All the exams conducted on Examsoft are sequestered,** therefore the student will not be permitted to see the questions after the examination is over. **Appropriate Examsoft reports will be available online. The feedback for the quizzes conducted using Sakai will be available for a limited time, i.e., 12 hours.** Copying, printing, and distribution of the quiz and exam questions are strictly prohibited.
- f. **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.**
- g. Students must not expose themselves to any situation that lends itself even to a suspicion of cheating. A student found cheating will be reported to the Dean of Student's office.

VIII. Course rationale

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.

Anatomy 1 (ANPH 506) is a 5-credit course, comprising about 51 lectures and 26 (2-hour) laboratory sessions. Traditional methodologies of didactic lectures and laboratory sessions have been adopted to accomplish the objectives of the course. However, in the online format, the course includes recorded lectures and video demonstrations of the prosected specimen of the dog and/or cat cadavers during the laboratory sessions, along with Virtual Animal (Canine) Anatomy program.

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. 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.

Anatomy 1 does not only build 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.

Please note that students are encouraged to acquire more information by referring to the textbooks, laboratory manual, and other resources provided on SAKAI.

IX. Course Learning Outcomes (CLO).

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

1. demonstrate a thorough understanding of the basic animal tissue; relations between the cells, tissue, and organs that form the organ systems.

2. 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. demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as topography of the organ systems and understand the differences between the dog and cat. (Systemic, topographic, and comparative anatomy)
4. 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)

X. Lesson Learning 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>	1, 2

	<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, 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 the 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>	2,3, 4

	<p>LLO B8 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 B9 Recognize various ligaments of the vertebral column.</p> <p>LLO B10 Understand the basic organization of the muscles of the vertebral column e.g., epaxial and hypaxial muscle systems.</p> <p>LLO B11 Classify the joints of the forelimb, hindlimb, and vertebral column; and know the specific movements present in each joint.</p>	
<p>17, 18 and 20</p> <p>Thoracic Cavity and Respiratory Apparatus</p>	<p>LLO C1 Describe the visceral spaces, list the primary body cavities and their content.</p> <p>LLO C2 Recognize the structures located within and outside of the visceral space of the neck.</p> <p>LLO C3 Describe the course of the esophagus and its relationship with the trachea.</p> <p>LLO C4 List parts of the respiratory apparatus in the canine and feline species.</p> <p>LLO C5 Describe the structure, function, and topography of the parts of the respiratory apparatus i.e., Nose, nasal cavity, larynx, trachea, lungs, and thoracic wall.</p> <p>LLO C6 Describe the structure of the paranasal sinuses and their relationship with the nasal cavity and carnassial teeth.</p> <p>LLO C7 Describe the structure and recognize the relationship between the thoracic cavity, pleurae, pleural cavity, and the thoracic wall.</p> <p>LLO C8 Describe the structure and function of the mediastinum and diaphragm.</p> <p>LLO C9 Discuss the pattern of lobation and lobulation of the canine and feline lungs. Recognize the clinical lung field.</p>	<p>2,3, 4</p>

	<p>LLO C10 Describe the structure and function of the diaphragm. List the important structures that pass through the diaphragm.</p> <p>LLO C11 Underline the differences in the respiratory system and thoracic wall of the dog and cat.</p>	
<p>21 – 26</p> <p>Cardiovascular System and Lymphatic system</p>	<p>LLO D1 Explain the surface anatomy, internal structure, blood and nerve supply, and function of the heart.</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>	2,3, 4
<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>	2,3, 4

	<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>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 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>2,3, 4</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> <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 the 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>2,3, 4</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>	
<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> <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>	2,3, 4
<p>51</p> <p>The Endocrine System</p>	<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
<p>1</p> <p>Introduction</p> <p>The Appendicular skeleton – Forelimb and Hindlimb</p>	<p>LLO I1 Osteology – Osteological terms</p> <p>LLO I2 Understand the general terminologies used for common features of the bones.</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>N/A</p> <p>1,2,</p>
<p>2 – 5</p> <p>The Muscular System – forelimb and Hindlimb</p> <p>(Myology – Forelimb, and Hindlimb)</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> <p>a. lateral and medial muscles of the scapula and shoulder.</p>	<p>1,2,3, 4,</p>

	<ul style="list-style-type: none"> 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>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>	<p>1,2,3, 4,</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>	
<p>8</p> <p>Joints of the forelimb, hindlimb and vertebral column</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> <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>	1,2,3, 4,
<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 	1,2,3, 4

	<p>b. Deep Vessels and Nerves of the Thoracic Wall</p> <p>LLO K3 Identify and describe the following structures in the thoracic cavity of the dog and cat.</p> <p>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> <p>LLO K4 Identify and describe the Heart, pericardium, and associated structures in the dog and cat.</p> <p>LLO K5 Recognize the major differences between the dog and cat in the thoracic cavity and its organs.</p>	
<p>13 – 14</p> <p>Blood vessels and Nerves of the Thoracic limb.</p>	<p>LLO L1 Describe and identify the major blood vessels of the thoracic limb and blood circulation in the thoracic limb.</p> <p>LLO L2 Describe the major areas supplied and drained by following blood vessels and identify them.</p> <p>a. Axillary artery and branches b. Brachial artery and branches c. Median artery and branches d. Arteries of the forearm and paw</p> <p>LLO L3 Describe the innervation of the forelimb in general.</p> <p>LLO L4 Identify the brachial plexus and describe the nerves that form the brachial plexus, and all the nerves derived from the brachial plexus.</p> <p>a. Nerves of the scapular region and arm b. Nerves of the forearm and paw</p>	<p>1,2,3, 4</p>

	LLO L5	Describe the differences in the vasculature and innervation of the forelimb in the dog and cat.	
15 – 16 The abdomen and the pelvis - Digestive system and Urinary system	LLO E1 LLO E2 LLO E3 LLO E4 LLO E5 LLO E6 LLO E7	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. Identify the liver and its lobes, biliary system, gall bladder, pancreas, and spleen. Identify the blood vessels and nerves of the abdominal cavity, describe their architecture, including visceral and parietal branches of the abdominal aorta.	1,2,3, 4
17 – 18 The pelvis and the reproductive organs	LLO F1 LLO F2 LLO F3 LLO F4 LLO F5	Identify parts of the male and female reproductive system in the pelvic cavity of the dog and cat. Describe the topography of the organs of the male and female reproductive systems. Identify the external and internal iliac arteries and their branches responsible for blood supply to the pelvic viscera. Describe the general pattern of innervation and identify the nerves in the pelvic cavity and pelvic wall. Identify the mammae.	1,2,3, 4

	LLO F6	Describe the differences in the male and female reproductive organs of the dog and cat.	
19 – 20 Blood vessels and Nerves of the Hindlimb	LLO L6 LLO L7 LLO L8 LLO L9 LLO L10 LLO L11	Describe the major blood vessels of the pelvic limb/hindlimb and blood circulation in the pelvic limb. Describe the major areas supplied and drained by following blood vessels and identify them. a. The femoral artery and its branches b. The popliteal artery and its branches c. The saphenous artery and its branches d. The cranial tibial artery and its branches Describe the innervation of the hindlimb in general. Identify all the nerves derived from the lumbosacral plexus, describe the formation of the lumbosacral plexus. Identify the following nerves in the hindlimb e. The femoral, ischiatic/sciatic, and obturator nerves. f. Nerves of the gluteal region and thigh. g. Nerves of the crus and pes. Describe the differences in the vasculature and innervation of the hindlimb in the dog and cat.	1,2,3, 4
21 – 26 The Head of the dog	LLO M1	Identify and describe the bones of the skull and their important features in the dog and cat. 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	1,2,3, 4

	<p>LLO M2 Identify and describe the following structures in the head of the dog.</p> <ol 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> <ol style="list-style-type: none"> a. Brain, <ol style="list-style-type: none"> i. Cerebrum-Surface Structures ii. Cerebellum iii. Brain Stem-Surface Structures iv. Diencephalon v. Mesencephalon vi. Ventral Metencephalon vii. Myelencephalon viii. Telencephalon b. The spinal cord, spinal nerve, and associated structures <p>LLO M5 List the major structural differences in the brain of the dog and cat.</p>	
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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.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	Program Level Outcome (SVM)
<p>At the end of this course</p> <p>CLO 1. Students should demonstrate a thorough understanding of the basic animal tissue; relations between the cells, tissue, and organs that form the organ systems.</p> <p>CLO 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.</p> <p>CLO 3. Students should demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as topography of the organ systems and understand the differences between the dog and cat. (<i>Combination of Systemic, topographic, and Comparative anatomy</i>)</p> <p>CLO 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. (<i>Clinical/Applied Anatomy</i>)</p>	<p>A. Core Medical Knowledge</p> <p>A PLO 01. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.</p> <p>A PLO 06. Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.</p>

XII. Course Schedule

Available as a separate document - Anatomy 1 ANPH 506 Weekly Schedule Spring 2021.
([Link - Anatomy 1 Weekly Schedule Spring 2021.docx](#))

XIII. Grading and assessment policy, and grading rubrics

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 (Grenada time)	Points
1	Quiz # 1 - Lecture (Examssoft)	Week #5 Tuesday, Feb 16, 2021 , at 2.00 pm. (Examssoft)	20
2	Quiz # 2 - Laboratory (Sakai)	Week #5 Due on Tuesday, Feb 16, 2021 , on or before 11.55 pm	20
3	Midterm Lecture Examination (Examssoft)	(Week # 8) Lecture exam Wednesday, March 10, 2021 , at 2.00 pm	60
4	Quiz # 3 - Laboratory (Sakai)	(Week # 8) Due on Wednesday, March 10, 2021 , on or before 11.55 pm	20
5	Quiz # 4 - Lecture (Examssoft)	Week # 12 Tuesday, April 06, 2021 , on or before 11.55 pm.	20
6	Quiz # 5 - Laboratory (Sakai)	Week # 12 Due on Tuesday, April 06, 2021 , on or before 11.55 pm.	20
7	Final Lecture Examination (Examssoft)	(Week # 16) Lecture Exam Friday, May 07, 2021 , at 2.00 pm	60
8	Quiz # 6 - Laboratory (Sakai)	(Week # 16) Due on Friday, May 07, 2021 , on or before 11.55 pm.	20
	Required (Tuesday) Zoom Meetings	Throughout the term (Gained points will be added at the end of the term)	10
			250

Note –

Laboratory Quizzes will be delivered through the SAKAI tests and quizzes section. lecture quizzes and Examinations will be delivered through Examssoft/Exemplify and are the proctored examinations.

Midterm and Final lecture Exams are Cumulative – Quizzes Either lab or lecture are not cumulative (refer to the syllabus for each exam/quiz when posted)

XIV. Recommended study strategies

Be familiar with the topic by reading the lab manual and lecture slides before watching the lecture recording or lab videos. In Anatomy, multiple revisions of the material are necessary to get a good hold on the material. Students are advised to combine laboratory and lecture components for studying the material. The lab videos, virtual anatomy program are the best available visual aids you can use in an online setting.

XV. Instructor's expectations of the student

We expect all the students in this class to get actively involved in the learning process. Feel free to communicate and ask for help whenever needed.

For more information refer to Point [VII. Other Requirements](#)

XVI. Professionalism statement

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

XVII. Attendance/Participation Policy (Also refer to the student manual)

Zoom Meetings/Online Classroom - The zoom meetings on Tuesdays are mandatory and have a total of 10 points assigned for attendance and participation. Depending upon the number of meetings conducted throughout the term, credit for each meeting will be calculated. Grades for mandatory zoom meetings will be added to the grade book at the end of the term.

Students are expected to be available during the standard 8.00 am to -5.00 pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

For more information refer to Point [VII. Other Requirements](#)

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

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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) 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. [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 (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 the 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

DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY

VETERINARY PHYSIOLOGY I SYLLABUS (5 Credits)

ANPH512 (Term 1)

Spring 2021

I. Course Faculty and Staff Information

Course Director/Instructor

Dr. Hector Zerpa Gonzalez

Prof. Vet. Physiology, SVM

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

Tel: 444 - 4175 ext 3852

email: hzerpago@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 1:30 pm AST. Please check the exception in week 12 (class schedule).

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: hfonsecl@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 1:30 pm AST. Please check the exception in week 12 (class schedule).

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. Sjaastad, K. Hove & O. Sand, 3rd Edition; Scandinavian Veterinary Press, 2016

- An excellent and 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.

- An excellent book for a visual approach of basic physiology: Color Atlas of Physiology by S. Silbernagel & A. Despopoulos, 6th Edt, Thieme Publishers, N.Y., 2009.

An excellent human medical physiology textbook contains very educative images to summarize some of the body's essential functions—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. Accommodation

- a. Students 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 the 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 demonstrate professional behavior, including communication and teamwork skills.

IX. Course-level outcomes

The Physiology I course's goal 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 professional behavior and team-working skills.

Course-level Learning Outcomes

Upon successful completion of both Veterinary Physiology courses (ANPH 512), students should be able to:

CLO 1. Nerve and muscle-basic concepts: 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 applications: apply the acquired knowledge of CLO 1 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

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

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

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

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

CLO 10. Respiratory-clinical applications: apply the acquired knowledge of the CLO 9 to basic clinical scenarios, correlating normal with abnormal functions and clinical signs.

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

CLO 12. Renal-clinical applications: 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 presented in every lecture recording.

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 four (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 integrating 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 (MCQ: single best answer) and fill in blanks. **Examination questions come from material covered in**

lecture recordings, handouts, and any other sources the instructors indicate. All rules and regulations concerning examinations, including EXAMSOFT, are detailed in the SGU Student manual.

2. Group Assignments

Group assignments will be given at the beginning of each Zoom session. These assignments could include short clinical scenarios and or analysis of essential biomedical concepts, which serve to apply and reinforce the taught material and stimulate students to collaborate professionally. The whole class will attend six (6) mandatory synchronous Zoom sessions (see the course schedule and attendance policy) in the term. The class will be divided by the course director into groups prior to the first session. Each group will be in a *Zoom Breakout Room* for 30-50 minutes and 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. After that, groups will be randomly called upon to present their analysis 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 selected in each assignment presentation. Because assignments differ significantly 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 weekly checklist instructions. It is not expected that the students should invest more than the two (2) hours provided during the session to prepare the written report. Every group must present at least once during the assignment sessions and pass the oral presentation. Every group must submit and pass six (6) written reports. If a group passes, each member will receive 25 points; if a group fails, no points will be given to any member. Please check section XVII regarding individual attendance policy.

Assessment table: one MCQ is equivalent to one point.

Assessments	Content. Lecture recording numbers	Date	Points
Quiz 1 (ExamSoft)	1-12	Feb 12: 1:30 pm AST	25
Midterm (ExamSoft)	1-28	March 12: 12:00 pm (noon) AST	60
Quiz 2 (Sakai)	29-49	Open: April 16 at 6:00 pm AST. Due: April 20 at 6:00 pm AST.	25
Final (ExamSoft)	1-68	May 10 at 12:00 pm (noon) AST	65
Group Assignments (Zoom and Sakai)		See the class schedule	25
TOTAL POINTS			200

Letter Grade	Percentage
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	1- 59.49

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. I expect my class to revise the lecture recordings weekly. Make sure that the material is understood. If a concept is not fully understood, please do not wait; reach out and express your concerns to the course director. A good communication flow between the class and the course director is essential to online teaching engagement.
3. for exam preparation, self-challenge is crucial: explain the learned material to yourself first without referring to your handouts and notes. Then work in small online groups and repeat this process. Vocalization is an essential element to check and improve your 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 towards SGU faculty and staff and 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 be available during the standard 8 am-5 pm AST school day to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. Students' lack of attendance, engagement, and participation may adversely affect their academic status 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 without a valid excuse in one (1) of the six (6) mandatory Zoom sessions will imply losing the points allocated to this activity for the individual student. The Zoom sessions (synchronous: 1:30 pm, AST) schedule was designed considering most of the students' time zones. 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 restrictions to attend these synchronous activities, please contact the course director during the first week of activities.

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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.

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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 improving 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 Spring 2021. Dr. Hector Zerpa (HZ). Dr. Hugo Hernández Fonseca (HHF).

ANPH512 / Vet. Physiology I / Schedule – Spring 2021

Week/# lecture hours	Lecture recording #	Module 1: Nerve & Muscle (HZ)
1 18-22 January 4 lecture hours	1	Introduction
	2	Membrane properties/membrane transport
	3	Resting membrane potential
	4	Electrical signals in neurons
2 25-28 January 4 lecture hours	5	Cell to cell signaling in neurons
	6	Autonomic nervous system
	7	Autonomic nervous system
	8	Somatic and autonomic reflexes
3 01-05 February 4 lecture hours	9	Muscle
	10	Muscle
	11	Integration: skeletal muscle diseases
	12	Group Assignment #1 (Mandatory Zoom meeting: Friday Feb 05 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
Week	Lecture recording #	Module 2: Cardiovascular (HZ)
4 08-12 February 5 lecture hours	13	Introduction and basic anatomy of the heart
	14	Excitation of the heart
	15	Control of cardiac activity/electrocardiography
	16	Electrocardiography
	17	ExamSoft Quiz 1: 25 points / Lectures 1-12 (ExamSoft. Friday Feb 12 at 1:30 pm AST) Duration: ~40 min
5 15-19 February 5 lecture hours	18	Cardiac cycle
	19	Heart sounds and murmurs
	20	Basic pathophysiology of heart arrhythmias
	21	Integration: heart failure
	22	Integration: heart failure
6 22-26 February 6 lecture hours	23	Blood Flow and pressure
	24	Blood Flow and pressure
	25	Microcirculation and lymphatic
	26	Regulation of blood flow and pressure/ Integration: exercise
	27	Integration: pathophysiology of hypertension and hypotension
	28	Group Assignment #2 (Mandatory Zoom meeting: Friday Feb 26 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
Week	Lecture recording #	Module 3: Hematology (HHF)
7 01-05 March 5 lecture hours	29	Introduction
	30	Erythron
	31	Erythron
	32	Erythron
	33	Erythron
8 08-12 March	Midterm week	ANPH512, Physiology 1. Midterm: March 12 at 12:00 pm (noon) AST: 60 Points / Lecture recordings 1-28. Duration: ~90 min

9 15-19 March 5 lecture hours	34	Blood groups
	35	Blood groups
	36	Hemostasis
	37	Hemostasis
	38	Group Assignment #3 (Mandatory Zoom meeting: Friday March 19 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
Week	Lecture recording #	Module 4: Gastrointestinal (HZ)
10 22-26 March 6 lecture hours	39	General Principles
	40	General Principles
	41	Cephalic Phase
	42	Gastric Phase
	43	Pancreas & Liver and Bile.
	44	Group Assignment #4 (Mandatory Zoom meeting: Friday March 26 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
11 29-Mar 2-Apr 5 lecture hours	45	Small Intestinal Phase
	46	Large Intestinal Phase
	47	Ruminants
	48	Ruminants
	49	Hindgut Fermenters
		Holiday in Grenada: Good Friday
Week	Lecture recording #	Module 5: Respiration (HZ)
12 05-09 April 5 lecture hours	50	Ventilation of the lungs
	51	Ventilation of the lungs
	52	Pulmonary blood flow
	53	Gas exchange in the lung
	54	Gas transport in blood
13 12-16 April 4 lecture hours	55	Gas transport in blood
	56	Regulation of the respiratory function
	57	Non respiratory functions of the respiratory system
	58	Group Assignment #5 (Mandatory Zoom meeting: Friday April 16 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
	Sakai	Quiz 2: 25 Points/Lectures 29-49 Open date: April, 16 at 6:00 pm. Due date: April, 20 at 6:00 pm. Duration: ~40 min.
Week	Lecture recording #	Module 6: Renal (HZ)
14 19-23 April 6 lecture hours	59	Introduction to renal physiology
	60	Function of the glomerulus and tubular system
	61	Function of the glomerulus and tubular system
	62	Tubular handling of important substances
	63	Tubular handling of important substances
	64	Group Assignment #6 (Mandatory Zoom meeting: Friday April 23 at 1:30 pm AST). The mandatory group assignments are design to last two (2) clock hours = 1 lecture hour.
15 26-30 April 4 lecture hours	65	Regulation of fluid volume and osmolality
	66	Kidney functions and laboratory parameters: Kidney lab.
	67	Kidney functions and laboratory parameters: Acid/Base Balance
	68	Renal Pathophysiology

16 03-07 May 17 10-14 May	Final exams week ANPH512, Physiology 1. Final May 10 at 12:00 pm (noon) AST: 65 Points / Lecture recordings 1-68
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ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY
VETERINARY PHYSIOLOGY II SYLLABUS (3 Credits)
ANPH513 (Term 2)
Spring 2021

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: HFonseca1@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 12:00 pm (noon) AST.

Instructor

Dr. Hector Zerpa Gonzalez

Prof. Vet. Physiology, SVM

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

Tel: 444 - 4175 ext 3852

email: hzerpago@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 12:00 pm (noon) AST.

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 and have completed ANPH512.

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.
- Pathways to Pregnancy and Parturition by P.L. Senger, 3rd edition, Current Concepts Inc., Washington State University, 2012.
- 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. Accommodations

- a. Students 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 an appendix at the end of 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 4 modular examinations as listed in the table below: Quiz 1, Midterm, Quiz 2, and a Final. The midterm and final exams 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 (MCQ: single best answer), and fill-in blanks. Examination questions come from material covered in lecture recordings, handouts, and any other

sources the instructors indicate. All rules and regulations concerning examinations including EXAMSOFT are detailed in the SGU Student manual.

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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 the course schedule and attendance policy) 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 weekly checklist instructions.

It is not expected that the students should invest more than the two (2) hours provided during the session to prepare the written report. Every group must present (oral) at least once during the assignment session and pass the oral presentation. Every group must submit and pass four (4) written reports. If a group passes, each member will receive 15 points, if a group fails no points will be given to any member. Please check section XVII regarding individual attendance policy.

Grading scale

Assessment table: one question is equivalent to one point.

The assessment schedule and grading scheme are as follows:

Assessments	Content. Lecture recording numbers	Date	Points
Quiz 1 (Sakai)	Lectures 1-8	Open Date: Tuesday Feb. 02, Due Date: Tuesday, Feb. 09	20
Midterm (ExamSoft)	Lectures 1-20	Mar. 15 at 12 noon. (AST)	40
Quiz 2 (Sakai)	Lectures 21-32	Open Date: Tuesday Apr. 13 Due Date: Monday Apr. 20	20
Final (ExamSoft)	Lectures 1-45	May 10 at 12 noon. (AST)	70
Group Assignments (Zoom)		See the schedule	15
Total Points			165

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
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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!*

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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.

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

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

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- successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
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 - 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 Spring 2021. Dr. Hugo Hernandez Fonseca (HHF) & Dr. Hector Zerpa Gonzalez (HZG).
- Appendix 2: Lesson Level Outcomes Spring 2021

LECTURE SCHEDULE AND CONTENT

ANPH513 / Vet. Physiology II / Schedule – Spring 2021		
Weeks	Lecture Recording #	Module 1. Metabolism (HHF)
1 18-22 January 4 lecture hours	1	Introduction to Course & Major Metabolic Pathways: Carbohydrates
	2	Major Metabolic Pathways: Lipids
	3	Major Metabolic Pathways: Lipids & Proteins
	4	Ruminant Metabolism: Review
2 25-29 January 4 lecture hours	5	Whole Body Metabolism: Absorptive & Post-Absorptive Phases
	6	Fasting & Starvation
	7	Liver Function & Bilirubin
	8	Thermoregulation
Weeks	Lecture Recording #	Module 2. Endocrinology (HHF)
3 01-05 February 3 lecture hours		<i>Quiz: Lectures 1-8 (20 Points) Open date: Tuesday February, 02 at 6:00 pm. Due date: Tuesday February, 09 at 6:00 pm. Duration: ~30 min</i>
	9	General Endocrine Mechanisms
	10	Hypothalamic-Pituitary Axis
	11 Assignment 1	<i>Group Assignment. Metabolism (Mandatory Zoom meeting: Friday Feb. 05 at 12:00 noon AST)</i>
4 08-12 February 3 lecture hours	12	Pancreas
	13	Pancreas: Insulin Functions
	14	Thyroid Gland
5	15	Thyroid Gland: T3 & T4

15-19 February 3 lecture hours	16	Growth Hormone
	17	Adrenal Cortex: Glucocorticoids
6 22-26 February 3 lecture hours	18	Adrenal Cortex: Glucocorticoids & Mineralocorticoids
	19	Calcium-Phosphate Homeostasis
	20 Assignment 2	<i>Group Assignment. Endocrinology (Mandatory Zoom meeting: Friday Feb. 26 at 12:00 noon AST)</i>
		Module 3. Reproduction (HHF)
7 01-05 March 3 lecture hours	21	Male Reproduction
	22	Male Reproduction
	23	General Concepts of Female Reproductive Cycle
8 08-12 March No lectures		Midterms Week
9 15-19 March 3 lecture hours		Monday Mar. 15 (12 noon AST). MIDTERM ANPH 513: Physiology II / Lectures 1-20 (40 pts)
	24	General Concepts of Female Reproductive Cycle
	25	General Concepts of Female Reproductive Cycle
	26	General Concepts of Pregnancy and Parturition
10	27	Lactation
	28	Reproduction in the Sow and Cow

22-26 March 4 lecture hours	29	Reproduction in the Mare
	30 Assignment 3	<i>Group Assignment. Reproduction (Mandatory Zoom meeting: Friday Mar. 26 at 12:00 noon AST)</i>
11 29 March 02 April 3 lecture hours	31	Reproduction in the Bitch
	32	Reproduction in the Queen
		Module 4. Neurophysiology (HZG)
	33	Revision (Nervous System anatomy, physiology I)
12 05-09 April 3 lecture hours	34	Pain
	35	Pain
	36	Proprioception
13 12-16 April 3 lecture hours	37	Touch & Thermoreception
		<i>Quiz: Lectures 21-32 (20 Points) Open date: Tuesday Apr. 13 at 6:00 pm. Due date: Tuesday Apr. 20 at 6:00 pm. Duration: ~30 min</i>
	38	Hearing
	39	Balance and Vision
14 19-23 April 4 lecture hours	40	Vision
	41	Conscious Motor Control
	42	Principals of Neurological Lesion Localization
	43	Principals of Neurological Lesion Localization
15 26-30 April	44	Principals of Neurological Lesion Localization
	45 Assignment 4	<i>Group Assignment. Neurophysiology (Mandatory Zoom meeting: Friday Nov 27 at 12:00 noon AST)</i>

2 hour lecture		
16 03-07 May No lectures		Final Exam Week
17 10-14 May		Monday May 10 (12 noon AST). FINAL EXAM ANPH 513: Physiology II /Lectures 1-41 (70 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
Spring 2021

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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 “Lessons” 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 “Lessons” 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. 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 (15%), the [plant toxicity assignment](#) (15%), [the peer evaluation](#) (5%) and the mark for the final examination (55%).

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), Short Answer Questions (SAQs), Fill in the Blank (FITB) and Matching questions.

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	15%	24 (1 points per question)	See detailed course schedule (appendix table 3)
Peer evaluation	5%		1 evaluation per group (appendix table 7)
Final examination	55%	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 as-

signment. 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 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 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.

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.
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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	Topics and materials covered	Scheduled activities	Time commitment
Week 1	Introduction documents 1. Introductory lecture 2. Explanation clinical toxicology assignment+rubric 3. Explanation plant toxicology assignment+rubric		Panopto - 1 hour Clinical toxicology assignment - 1 hour
Week 2	1. Panopto lecture: General toxic principles 2. Working on clinical toxicology assignment	Monday 1.30-2.30pm AST Zoom office hour	Panopto - 1 hour Clinical toxicology assignment - 1 hour
Week 3	1. Panopto lecture: Regulatory versus clinical toxicology 2. 1st assessment	Examsoft SAQs: due date Saturday 5pm AST 2 General toxic principles 2 Regulatory versus clinical toxicology	Panopto - 1 hour SAQs - 20 minutes
Week 4	1. Panopto lecture: Toxicokinetics 2. Working on clinical toxicology assignment	Monday 1.30-2.30pm AST Zoom office hour	Panopto - 1 hour Clinical toxicology assignment - 1 hour
Week 5	1. Panopto lecture: Intro to clinical toxicology 2. 2nd assessment	Examsoft SAQs: due date Saturday 5pm AST 2 Toxicokinetics 2 Intro to clinical toxicology	Panopto - 1 hour SAQs - 20 minutes
Week 6	1. Panopto lecture: Genotoxicity, carcinogenicity and mutagenicity 2. Working on clinical toxicology assignment	Monday 1.30-2.30pm AST Zoom office hour	Panopto - 1 hour Clinical toxicology assignment - 1 hour
Week 7	1. Panopto lecture: Introduction to plant toxicology 2. 3rd assessment	Examsoft SAQs: due date Saturday 5pm AST 2 Introduction to plant toxicology 2 Genotoxicity, carcinogenicity and mutagenicity	Panopto - 1 hour SAQs - 20 minutes

Week	Topics and materials covered	Scheduled activities	Time commitment
Week 8	1. Panopto lecture: Introduction to cardiovascular toxicology 2. Working on plant toxicology assignment	Monday 1.30-2.30pm AST Zoom office hour Saturday 5pm AST: due date for clinical toxicology assignment	Panopto - 1 hour Plant toxicology assignment - 1 hour
Week 9	1. Panopto lecture: Introduction to gastrointestinal toxicology 2. 4th assessment	Examsoft SAQs: due date Saturday 5pm AST 2 Intro to CVS toxicology 2 Intro to GI toxicology	Panopto - 1 hour SAQs - 20 minutes
Week 10	1. Panopto lecture: Introduction to renal toxicology 2. Working on plant toxicology assignment	Monday 1.30-2.30 pm AST Zoom office hour	Panopto - 1 hour Plant toxicology assignment - 1 hour
Week 11	1. Panopto lecture: introduction to neurotoxicity 2. 5th assessment	Examsoft SAQs: due date Saturday 5pm AST 2 Intro to renal toxicology 2 Intro to CNS toxicology	Panopto - 1 hour SAQs - 20 minutes
Week 12	1. Panopto lecture: Introduction to liver toxicity 2. Working on plant toxicology assignment	Monday 1.30-2.30pm AST Zoom office hour	Panopto - 1 hour Plant toxicology assignment - 1 hour
Week 13	1. Panopto lecture: Introduction to mycotoxins 2. 6th assessment	Examsoft SAQs: due date Saturday 5 pm AST 2. Intro to liver toxicology 2 Intro to mycotoxins	Panopto - 1 hour SAQs - 20 minutes
Week 14	1. Top 10 plant toxins 2. Working on plant toxicology assignment	Monday November 16th 12.30-1.30pm AST Zoom office hour	Panopto - 1 hour Plant toxicology assignment - 1 hour
Week 15	1. Top 10 plant toxins 2. Working on plant toxicology assignment	Saturday 5pm AST: due date for plant toxicology assignment	Panopto - 1 hour Plant toxicology assignment - 1 hour
Week 16	Final examination	Friday April 30th 12.00pm and 2pm AST Final examination	

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	Bromethalin intoxication	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	Cholecalciferol	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	Buffo 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	Concerta® (methylphenidate)	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. Write a short layman's summary for the owner, describing what is found, how the intoxication is treated and what the prognosis is. *Tip: let your parents or your neighbour read the text; if they understand what you have written than you are okay!*
9. 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. References only have to be mentioned at the end of the document and not throughout the text; the reference list should be in APA Style (<https://apastyle.apa.org/style-grammar-guidelines/references/examples>)
10. The **total** word count should not exceed 500 words. The references are included in the total word count.
11. Required format: A4 page, style Arial 12pt with 1.2 line spacing. See example below the rubric for reference.

	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	
Presents the most prominent clinical signs	Some clinical signs are mentioned. Prominent clinical signs are missing. Answer is too long or too short	Most clinical signs are mentioned. Answer is too short or too 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 is too long or too short	Most lab findings are mentioned. Answer too short or too 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 too lengthy or too 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 too lengthy or too short	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	
Briefly describes the prognosis for an animal with this intoxication	Answer too short or too lengthy; no explanation of the reason behind the prognosis	Some aspects of the prognosis are missing. Explanation too short or too lengthy	Concise and precise explanation of the prognosis for this animal	

	Insufficient	Developing	Exceptional	Points total
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.	
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				

Baclofen toxicosis

Miles Davis, Taylor Swift, Nina Simone and Justin Timberlake

Body system affected: Baclofen is a centrally acting striated muscle relaxant

Clinical signs: The typical clinical signs include severe CNS depression, respiratory arrest, miotic pupils, reduced oculovestibular and palpebral reflexes, absent menace response

Typical lab findings: CBC and biochemistry are usually within normal limits

What tests are available:

1. Stable-side: None are available
2. Laboratory tests: HPLC for baclofen

Treatment protocol:

1. General treatment: Intravenous fluid therapy with 0.9 per cent NaCl, diazepam for sedation and treatment of seizures, intravenous infusion of a lipid emulsion.
2. Specific treatment: no antidote is available

Prognosis: The prognosis depends on the amount of baclofen pills ingested and the time between ingestion and presentation to the veterinarian. Higher doses typically have worse outcome and prognosis. Early treatment with ILE usually leads to a good prognosis.

Monitoring: Monitor for clinical signs of CNS depression, including pupillary reflexes for 24 hours.

Summary: Your dog Senna presented after ingesting a number of your prescription medication. The compound in the pills relaxes Senna's muscles and in high concentrations leads to sedation and lethargy. Fortunately we have been able to stabilise Senna after treatment with a compound that binds the drug. The prognosis for Senna is good and if all goes well we believe we can send her back home with you tomorrow afternoon.

References:

1. Edwards, P., Shihab, N. & Scott, H. W. Treatment of a case of feline baclofen toxicosis with intravenous lipid therapy. *Vet Rec Case Reports* **2**, e000059 (2014). DOI: 10.1136/vetreccr-2014-000059
2. Fox, C. M. & Daly, M. L. Successful treatment of severe baclofen toxicosis initially refractory to conventional treatment. *Clin Case Reports* **5**, 44–50 (2017). DOI: 10.1002/ccr3.736

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).
2. Compare and contrast the clinical signs and the lab findings of the different plants. Here we want you to interpret the hallmark clinical signs and lab findings 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/lab findings. Based on the relevant clinical signs and lab findings, what conclusion can be drawn?
3. Describe the causative toxic phytoconstituents and the mechanism of intoxication for the different plants.
4. Provide and justify a treatment plan for each plant. Explain when there is no treatment.
5. Compare and contrast the prognosis of intoxication with each of the plants.
6. Describe your conclusions in lay-terms as if you are briefing an owner.
7. 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	
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	

	Insufficient	Developing	Exceptional	Points
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 plan (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	
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 and logical outline of the assignment	Not adhered to the maximum word count. Chaotic presentation of the findings		Adhered to the maximum word count. Logical presentation of the findings	

	Insufficient	Developing	Exceptional	Points
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, Zoom) 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 Student showed no initiative, missed several meetings and did not adhere to the deadlines set by the group	Moderate Student showed some initiative, missed some meetings and missed the deadline set by the group	Major Student showed initiative, attended all meetings and adhered to the deadlines set by the group	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

Grenada, West Indies

Large Animal Medicine and Surgery Department

Veterinary Physical Diagnosis II (1 credit)

LAMS 501 Term 3

Spring 2021

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 **12noon – 1pm** 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.

- II. **Course Locations:** Online location – (**LAMS 501 course website** on MyCourses SAKAI) using Lessons, Panopto, Zoom, Assignment, test and Quizzes and Forums.
- 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**

- 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 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

	<p>10. Prioritize diagnostic testing for a stimulated clinical situation</p> <p>11. Practice formulating a differential diagnosis, assessment and prioritized plan for the stimulated case</p> <p>12. Critically examine and reflect on your encounter to improve future performance</p>
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
<p>1. Discuss and illustrate an advanced and complete physical exam on equine and bovine patients</p>	<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>
<p>2. Identify and differentiate between normal and abnormal findings on physical examinations especially processes related to gastrointestinal and musculoskeletal exams</p>	<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>
<p>3. Determine an animals age by examining dentition</p>	<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>4. Safely illustrate handling of large animals</p>	<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>
<p>5. Accurately perform medical maths calculations</p>	<p>C. Core Clinical Competencies (Skills)</p>

	5. Analyse, design, and execute appropriate plans for medical case management.
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 (18 th to 22 nd January)	Faculty	Date and Time / Lecture hours
Introductory Lecture: Syllabus and Module level outcomes review (Mandatory Attendance)	Dr. Momoh	Live Zoom Session Thursday January 21st 12noon – 1pm AST
Medical Math Lecture and Assignment opened on SAKAI (Mandatory Attendance)	Dr. Momoh	Live Zoom Session Friday January 22nd 12noon – 1pm AST
Week 2 & 3 (25 th January to 4 th February)		
Bovine and Equine Physical Exam Lab	Dr. Momoh	Modules on SAKAI
Bovine and Equine Physical Exam lab assignment (due on Saturday February 5th at 11:00 PM Grenadian time)		
Sakai Quiz (unlimited time and only 1 submission)		

Week 4 & 5 (8th to 19th February)		
Bovine Simulation Lab Bovine Simulation lab assignment (due on Saturday February 20th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Modules on SAKAI
Week 6 & 7 (22nd February to 5th March)		
Clinical Reasoning Lecture (Feb 23 rd & March 2 nd) (Mandatory Attendance in one of the live sessions) Equine Musculoskeletal Lab Equine Musculoskeletal lab assignment (due on Saturday March 6th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Panopto Recording and Live Zoom Session Tuesday February 23rd 11:00am – 1pm AST Repeat 1 – 3:00pm AST Repeat March 2nd 12-2pm AST Modules on SAKAI
Week 8 (8th to 12th March)		
Midterms (No Midterms for LAMS 501)		
Week 9 (15th to 19th March)		
Paper Case Introductory Lecture (Recorded lecture on Panopto) Paper case meetings (Students and Facilitators – Case history taking) Tuesday and Thursday March 16th and 18th (Mandatory Attendance)	Dr. Momoh Clinic Facilitators (LAMS Faculty)	Panopto Recording Sunday 14th March Live Zoom Sessions Tuesday and Thursday March 16th and 18th 12noon – 1pm AST
Week 10 & 11 (22nd March to 2nd April)		
Bovine Gastrointestinal Lab Deadline for Medical Math Submission (Saturday April 3rd 11:00pm) Bovine Gastrointestinal lab assignment (due on Saturday April 3rd at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh	Modules on SAKAI

Week 12 & 13 (5th to 16th April)		
Equine Gastrointestinal (Simulation) Lab Paper case Discharge Discussion Meeting Wednesday April 14th and Thursday April 15th (Mandatory Attendance) Equine Gastrointestinal (Simulation) lab assignment (due on Saturday April 17th at 11:00 PM Grenadian time) Sakai Quiz (unlimited time and only 1 submission)	Dr. Momoh Clinic Facilitators (LAMS Faculty)	Modules on SAKAI Live Zoom Sessions Wednesday April 14th and Thursday April 15th 12noon – 1pm AST
Week 14 (16th November to 20th November)		
Paper Case Discharge on Forums (due on Friday 23rd at 11:00 PM Grenadian time)		SAKAI
Week 15		
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	15%
Bovine Gastrointestinal Lab Assignment	10 %

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 **March 14th**.

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 / Participation policy** (Please refer to the student manual page if applicable)

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 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.

Large Animal Medicine and Surgery Department

Veterinary Clinical Orientation (1 credit)

LAMS 502 Term 1

Spring 2021

I. Course Faculty and Staff Information

Kerri Nigito, DVM, CPH, MPH, DABVP (Food Animal Practice)

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:

Zainab Momoh, DVM, MVPH

zmomoh@sgu.edu

Heidi Janicke, BVM, PhD, Dipl. ECVS, MRCVS, FHEA

hjanicke@sgu.edu

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. 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-Learning 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 Learning Outcomes

LECTURE/MODULE	LEARNING OUTCOMES
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.</p>

	<p>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) 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.	B. Core Professional Attributes PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
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.

XII. Course Schedule

Date/Time	Topic	Faculty	Assignment/Assessment	Lecture hours
Week 2 (January 25-31)				
Live Zoom Session Tuesday, January 26 th 12:00pm-2:00pm AST	Course Introduction History & Signalment	Dr. Kalasi / Dr. Nigito	Mandatory Attendance	2
Week 3 & 4 (February 1 -14)				
Panopto session	Behavior lecture	Dr. Bain	Sakai Quiz Due: February 7th by 11:00pm AST	3
LIVE Zoom Session Tuesday, February 9 th 12:00pm-2:00pm AST	Small Animal Physical Exam	Dr. Kalasi	Due: February 14th by 11:00pm AST	
Week 5-6 (February 15-28)				
Panopto session	Intro to medical records and clinical reasoning	Dr. Kalasi	Sakai Quiz Due: February 21st by 11:00pm AST	3
Panopto session	Biosecurity	Dr. Louison	Sakai Quiz Due: February 28th by 11:00pm AST	
Week 7 (February 22 – 28)				
Small animal PE video assignment		Due: March 21st by 11:00pm AST Video Formative Assignment		
Midterms Week 8				
Week 9-11 (March 15 – April 4)				

4 Hour Self-Directed Study	Equine Breeds, Terminology, Physical Exam Review	Dr. Janicke & Dr. Karasek	Mandatory Attendance Submit Module Assessment ONE time before Zoom Session	3
LARF LIVE Zoom session Tuesday, March 23 rd 12:00pm-1:00pm AST	Equine Physical Exam Module		Sakai Quiz (unlimited time and submissions) Due: April 4th by 11:00pm AST	
Week 12-14 (April 5 - 25)				
4 Hour Self-Directed Study	FA Breeds, Terminology, Physical Exam Review	Dr. Nigito	Mandatory Attendance Submit Module Assessment ONE time before Zoom Session	3
LARF LIVE Zoom session Tuesday, April 13 th 12:00pm-1:00pm AST	Bovine Physical Exam Module		Sakai Quiz (unlimited time and submissions) Due: April 25th 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 and professionalism.

Evaluation	Weight	Grade
Small Animal Physical Exam Module Assessment	18%	
Small Animal Physical Exam Video Assignment	5%	P/F
Small Animal Behavior Assessment	2%	5pts
Equine Physical Exam Module Assessment	25%	20pts
Bovine Physical Exam Module Assessment	25%	20pts
Medical Records and Biosecurity Assessment	5%	10pts
Professionalism Evaluation 1 st half of the term	5%	16pts

Professionalism Evaluation 2 nd half of the term	5%	16pts
Total	100%	

10% of the class grade will comprise of attendance in mandatory Zoom sessions, engagement of the course material and professionalism (see rubric in Appendix).

5% of the class grade will comprise of Medical records and Biosecurity assessment.

20% of the class grade will be based on engagement in the content and performance on the small animal physical exam module assessment.

5% of the class grade will be based on the successful completion and submission of the small animal physical exam video assignment.

25% of the class grade will be based on engagement in the content and performance on the equine physical exam module assessment.

25% 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 remediations 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

10% of the class grade will comprise of attendance in mandatory Zoom sessions, engagement of the course material and professionalism (see Appendix A).

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

Commented [KK1]: I think the easiest way would be to take attendance during the zoom sessions and the monitoring if they view or watch other sessions that are not LIVE, what do you think?

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 and assessed using the professionalism rubric (See Appendix A). 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 ; kkalasi@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. Copyright policy

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Appendix:

Appendix A: Professionalism Grading Rubric

Criteria	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Punctuality	Student is on time for all Zoom sessions and/or communicates with the course director within 2 hours of the session if more than 10 minutes late	Student is more than 10 minutes late and communicates with course director on the same day as the session	Student is more than 10 minutes late and communicates with course director but not on the same day as the session	Student is not on time for Zoom sessions and does not communicate at any time with the course director
Attendance	Student attends all mandatory zoom sessions for the entire duration of the session and/or communicates with the course director within 2 hours of the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and communicates with course director on the same day as the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and communicates with course director but not on the same day as the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and does not communicate at any time with the course director
Engagement	Student completes module checklists and submits assessments/assignments on time and/or communicates with the course director PRIOR to deadlines with any	Student submitted module checklist, assignment, assessment after the deadline and/or not submitted and student communicated with course director the same day of	Module checklist, assignment, and or assessment was not submitted, and student communicated with course director more than 24 hours after assignment deadlines with	Student does not complete module checklists, turn in assignments and/or assessment on time and did not communicate with the course director at any time.

	technical/medical/personal issues.	assignment/assessment deadlines with any technical/medical/personal issues	any technical/medical/personal issues	
Communication	Student always communicates in a professional tone and timely manner.	Communication is mostly professional and timely with some minor areas of improvement needed.	Communication is generally professional in tone, but often untimely and major improvement is needed.	Student does not communicate in a professional tone and/or timely manner.
Total (16 points)				



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LAMS Department

INTRODUCTION TO CLINICAL MEDICINE (4 credits)

LAMS 503 (Term 4)

Spring Term (2021)

I. Course Faculty and Staff Information

Course Director: Dr. Dr. Talia Guttin DVM DACVIM, Assistant Professor

tguttin@sgu.edu

Office Hours: Zoom Office Hours on Fridays at 1 pm AST. Otherwise by appointment.

Dr. Anne Corrigan MS DVM MS DACVIM (SAIM), Professor, acorrigan@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. Inga Karasek, BSc. DVM, CVA, Assistant Professor ikarasek1@sgu.edu

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

Dr. Zainab Momoh, DVM Clinical Instructor zmomoh@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. This course will be delivered on Sakai MyCourses using asynchronous Panopto lectures and posted PDF's. The use of the Lessons tool will detail what lectures and material are to be reviewed each week. Weekly Forums will be used to generate discussion on the material. There will be optional Zoom sessions (office hours) weekly for students to interact with faculty.

III. Prerequisite and/or co-requisite courses

Current 4th term SVM Student

IV. Required resources

Laptop with functional microphone, and camera. Lecturers will use PDF notes and/or PowerPoint slides available on Sakai. For certain 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. 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 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 diagnoses lists 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. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXIV after the Course Schedule.

XI. Course Schedule

Attached at the end of this document.

Weekly time commitments:

Week number	Material	Time Commitment
1	Clinical reasoning, Small animal and large animal cases -CBC/Chem/UA, Introduction to fluid therapy	4 hours : 3 lecture hours 1 Sakai assignment (LA cases) 1 Zoom office hours (optional)
2	Introduction to fluid therapy-part 2 LA and EQ cases fluid therapy, fluid types	5 hours: 4 lecture hours 1 Sakai assignment (bloodwork) 1 Zoom office hours (optional)
3	Small animal fluid therapy-cases Complex fluid therapy. Sick animal nutrition for small animals and LA/EQ.	5 hours: 5 lecture hours 1 Zoom office hours (optional)
4	SA, LA and EQ theriogenology	4 hours: 3 lecture hours 1 Sakai assignment (fluid therapy)

		1 Zoom office hours (optional)
5	Dermatology introduction, small animal dermatology/cases. EQ and LA dermatology	4 hours: 4 lecture hours 1 Zoom office hours (optional)
6	Intro to neurology, localizing/neuroimaging and small animal neurology cases. EQ neurology.	5 hours: 4 lecture hours 1 Sakai assignment (neurology) 1 Zoom office hours (optional)
7	GI physiology review for LA and SA. Small animal and large animal cases. Intro to EQ GI.	5 hours: 5 lecture hours 1 Zoom office hours (optional)
8	MIDTERM WEEK	
9	Intro to oncology Intro to lameness SA & EQ Large animal emergency- environmental concerns	4 hours: 3 lecture hours 1 Sakai assignment (equine GI) 1 Zoom office hours (optional)
10	Introduction to endocrine, common endocrine diseases and equine endocrine	3 hours: 3 lecture hours 1 Zoom office hours (optional)
11	Introduction into respiratory, SA respiratory cases, EQ and LA respiratory cases	5 hours: 4 lecture hours 1 Sakai assignment (endocrine online) 1 Zoom office hours (optional)
12	Introduction to cardiology, diagnostics for cardiology, SA cardio cases and EQ cardio cases. ECCM	5 hours: 5 lecture hours 1 Zoom office hours (optional)
13	Liver physiology review. SA liver cases, LA and EQ liver cases. Biosafety and biosecurity.	5 hours: 5 lecture hours 1 Zoom office hours (optional)
14	Renal physiology- comparative SA vs. LA. Azotemia and urolithiasis. PU/PD. SA behavior and Backyard livestock behavior.	5 hours: 5 lecture hours 1 Zoom office hours (optional)
15	Introduction to production animal medicine. Small ruminant, beef, dairy and poultry/pork production	5 hours: 5 lecture hours 1 Zoom office hours (optional)
16 & 17	FINALS WEEKS	

XII. 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 6 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

Assessments:

Midterm exam 35 pts-Friday, March 12th, 2021

Final exam 35 points- Monday, May 10th, 2021

Sakai Assignments 30 pts (5 pt. each)*

1. Large animal cases-CBC/Chem/UA Dr. Byers (in place of Panopto lecture)- Saturday, January 23rd
2. Bloodwork-Saturday, January 30th
3. Fluid therapy-Saturday, February 13th
4. Neurology-Saturday, February 27th
5. Equine GI-Saturday, March 20th
6. Endocrine Online Resource Assignment- Saturday, April 3rd

**All due by 11 pm AST*

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

XIII. Recommended study strategies

Zoom office hours are optional but strongly recommended. These are a once weekly Zoom session where the material is discussed, and students can pose questions on the material from that week. These have been exceedingly helpful to the students who have attended in the past.

Additional recommendations:

- Reading up on material covered in that weeks 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.

XIV. 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.

XV. 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. Please exhibit professional behavior when communicating with your peers and with the faculty involved in this course.

XVI. Attendance/Participation Policy

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (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) 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.

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Prior to Exam Day

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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.
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 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

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Appendices - Course Schedule:

Week Number	LECTURE TOPIC	Instructor
1 <i>Jan 18-22</i>	Course Orientation: Clinical Reasoning	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-As <i>independent assignment NOT lecture</i>	Byers
2 <i>Jan 25-29</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>Feb 1-5</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>Feb 8-12</i>	LA theriogenology intro	Khan
4	EQ theriogenology intro	Khan
4	SA theriogenology intro	Khan
5 <i>Feb 15-19</i>	Dermatology Introduction	Paterson
5	Dermatology Diagnostics/SA cases	Paterson
5	EQ Dermatology introduction	Werners-Butler
5	FA Dermatology introduction	Nigito
6 <i>Feb 22-26</i>	Intro to Neurology-comparative	Narak
6	Localizing/Neuroimaging intra-species	Narak
6	SA Neuro cases	Narak
6	Equine Neuro	Karasek
7 <i>Mar 1-5</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>Mar 8-12</i>	Midterm Week Midterm: Friday, March 12th.	
9 <i>Mar 15-19</i>	Intro to Oncology	Bechtel

9	Introduction to lameness SA & EQ	Janicke
9	Large Animal Emergency- situational/environmental concerns	Karasek
10 <i>Mar 22-26</i>	Introduction to Endocrine	Corrigan
10	Common Endocrine Diseases	Corrigan
10	Common Endocrine/Equine endocrine	Corrigan
10	Endocrine assignment (1 lecture hour)	
11 <i>Mar 29-Apr 2</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>Apr 5-9</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>Apr 12-16</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>Apr 19-23</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>Apr 26-30</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	Finals Weeks Final: Monday, May 10th	

Optional Office Hours via ZOOM – Fridays 12 pm- 1 pm various faculty

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 C1, C2, C3, C4, C5, C6, C9	Abc d h f
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



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Large Animal Medicine and Surgery

Equine Internal Medicine (3 credits)

LAMS 505 TERM 6

Spring 2021

I. Course Faculty and Staff Information

Dr. Catherine Werners-Butler DVM, PhD, DECEIM Professor (Chair
Large Animal Medicine & Surgery)

Email: cwerners@sgu.edu

Office hours scheduled through Zoom

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

Email: lwis1@sgu.edu

Office hours scheduled through Zoom

Collaborating Faculty:

Dr. Arno Werners DVM, PhD, DECVPT Professor

Email: awerners@sgu.edu

Staff members:

Ms Frances Emmanuel SVM Administrative Assistant
Email: FEmmanuel@sgu.edu
Ext: 3109

Ms Ruth Thornhill SVM Secretary
Email: RThornhill@sgu.edu
Ext: 3474

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. Accommodation guidelines

- 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 Learning 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 Learning Outcomes

See Appendix XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

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).

Week	Activity/Topics	Format	Time on Task (hrs)
Week 1 (Jan 11 th -15 th)	Course intro + PE review G-I anatomy and diagnostic tools review Esophagus disorders	recorded	1 1 1
Week 2 (Jan 18 th -22 nd)	Stomach disorders Inflammatory Bowel Disease S-I obstruction Zoom office hour (Jan 19 th 12-1pm)	recorded	1 1 1
Week 3 (Jan 25 th -29 th)	L-I obstruction Diarrhea (acute / chronic) Colic cases	recorded	1 1 1
Week 4 (Feb 1 st -5 th)	Clinical pharmacology (2 hours) Preparation time for the quiz	recorded	2 1
Week 5 (Feb 8 th -12 th)	Respiratory conditions 1-3 Zoom office hour (Feb 10 th 12-1pm)	recorded	3

Week 6 (Feb 15 th -19 th)	Fluid therapy Nutrition Endotoxemia	recorded	1 1 1
Week 7 (Feb 22-26 th)	Endocrine Laminitis Diagnostics	recorded	1 1 1
Week 8 (March 1-5 th)	Neurologic conditions 1-3 Zoom office hour March 3 rd 1:30-2:30pm	recorded	3
Week 9 (March 8-12 th)	Cardiology 1+2 Assignment preparation time	recorded	2 1
Week 10 (March 15-19 th)	Muscle conditions 1+2 Liver	recorded	2 1
Week 11 (March 22-27 th)	Liver Urinary 1+2 Zoom office hour March 24 th 12-1pm	recorded	1 2
Week 12 (March 29-April 2 nd)	Neonatology 1-3	recorded	3
Week 13 (April 5-9 th)	Hemolymphatic conditions 1+2 Assignment time Zoom office hour March 24 th 12-1pm	recorded	2 1
Week 14 (April 12-16 th)	Biosecurity concepts Infectious diseases 1+2	recorded	1 2
Week 15 (April 19-23 rd)	Dermatologic cases Ophthalmology TBA Zoom Q&A session	recorded	1 1 1
Week 16 (Finals)	LAMS 545 (April 26 th) LAMS 505 (April 28 th) ANPH 520 (April 30 th)		
Week 17 (Finals)	LAMS 515 (May 3 rd) SAMS 524 (May 7 th)		
Week 18 (May 10-14 th)	CAPPS		

XIII. Grading and assessment policy, and grading rubrics

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: February 5th – due date February 12th

Assignments: open date January 30th – due date April 16th

Final exam: April 28th (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

Prepare for the lectures by looking at the reading resources and listening to the Panopto recordings. Reach out to the course directors as soon as possible if you experience difficulties with the material.

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.

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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:
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XXI. Appendices

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 #
1. Physical Exam	1 -Know how to perform a thorough equine physical examination in a safe way	2
	2 -Identify the locations for intramuscular injection and venipuncture in the horse	5
	3 - Identify the specific differences in an equine PE compared to a small animal PE	2
2. Equine Diagnostics	1 -Interpret abnormalities in routine equine laboratory tests	3
	2 - Differentiate cases of acute versus chronic	3

	inflammatory diseases based on laboratory data	
	3- Describe the basic principles of immunodiagnostic testing including selecting the appropriate test and knowing its limitations	3
	4- Interpret basic immunodiagnostic and pathogen specific test results in the horse	3
3. Review equine gastro intestinal anatomy and additional diagnostic test options related to equine gastro intestinal disease (colic)	<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 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>	<p>1</p> <p>2</p> <p>2</p> <p>3</p>

<p>4. Fluid Therapy</p>	<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>
<p>5. Equine nutrition</p>	<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</p>	<p>1,2</p> <p>5</p>

	<p>(fiber)) and the vitamin + mineral dynamics.</p> <p>2- Revise a food label and formulate a correct ration for the 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>	1,2

	<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>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>1</p> <p>2,3</p> <p>4,5</p> <p>2,3,4</p> <p>5</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>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 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</p>	<p>2,3</p> <p>3,4</p> <p>2</p> <p>5</p>

	<p>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>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>1</p> <p>2</p> <p>3</p> <p>5</p> <p>6</p>
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	<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>12. Equine Neurology</p>	<p>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,</p>	<p>1</p> <p>2,3</p>

	<p>equine polyneuropathy and equine grass sickness.</p> <p>2-Formulate an appropriate diagnostic testing plan and differential list for a horse presenting with clinical signs of neurologic disease</p> <p>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)</p> <p>4-Diagnose cases of common equine neurologic diseases based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results</p> <p>5-Develop a therapeutic and management plan for horses with aforementioned diseases</p> <p>6-Discuss the prognosis of horses suffering from the aforementioned diseases</p>	<p>2</p> <p>2,3</p> <p>5</p> <p>6</p>
13. Endotoxemia	1-Integrate knowledge of the pathophysiology of endotoxaemia and drug	1,5

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

	presentations of laminitis including pain management	
	5- Discuss the prognosis of laminitic horses	6
	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 presenting for suspect liver dysfunction	2
	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	4,5

	horses with aforementioned diseases	
	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 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 urinary tract disease	6
19. Muscle	1-Explain the etiology and pathophysiology of common	1

	equine skeletal muscle diseases	
	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	1

	equine hemolympathic disorders	
	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	5

management of cases of infectious disease	
2- Explain the etiology and pathophysiology of common equine infectious diseases including equine infectious anemia, equine piroplasmiasis, 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	5

	horses with aforementioned diseases	
	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 habronomiasis, onchocerciasis and common ocular neoplasia including squamous cell carcinoma, sarcoids and melanoma based on the presenting complaints, relevant historical information,	2,3

	physical exam findings and diagnostic test results	
	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	4,5

25. Neonatology	management plan for horses with the aforementioned diseases	
	6- Discuss the prognosis of horses suffering from respiratory disease	6
	7- Develop a vaccination program to combat common respiratory pathogens	5
	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	2,3,4

	complaints, relevant historical information, physical exam findings and diagnostic test results	
	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 Outcomes Mapped to Program Level Outcomes (PLOs):

Course Learning Outcome	SGUSVM Program Learning Outcome
Explain the etiology and pathophysiology for common equine medical diseases for all the major organ systems	<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 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>Utilize presenting complaints, history, physical exam findings, and clinical signs to create differential lists and to select appropriate diagnostic tests in the equine patient</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>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 7 Evaluate and analyze normal versus abnormal animal behavior.</p> <p>PLO 8 Apply principles of animal welfare and articulate relevant</p>

	<p>legislation, including notifiable diseases.</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>Interpret diagnostic test results in the equine patient</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>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>Evaluate emergency cases and develop a plan for resolution of these issues</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 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>Formulate an appropriate treatment regimen for the equine patient including fluid therapy and preventative care.</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 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>



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT

LIVESTOCK MEDICINE II SYLLABUS (3 credits)

LAMS 515 TERM 6

SPRING 2021

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: Online and Cassia First Floor

Office Hours: Zoom (see schedule or on request) and Forums

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 the Sakai course for resources being used.

III. Prerequisite and/or co-requisite courses

Current 6th 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. 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

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 learning 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 learning outcomes

See Appendix 1

XI. Alignment of course learning outcomes with program learning outcomes

See Appendix 2

XII. Course schedule

See Appendix 3

XIII. Grading and assessment policy, and grading rubrics

Grades for this course will be based on review questions, assignments, and a comprehensive final.

- The review questions are from the Term 5 Livestock Medicine I course. There is 1 per week, open book, and located in the Sakai Lessons for that week. This question MUST be answered in order to access the material for the week.
- The assignments are untimed but must be completed by the due date.
- Final exam material will focus on the multisystemic diseases.

Zoom cases/office hours and topic study questions are optional.

Topics and points are as follows: Due dates are posted in the Schedule (Appendix 3), and on the Sakai Lessons and Calendar.

Assessment	Points
Weekly review question	15
Review Part 1	5
Review Part 2	5
Review Part 3	5
Parasitology – Internal and External	5
Vaccine plan	5
Swine	10
Respiratory	10
Hemolymphatics and Liver	10
Neurology	10
Endocrine and mammary gland	10
Final Exam	45
Total	135

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 highly recommended to look at the weekly plan at the start of each week in the Sakai Lessons. A tasks checklist and links to all the materials for the week will be provided. Reminders and due dates will be listed at the start of each week, in the calendar, and in a weekly email announcement sent to your SGU email address.

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 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 Sakai Forum, email me, ask a classmate, or check reputable sources on the internet. Reading comments after the end of term about lack of understanding of livestock terminology is too late to help you out.

You must notify the instructor BEFORE the due date to request an extension for an assignment. Approved extensions include clinical experience rotations or valid reasons as posted in the student manual.

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/participation policy

Students are expected to be available during the standard 8am-5pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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

You must notify the instructor BEFORE the due date to request an extension for an assignment. Approved extensions include clinical experience rotations or valid reasons as posted in the student manual.

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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) 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.

Appendix 1: Topics and Lecture Learning Objectives

Introduction and Species Reviews

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.
4. Compare and contrast beef and dairy cattle attributes, behavior, breeds, BCS, and production cycle.
5. Compare and contrast the small ruminants species and breeds for behavior, handling, BCS, and production cycles.
6. Compare and contrast camelids and ruminants behavior, handling, BCS, husbandry, and herd health management.

Parasites

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.

Therapeutics

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.

Euthanasia

1. Review the AVMA and AAEP guidelines for euthanasia.
2. Determine the appropriate euthanasia method based on the situation, species, personnel, disposal, and safety.

Vaccines

1. Review the common vaccines, usage, label and extra label use.
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.

Swine

1. Explain the terminology and identification systems used in the swine industry.
2. Describe the production phase and disease risks in each.
3. Describe the reproduction cycle, normal and abnormal parturition, and causes for piglets losses.
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 noninfectious and infectious swine diseases.
6. Explain which swine diseases are zoonotic or reportable.

Respiratory Tract

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.
5. Explain the development and clinical signs of pulmonary hypertension in cattle and caudal vena cava thrombosis.
6. Explain the etiology, risk factors, clinical signs for atypical interstitial pneumonia, verminous pneumonia and tuberculosis.

Hemolymphatics

1. Describe the causes and clinical signs seen with acute and chronic anemia in livestock species.
2. Explain the etiology, transmission, clinical signs, treatment, and control methods for infectious and non-infectious causes of hemolytic anemia.
3. Identify the etiology, clinical signs, diagnosis, and management of anthrax in livestock.
4. Compare and contrast sporadic lymphosarcoma from enzootic LSA (BLV) in cattle and LSA in small ruminants and camelids.

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.

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.
3. Explain the etiology, clinical signs, diagnostics, treatment, and prevention strategies for cortical, cerebellar, brainstem, spinal cord, and peripheral neurologic diseases.

Endocrinology

1. Describe the etiology, clinical signs, diagnosis, treatment, and control mechanisms for calcium, magnesium, and potassium endocrinopathies and imbalances.

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.

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.
3. Explain pathogenesis, symptoms, treatment, and control of leptospirosis, salmonellosis, Histophilus, and Mycoplasma infections.

Appendix 2: PLO to CLO mapping

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

Course Learning Outcomes	Program Learning Outcomes (PLO)
<p>A. Explain the etiology and pathophysiology for livestock animal diseases.</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>B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.</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 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>
<p>C. Determine the appropriate diagnostic tests and interpret the results to rule in or rule out differential diagnoses to make a diagnosis.</p>	<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>

<p>D. Recognize emergency presentations and determine appropriate management strategies.</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 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</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>agents in food producing animals.</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>

Appendix 3: Schedule

*Time Commitment:

- Panopto times are based on recorded time and do not include the time to complete the Panopto popup questions. These question are not graded and not available if watching a downloaded video.
- Assignment times – 2 hours count toward 1 lecture hour.

Week	Date	Topics	Assignment Due Dates		Zoom	*Time Commitment*	
			Tuesdays 11:59 pm AST	Points		Wednesdays 1:30-2:30 pm AST	Panopto (min)
		Review question to open up the Lessons materials		15			90
1	11-Jan	Introduction and Bovine, SR, Camelid Review	26-Jan	15		186	30
2	18-Jan						
3	25-Jan	Parasites Review	2-Feb	5	27-Jan	116	30
4	1-Feb	Therapeutics			3-Feb	5	
		Euthanasia				45	
		Vaccines	16-Feb	5		54	60
5	8-Feb	Swine	2-Mar	10		328	30
6	15-Feb						
7	22-Feb	Respiratory Tract	16-Mar	10	24-Feb	170	30
8	1-Mar						
9	8-Mar	Hemolymphatics, Liver	30-Mar	5		121	15
10	15-Mar				17-Mar	128	15
11	22-Mar	Neurology	13-Apr	10		214	30
12	29-Mar				31-Mar		
13	5-Apr	Endocrinology	20-Apr	10		185	30
		Mammary					
14	12-Apr	Multisystemic				140	
15	19-Apr				21-Apr		
17	3-May	Final Exam		45			
		Total		130	min	1692	360
					50 min/hour	34	4



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF LARGE ANIMAL MEDICINE AND SURGERY

LARGE ANIMAL SURGERY I (2 Credits)

LAMS 516 TERM 5

SPRING 2021

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: 2021-01-LAMS516-V-0-Large Animal Surgery I in Sakai
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. 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 <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

Teat conditions

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

Dehorning

1. Determine appropriate analgesia/ anaesthesia for surgery of the horn
2. Determine the appropriate method of dehorning, depending on the signalment of the individual animal

Eye conditions

1. Determine appropriate analgesia/ anaesthesia for surgery of the eye
2. Identify surgical conditions of the eye and describe simple surgical procedures of the eye

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

1. Appreciate reasons for and determine the appropriate method of tail docking, depending on the signalment of the individual animal
2. Identify rectal prolapse in pigs and describe corrective procedures
3. Determine the appropriate method of canine tooth removal in llamas.

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

1. Review the clinical anatomy of the urogenital tract in livestock animals and equines
2. Appreciate the indications for castration in the different species
3. Appreciate pre-operative considerations in the different species and determine appropriate restraint and analgesia/ anaesthesia
4. Determine the appropriate castration method, depending on the signalment of the individual animal
5. Identify complications of castration
6. Determine the appropriate method of treatment for castration complications.
7. Determine the appropriate surgical treatment for teaser bulls and recognise their advantages and limitations
8. 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 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

Livestock abdominal conditions

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

Conditions of the 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

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	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.

	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</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>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 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>CLO B Identify the aetiology and pathogenesis 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 2 Analyze homeostasis and disturbances 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>CLO C Recognize the clinical signs 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 4 Explain the relationship between disease processes and clinical signs.</p>

<p>CLO D Determine appropriate techniques for diagnosis of surgical conditions of the major organ systems in the livestock and equine species.</p>	<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>
<p>CLO E Determine treatment and management plans for surgical conditions of the major organ systems in the livestock and equine species</p>	<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. PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. 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 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>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>

	PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
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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 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 (Panopto and Zoom cases). 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 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 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](#)
- 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)	Length	Zoom (optional Tuesday 1:30pm)	Assessment (due on Monday 11.55pm)
1	Jan 18-22	Intro to LAS I Principles of LAS I Principles of LAS II Principles of LAS II	25 min 20 min 30 min 15 min	LAMS 516 office hours: Logistics for LAS I - Tuesday 1:30pm	Formative quiz 1 (10 min)
2	Jan 25-29	Teat conditions I Teat conditions II Dehorning	18 min 25 min 14 min		Formative quiz 2 (10 min)
3	Feb 1-5	Eye conditions I Eye conditions I Eye conditions I Miscellaneous	17 min 15 min 17 min 12 min	LAMS 516/544 Eye case - Wednesday 12pm	Formative quiz 3 (12 min) Quiz 1 closes
4	Feb 8-12	Castration considerations Equine castration	20 min 22 min	LAMS 516 Eye and horn cases - Tuesday 1:30pm	Quiz 2 closes
5	Feb 15-19	Ruminant, pig and camelid castration Castration complications (pre-operative) Castration complications (post-operative)	17 min 19 min 32 min		Formative quiz 4 (26 min) Quiz 3 closes
6	Feb 22-26	Livestock UGT – teaser bull surgery	16 min	LAMS 516 Castration cases - Tuesday 1:30pm	Formative quiz 5 (16 min)

		Livestock UGT – surgery of the penis and prepuce	15 min		
7	Mar 1-5	Livestock UGT – urolithiasis	25 min	LAMS 516 Q&A for exams – Tuesday 1:30pm LAMS 516/544 Livestock male UGT case – Wednesday 12pm	Formative quiz 6 (10 min) Quiz 4 closes
8	Mar 8-12	EXAM WEEK	MIDTERM (45 questions) - Monday March 8th 12pm AST		Quiz 5 closes
9	Mar 15-19	Equine male UGT I Equine male UGT II Equine female UGT I Equine female UGT II	14 min 14 min 27 min 26 min		Formative quiz 7 (10 min) Quiz 6 closes
10	Mar 22-26	Livestock female UGT I	30 min	LAMS 516 Equine UGT cases – Tuesday 1:30pm	Formative quiz 8 (10 min)
11	Mar 29-Apr 2	Livestock female UGT II Livestock MSK I	32 min 25 min		Formative quiz 9 (10 min) Quiz 7 closes
12	Apr 5-9	Livestock MSK II Livestock GIT I	17 min 18 min	LAMS 516 Livestock female UGT cases – Tuesday 1:30pm	Formative quiz 10 (12 min) Quiz 8 closes
13	Apr 12-16	Livestock GIT II Livestock GIT III	28 min 14 min	LAMS 516 Livestock MSK/GIT cases – Tuesday 1:30 pm LAMS 516/544 Livestock GIT case – Wednesday 12pm	Formative quiz 11 (10 min) Quiz 9 closes
14	Apr 19-23	Umbilical masses Conditions of the integument I Conditions of the integument II	23 min 24 min 35 min		Quiz 10 closes
15	Apr 26-30	Conditions of the integument III	38 min	LAMS 516 Conditions of the integument - Tuesday 1:30pm	Formative quiz 12 (10 min) Quiz 11 closes
16	May 3-7			LAMS 516 Q&A for exam – Tuesday 1:30pm	Quiz 12 closes
17	May 10-14	EXAM WEEK	FINAL (45 questions) - Tuesday May 10th 12pm AST		



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL MEDICINE AND SURGERY

THERIOGENOLOGY SYLLABUS (4 credits)

LAMS 519 TERM 5

SPRING 2021

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; learning resources and activities for each week organized in Lessons)

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. 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

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
Labs	
Bovine transrectal palpation and ultrasonography	69. List the preparatory steps and precautions that need to be taken before and during transrectal examination in the cow
	70. Describe how to safely perform transrectal palpation for pregnancy diagnosis in a cow
	71. List the definitive and suggestive signs of bovine pregnancy
Bull breeding soundness evaluation	72. List the essential components of a bull breeding soundness evaluation (BSE)
	73. Describe how to safely perform BSE in a bull
	74. Interpret the findings of the BSE to classify the bull as a satisfactory, questionable or unsatisfactory breeder.
Obstetrics	75. Identify the common obstetric equipment and state their use
	76. Assess the presentation, position and posture of the fetus
	77. Describe how to determine fetal viability using different reflexes
	78. Describe how to perform epidural anesthesia in a cow
Mare breeding soundness evaluation	79. List the components of a mare breeding soundness evaluation (BSE)
	80. State how to safely perform BSE in a mare
	81. Interpret the findings of a mare BSE
Canine reproduction	82. Describe how to collect and evaluate semen in a dog
	83. Describe how to perform vaginal cytology in a bitch
	84. 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
<p>CLO1: Discuss and illustrate the normal reproductive cycles of domestic animal species</p>	<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>
<p>CLO2: Apply the knowledge of reproductive physiology and endocrinology to control or manage domestic animal reproduction</p>	<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 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.</p>

	<p>Design and execute plans for health promotion, disease prevention, and food safety.</p> <p>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 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.</p> <p>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.</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 and model self-awareness including understanding personal limitations and willingness to seek advice.</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.</p>
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XII. Course Schedule (Lecturer: Dr. Firdous Khan)

Week 1 (18th January to 22nd January)
<p>Bovine female clinical reproductive anatomy and physiology lecture (1 hour)</p> <p>Bovine follicular dynamics and endocrinology lecture (1 hour)</p> <p>Bovine estrus synchronization and artificial insemination lecture (1 hour)</p> <p>Transrectal palpation and ultrasonography lab (1 hour)</p>
Week 2 (25th January to 29th January)
<p>Bovine pregnancy and placentation lecture (1 hour)</p> <p>Bovine pregnancy diagnosis lecture (1 hour)</p> <p>Bovine gestational disorders lecture (1 hour)</p> <p>Transrectal palpation and ultrasonography lab assignment (due on 29th January at 5:00 PM Grenadian time; 20 minutes)</p>

Week 3 (1st February to 5th February)

Bovine parturition lecture (1 hour)

Bovine dystocia lecture (1 hour)

Bovine postpartum problems lecture (1 hour)

Bovine obstetrics lab (1 hour)

Week 4 (8th February to 12th February)

Bovine abortion lecture (1 hour)

Bovine infertility lecture (1 hour)

Bovine assisted reproductive techniques lecture (1 hour)

Bovine obstetrics lab assignment (**due on 12th February at 5:00 PM Grenadian time; 20 minutes**)

Week 5 (15th February to 19th February)

Bovine male reproductive physiology and breeding soundness evaluation lecture (1 hour)

Bovine male infertility lecture (1 hour)

Bovine male breeding soundness evaluation lab (1 hour)

Week 6 (22nd February to 26th February)

Small ruminant reproduction I lecture (1 hour)

Small ruminant reproduction II lecture (1 hour)

Small ruminant reproduction III lecture (1 hour)

Bovine male breeding soundness evaluation lab assignment (**due on 26th February at 5:00 PM Grenadian time; 20 minutes**)

Week 7 (1st March to 5th March)

Porcine reproduction I lecture (1 hour)

Porcine reproduction II lecture (1 hour)

Equine female clinical reproductive anatomy and physiology lecture (1 hour)

Week 8 (8th March to 12th March)

LAMS 519 Midterm Exam on 12th March (1 hour)

Week 9 (15th March to 19th March)

Equine estrous cycle manipulation lecture (1 hour)

Equine breeding soundness evaluation lecture (1 hour)

Equine breeding management lecture (1 hour)

Equine female breeding soundness evaluation lab (1 hour)

Week 10 (22nd March to 26th March)

Equine pregnancy and placentation lecture (1 hour)

Equine pregnancy diagnosis lecture (1 hour)

Equine infectious pregnancy losses lecture (1 hour)

Equine female breeding soundness evaluation lab assignment (**due on 26th March at 5:00 PM Grenadian time; 20 minutes**)

Week 11 (29th March to 2nd April)

Equine non-infectious pregnancy losses lecture (1 hour)

Equine parturition and dystocia lecture (1 hour)

Equine postpartum problems lecture (1 hour)

Week 12 (5th April to 9th April)

Equine infertility lecture (1 hour)

Equine assisted reproductive techniques lecture (1 hour)

Equine male reproductive physiology and breeding soundness evaluation lecture (1 hour)

Week 13 (12th April to 16th April)

Equine male infertility lecture (1 hour)

Canine female reproductive anatomy and physiology lecture (1 hour)

Canine breeding management lecture (1 hour)

Canine reproduction lab (1 hour)

Week 14 (19th April to 23rd April)

Canine pregnancy and parturition lecture (1 hour)

Canine obstetrics lecture (1 hour)

Canine gestational and postpartum problems lecture (1 hour)

Canine reproduction lab assignment (**due on 23rd April at 5:00 PM Grenadian time; 20 minutes**)

Week 15 (26th April to 30th April)

Canine control of reproduction lecture (1 hour)

Canine female infertility I lecture (1 hour)

Canine infertility II lecture (1 hour)

Week 16 (3rd May to 7th May)

Canine male breeding soundness evaluation and infertility I lecture (1 hour)

Canine male infertility II lecture (1 hour)

Feline reproduction lecture (1 hour)

Week 17 (10th May to 14th May)

LAMS 519 Final Exam on 14th May (1.5 hours)

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.

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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 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.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Large Animal Medicine and Surgery
Professional Veterinary Development 6 (2 credits)
LAMS 533 TERM 6
Spring 2021

I. Course Director

Nicki Wise DVM, PhD, DACVIM

Email: lwise1@sgu.edu

Other faculty/lecturers/coordinators:

Adria Rodriguez DVM

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Keshia John, Simulation Technician/Communication Lab Coordinator
Email: 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
- Understand how to prepare for job interviews and other professional interactions

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
- 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 lessons and as a table at the end of this document.

XIII. 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.

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 February 12th**

Business Assignments: To complete the business module, you must complete the following assignments. More details will be provided by Dr. Douglas. **DUE DATE February 28th**

- 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.

Wellness Assignments: Before the third zoom session, you are expected to complete the following:

DUE DATES March 7 and 14th at 11:55pm

- f. Complete both the QPR/Kognito Training Certificates
- g. Complete the Mental Wellbeing in Vet Med assignment – details to be provided by Dr. Rodriguez.

Communication Lab: This term, you will virtually attend **ONE** - 4 hour communication session on Fridays from 1:30pm-5:30pm AST. The date you sign up for is your choice, but you must complete one lab from Weeks 5 – 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
- Attendance of ONE lab is **mandatory** to pass the course.

Communication Assignment: After your communication lab, you will review your video and complete the SELF Assessment QUIZ on sakai. **DUE on May 1st**

- XIII. **Recommended study strategies:** Remain engaged throughout the course to benefit from the various active learning activities.
- XIV. **Instructor's expectations of the student:** The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment policies
- XV. **Professionalism statement:**
Please exhibit professional behavior at all times. Respond to emails from faculty within 24 hours.

XVI. Attendance policy: (refer student to the student manual page if applicable)

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 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 and/or failure to submit assignments: Failure to submit the assignments will result in course failure.

XVIII. ExamSoft Policy – not applicable in this course.

XIX. 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.

XX. 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 how to apply these skills in a variety of settings	1,6
	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 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	7
8. The Clinical Year Survival Guide	1- Review details of clinical rotations including scheduling, patient care and evaluations 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	6,7

Course Level Learning Outcomes SGU SVM Program Outcomes RCVS Outcomes

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
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SCHEDULE:

LAMS 533 Spring 2021 Weekly Schedule

Wk	Dates	Lectures/Content	Faculty	Format/Assignments
1	Jan 11-15	4 th Year Survival Guide (2)	Dr. Nicki Wise	Live Zoom (2 hr) January 12 th 12pm AST
2	Jan 18 -22	Receiving Feedback & Growth Mindset	Drs. Nicki Wise & Talia Guttin	Panopto lecture (1hr), TedTalk + Assignment DUE February 12 th
3	Jan 25 -29	NAVLE Prep	Dr. Buckland & Dr. Slinger	Panopto (2 hrs)
4	Feb 1 –5	Getting Paid for Doing What You Love	Dr. Heather Douglas	Panopto (1) + 2 Assignments
5	Feb 8 -12	The Business of Veterinary Medicine	Dr. Heather Douglas	Panopto (1) + Assignment
6	Feb 15 -19	Veterinary Medicine is More than Puppies and Kittens	Dr. Heather Douglas	Panopto (2) + 2 Assignments All business assignments DUE February 28 th at 11:55pm
7	Feb 22 - 26	No content		
8	March 1-5	Wellbeing in Veterinary Medicine: Your Wheel of Life/Wellness Wheel	Dr. Adria Rodriguez	Zoom lecture Assignment-QPR Training Certificate Due March 7 th 11:55pm
9	Mar 8- 12	Mindfulness and Self-Compassion in Veterinary Medicine	Dr. Adria Rodriguez	Zoom lecture - Assignment- Mental Wellbeing in Vet Med Due March 14 th 11:55pm
10	Mar 15 -19	The Impact of Societal Expectations and Finding Support after SGU	Dr. Adria Rodriguez	Zoom Lecture (1 hr)
11	Mar 22-27	No Content		
12	Mar 29-Apr 2	Financial Literacy	SGU Financial Aid	Panopto (2)
13	Apr 5 - 9	Loan Repayment Webinar	Doctors without quarters	Live Zoom Webinar (2) DATE & Time TBD

14	Apr 12 -16	AVMA PLIT – Veterinary Liability	Dr. Jennifer Frey	Live Zoom (2hr) on April 15 th at 12pm AST
15 16	Apr 19 - 30	No Content		

COMMUNICATION LABS in Weeks 5-13 Fridays from 130-530pm AST*



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Large Animal Medicine and Surgery Department

Basic Small Animal Nutrition (1 credit)

LAMS 540 Term 1

Spring 2021

I. Course Faculty and Staff Information

Course directors:

Dr. Catherine Werners-Butler Professor DVM, PhD, MRCVS, Dipl. ECEIM

Email: cwerners@sgu.edu

Contact via email and/or zoom office hours

Dr. Afroza Khanam Instructor BSc, MSc, PhD

Email: akhanam@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 Directors: cwerners@sgu.edu or akhanam@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. Accommodation guidelines

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 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 Learning 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 Learning Outcomes

Lecture /lab name and number	Your lecture/lab Learning Outcomes:	CLO #
<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>2. 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>3. 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>8</p> <p>8</p> <p>4</p> <p>4</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>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>	<p>4</p> <p>4</p> <p>4</p>
4. 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>
5. Alternative Diets	<p>1- Argue for and against the use of home-cooked diets for healthy and for pets with health concerns</p> <p>2- List the factors that can contribute to nutritional adequacy concerns in home-cooked 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>

<p>6. Feeding healthy dogs and cats</p>	<p>1- Select an appropriate diet for a pet of any life stage</p> <p>2- Estimate energy needs for any pet</p> <p>3- Calculate a feeding dose for a 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>1, 2, 3</p> <p>3</p> <p>3</p> <p>2</p> <p>1, 3</p> <p>2,3</p>
<p>7. Dietary Supplements & Fatty Acids</p>	<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>
<p>8. Obesity</p>	<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>6</p> <p>6</p> <p>1,6</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>9. Pet Food Label Lab</p>	<p>1- Locate and evaluate nutritional adequacy information on a pet food label</p> <p>2- Recognize products that have 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</p> <p>3- Utilize the AAFCO manual to look up pet food ingredients, label regulations, and protocols for determining nutritional adequacy.</p> <p>4- Calculate the cost of feeding of a specific food for a specific pet</p> <p>5- Describe common marketing categories and provide an example of a well-known diet that would fall into each category</p> <p>6- Evaluate commercial diets for their suitability for a specific pet</p>	<p>4</p> <p>4,8</p> <p>8</p> <p>3</p> <p>4</p> <p>4</p>

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.

Course Learning Outcome	SGUSVM Program Learning Outcome
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	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Describe the main nutritional/physiological differences between dogs and cats and also their similarities	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
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)	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions. PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
Evaluate commercial pet foods based on label information, manufacturer's website, marketing materials, peer-reviewed literature when available	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions. PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine

<p>Identify the pros and cons of raw and home-cooked diets</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 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p>
<p>Identify risk factors for obesity and create a plan for both obesity prevention and treatment (i.e. weight loss plan) including an appropriate diet</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 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p>
<p>Address common myths about pet food - grain-free, natural, by-products</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 9 Apply the principles of veterinary public health for the promotion of human and animal health.</p>
<p>Describe how pet food is regulated - what organizations are involved and which aspects they are responsible for?</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>

XII. Course Schedule

Week	Activity/Topic	Format	Time on Task (hrs)
Week 9 (March 17 th)	General introduction to animal nutrition	Live & recorded (Time: 1:30-2:30 pm AST)	1
Week 9 (March 15-19 th)	Nutritional Assessment	E-module	1
Week 10 (March 22-26 th)	Intro to Feeding Pets	E-module	0.75
Week 10 (March 22-26 th)	Interpreting Pet Food Labels	E-module	1.25
Week 11 (March 31 st)	Selecting pet food/Q&A lecture	Live & recorded (Time: 11:30am-12:30 pm AST)	1
Week 11 (March 29-31 st)	Online pet food label lab	Student assignment Deadline: Monday 5th April at 12.00 pm AST	1 (2 hours of self-work)
Week 12 (April 7 th)	Discussion of pet food lab	Live Zoom (attendance required) (Time: 11:30am-12:30 pm AST)	1
Week 12 (April 5-7 th)	Alternative Diets	E-module	1
Week 13 (April 14 th)	Pet Food Math lecture	Live & recorded (Time: 1:30-2:30 pm AST)	1
Week 13 (April 12-16 th)	Feeding Healthy Dogs & Cats	E-module	2
Week 13 (April 12-16 th)	Quiz will be posted on Sakai Midweek	Sakai Quiz (5 points) Deadline: Midweek of week14	-
Week 14 (April 21 st)	Dietary supplements	Live & recorded (Time: 1:30-2:30 pm AST)	1
Week 14 (April 19-23 rd)	Obesity	E-module	1
Week 15 (April 28 th)	Case examples & Q&A	Live Zoom (attendance required) (Time: 1:30-2:30 pm AST)	1
Exam Week (May 3-7 th)	Final Comprehensive Exam (80% of grade) Wednesday, May 12th at 12:00 pm AST		
Exam Week (May 10-14 th)			

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: 10%

Nutrition Lab assignment: 5%

Sakai quiz: 5%

Final exam: 80%

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 (80% of grade) Wednesday May 12th, 12:00 pm AST**

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
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 in a timely manner, 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 (refer student to the student manual page if applicable)

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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) (cwarners@sgu.edu or akhanam@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) 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 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 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 (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.



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
PROFESSIONAL DEVELOPMENT I (2cr)
LAMS 541 (Term 1)
Spring 2021

I. Course Faculty and Staff Information

Dr. Kerri Nigito, DVM, CPH, MPH, DABVP (Food Animal Practice)
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. 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

- a. None

VIII. Course Rationale

- a. This course is the first of 6 courses within the Professional Development 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 Learning 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 Learning Outcomes

Lesson	Outcomes
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<p>Domain 1: Professionalism lecture series and PAWS 2-day seminar</p>	<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. 7. Recognize the importance of externships and the role they play in advancing one’s veterinary career. 8. Recognize the importance of mentorship, identify the characteristics of an effective mentor, and determine how to find an appropriate mentor for your career. 9. Recognize and discuss appropriate professional etiquette for interaction with faculty and potential employers. 10. Identify leaning strategies and study plans that will foster good time management and academic success. 11. Compose a “Class Code of Conduct” that is agreed upon and accepted by all students in the Term 1 class. 12. Recognize the importance of clinical communication for a successful career in veterinary medicine.
<p>Domain 2: Wellness lecture series and faculty mentor group meeting</p>	<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.
<p>Domain 3: Ethics and Welfare lecture series</p>	<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 on Tuesdays, March 16th, 23rd, 30th, April 13th, from 1pm to 3pm. You will be required to go to **one** of these sessions based on your faculty mentor availability.

Date / Hour	Lecture topic	Faculty	Assignment	Lecture Hours
Week 1 (January 18 – 24)				
Monday, January 18th 9:00am - 11:00am AST	PAWS Workshop Asynchronous Content	PAWS Facilitators and Faculty	Mandatory Engagement	2 Hour self-study
Live Zoom Session Monday, January 18th 1:00pm - 3:30pm AST	PAWS Workshop Online & Asynchronous	PAWS Facilitators and Faculty	Mandatory Attendance	2.5
Tuesday, January 19th 9:00am - 11:00am AST	PAWS Workshop Asynchronous Content	PAWS Facilitators and Faculty	Mandatory Engagement	2 Hour self-study
Live Zoom Session Tuesday, January 19th 1:00pm - 4:00pm AST	PAWS Workshop Online & Asynchronous	PAWS Facilitators and Faculty	Mandatory Attendance	3
Week 2 (January 25-31)				
Panopto Recording (30 min)	Personal Budgeting and Impact on Loans	Dr. Heather Douglas	**Mandatory** Assignment: Create a personal budget reflecting your current financial status and upload it to your “Professional Portfolio” (30 min)	1

			Due: Tuesday, February 2nd @ 11:00pm AST	
Live Zoom Session Thursday, January 28 th 12:00pm – 1:00pm	Study Skills: Smart Start	Dr. Peter Slinger	**Optional** Assignment: Exam/Assignment Schedule: Working with your Study Buddy in an online platform create a weekly term schedule for all exams/assignments Due: Tuesday, February 9th @ 11:00pm AST	1
Week 3 (February 1 –7)				
Live Zoom Session Thursday, February 4 th 12:00pm-1:00pm AST	Wellbeing in Veterinary Medicine	Dr. Adria Rodriguez	**Mandatory** Reflection Activity: (15 min) What are you most concerned about online learning in this course? Why? Due: Tuesday, February 9th @ 11:00pm AST	1.5
Week 4 (February 8 – 14)				
Panopto Recording (20 min)	Work Hard, Play Hard: Optimizing Your Summer Experience	Dr. Heather Douglas	**Optional** Activity: Create a business card and upload it to your “professional portfolio”. Due: Tuesday, February 16th @ 11:00pm AST	0.5
Live Zoom Session Thursday, February 11 th 12:00pm-1:00pm AST	Coping with Stress- Focus on Online Transition	Dr. Preniah Lafeuillee	**Mandatory** Reflection Activity: (15 min) What strategies will you use to develop resilience and/or what mechanisms will you use to cope in times of stress? Due: Tuesday, February 16th @ 11:00pm AST	1.5
Week 5 (February 15 – 21)				
Panopto Recording (20 min)	Scholarships Opportunities	Dr. Heather Douglas	**Optional** Create a scholarship template and upload it to your “professional portfolio” Due: Tuesday, February 23rd @ 11:00pm AST	0.5
Live Zoom Session	Your Veterinary Career		**Mandatory** Externship Assignment: Research 3	2

Thursday, February 18 th 12:00pm-1:00pm AST		Dr. Kerri Nigito	externship opportunities and discuss how they would be helpful for your veterinary career/education (1hr) Due: Tuesday, March 2nd @ 11:00pm AST	
Week 6 (February 22- 28)				
Live Zoom Session Thursday, February 25 th 12:00pm-1:00pm AST	Professional Etiquette and Code of Conduct	Dr. Kerri Nigito	**Mandatory** In Class Activity: Class Code of Conduct: Working in breakout rooms develop a set of guidelines to follow and post on your class Facebook page Due: In class	1
Week 7 (March 1 – 7)				
Preparation for Midterm Examinations				
Week 8 – Midterms				
Week 9 (March 15 – 21)				
Live Zoom Session Thursday, March 18 th 12:00pm-1:00pm AST	Approach to Second Half of the Term	Dr. Peter Slinger	**Mandatory** Reflection Activity: (15 min) Due: Tuesday, March 23rd @ 11:00pm AST	1.5
Week 10 (March 22 – 28)				
Live Zoom Session Thursday, March 25 th 1:30pm-3:30pm AST	Introduction to Ethics	Dr. Austin Kirwan	**Mandatory** Reflection Activity: (15 min) How do you now compare and contrast human rights and animal rights? Due: Tuesday, March 30th @ 11:00pm AST	2.5
Week 11 (March 29 – April 4)				
Live Zoom Session Thursday, April 1 st 12:00pm-2:00pm AST	Animals in Society & The Role of the Vet	Dr. Austin Kirwan	**Mandatory** Reflection Activity: (15 min) What problem(s) do you see with	2.5

			anthropomorphism when treating your patients? Due: Tuesday, April 6th @ 11:00pm AST	
Week 12 (April 5 – 11)				
Panopto Recording (20 min)	Intro to EBVM	Dr. Heidi Janicke		0.5
Live Zoom Session Thursday, April 8 th 12:00am-1:00pm AST	Research at SGU	Dr. Sonia Cheetham-Brow		1
Panopto Recording (25 min)	Research Possibilities in PH	Dr. Satesh Bidaisee	**Mandatory** Forum activity: COVID-19 and VPH (30 min) Due: Tuesday, April 13th @ 11:00pm AST	0.5
Week 13 (April 12 – 18)				
Panopto Recording (50 min)	Research Methods	Dr. Paul Fields	**Mandatory** Reflection Activity: Qualitative and quantitative research questions (15 min) Due: Tuesday, April 20th @ 11:00pm AST	1.5
Panopto Recording (40 min)	Responsible Conduct of Research in Veterinary Medicine	Dr. Cheryl Cox-Macpherson		1
Week 14 (April 19 – 25)				
Panopto Recording (50 min)	Scientific Inquiry	Dr. Paul Fields	**Optional** Reflection Activity: Go through the steps of the inquiry process with one of your research questions (30 min) Due: Tuesday, April 27th @ 11:00pm AST	1
Live Zoom Session Thursday, April 22 nd 12:00am-1:00pm AST	Wellness Check In – Focus on Support	Dr. Adria Rodriguez	**Mandatory** Reflection Activity: (15 min) What skills will you take away from the Professional Development I course to help you with your success?	1.5

			Due: Tuesday, April 27th @ 11:00pm AST	
Total Lecture hours				30

XIII. Grading and assessment policy, and grading rubrics

a. The course will be graded Pass/Fail.

100-69.5% = Pass

<69.5% = Fail

Evaluation	Weighted	Grade
Externship Assignment	20%	28pts
Wellness Regimen Assignment	20%	24pts
Personal Budget	5%	P/F
Class Code of Conduct	4%	P/F
Ethics Reflection Questions (2)	2% (1% Each)	P/F
Wellness Domain Reflection Questions (3)	3% (1% Each)	P/F
Personal Development Reflection Question	1%	P/F
VPH Forum Activity	5%	P/F
Professionalism Evaluation at Midterm	20%	16pts
Professionalism Evaluation at Final	20%	16pts

A grade of passing will be determined by:

- ii. Successful completion of 2 assignments (see below)
- iii. Mandatory attendance at the Faculty mentor meeting
- iv. 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, activities, and reflection questions.
 4. Completion of weekly lesson checklists.
- v. 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 may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.
- vi. See Rubrics in Appendix

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 (see Appendix A). This assignment will be covered in more detail during the seminar “Your Veterinary Career” on Thursday, February 18th @ 12:00pm AST. **The Due Date for this assignment is Tuesday, March 2nd @ 11:00pm AST.** 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 one week after your assigned faculty mentor meeting.** Please refer to Appendix B for grading rubric.

A passing grade is determined by attending the mandatory meeting and completing the assignment. 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/medical/personal difficulties resulting in the 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 mentor group meetings. One unexcused absence may result in course failure and the student may be placed on non-academic probation by the CAPPS committee. Please review the "Professionalism" rubric in Appendix C.

Students are expected to be on time; arrival after the first 10 minutes or leaving before the end of class (less than 70% of the session) 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 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:

Appendix A:

Externship Assignment Grading Rubric:

COLUMNS (Performance Levels)				
Externship Assignment Mentor Evaluation				
ROWS (Dimensions)	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Student demonstrates a clear understanding of the externship concept	Student clearly and concisely described 3 different externship opportunities including the type of experience, the specific area of specialty, and the format of the experience.	Student generally clearly and concisely described 3 different externship opportunities and may have excluded no more than 1 of the following: the type of experience, the specific area of specialty, and the format of the experience.	Student occasionally clearly and concisely described 3 different externship opportunities and/or excluded information on the type of experience, the specific area of specialty, and the format of the experience.	The student did not clearly and concisely describe 3 different externship opportunities and/or excluded information on the type of experience, the specific area of specialty, and the format of the experience.
Student demonstrates a clear understanding of the mentorship concept	Consistently and clearly explained the type of mentorship available and/or the type of mentor that the student would like to gain for each externship experience	Generally explained the type of mentorship available and/or the type of mentor that the student would like to gain for each externship experience with an occasional lack of clarity.	Inconsistently explained the type of mentorship available and/or the type of mentor that the student would like to gain for each externship experience	The student did not explain the type of mentorship available and/or the type of mentor that the student would like to gain for any externship experience
Student discusses the relevance of externship content	Consistently and clearly explained the relevance of each externship experience to personal professional development.	Generally explained the relevance of each externship experience to personal professional development with an occasional lack of clarity at times.	Inconsistently explained the relevance of each externship experience to personal professional development.	The student failed to explain the relevance of each externship experience to personal professional development.
Demonstrates appropriate writing and grammar skills	Wrote an appropriate assignment using correct grammar and spelling with no mistakes.	The assignment had 2 or fewer minor grammatical and/or spelling errors.	The assignment had 3-4 major grammatical and/or spelling errors	The assignment had more than 4 grammatical and/or spelling errors.

Organization and Structure	The assignment was very well organized and easy to follow with a natural flow.	The assignment generally was organized, however there were times when it was difficult to follow the thought process or content.	The assignment was generally disorganized making it difficult to follow the thought process and content	There was no discernible organization or flow of the assignment and it was difficult to follow the writing and content.
Appropriately adheres to word count guidelines	Student submitted an assignment within the 400 word count maximum requirements	Student submitted an assignment that was less than 450 words	Student submitted an assignment that was less than 500 words	Student submitted an assignment that was greater than 500 words
Appropriately adheres to deadlines	Assignment was submitted by the deadline and/or student communicated with course director PRIOR to deadline with any technical/medical/personal issues	Assignment was submitted after the deadline and/or not submitted and student communicated with course director the same day of assignment submission with any technical/medical/personal issues	Assignment was not submitted, and student communicated with course director more than 24 hours after assignment submission with any technical/medical/personal issues	Assignment was not submitted, and student never communicated with course director

Appendix B:

Wellness Regimen Grading Rubric:

COLUMNS (Performance Levels)				
Wellness Regimen Assignment Mentor Evaluation				
ROWS (Dimensions)	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Student demonstrates a clear understanding of their Wellness Self-Evaluation	Student clearly and concisely described the wellness areas from the self-evaluation that received low scores.	Student generally clearly and concisely described the wellness areas from the self-evaluation that received low scores.	Student occasionally clearly and concisely described the wellness areas from the self-evaluation that received low scores.	The student did not clearly and concisely describe the wellness areas from the self-evaluation that received low scores.
Student presents a clear schedule of events addressing specific wellness concerns from the self-evaluation	Consistently and in a clear schedule format explained the type of activities/techniques student will utilize to address the wellness areas that received lower scores.	Generally explained in an unclear schedule format the type of activities/techniques student will utilize to address the wellness areas that received lower scores.	Inconsistently explained in an unclear schedule format the type of activities/techniques student will utilize to address the wellness areas that received lower scores.	The student did not explain or use any type of schedule format the type of activities/techniques student will utilize to address the wellness areas that received lower scores
Student discusses the relevance of each event to address each wellness concern	Consistently and clearly explained the relevance of each activity/technique and how it will address the wellness areas that received lower scores.	Generally explained, sometimes unclearly the relevance of each activity/technique and how it will address the wellness areas that received lower scores.	Inconsistently explained the relevance of each activity/technique and how it will address the wellness areas that received lower scores.	The student failed to explain the relevance of each activity/technique and how it will address the wellness areas that received lower scores.
Student demonstrates appropriate writing and grammar skills	Wrote an appropriate assignment using correct grammar and spelling with no mistakes.	The assignment had 2 or fewer minor grammatical and/or spelling errors.	The assignment had 3-4 major grammatical and/or spelling errors	The assignment had more than 4 grammatical and/or spelling errors.
Organization and Structure	The assignment was very well organized and easy to follow with a natural flow.	The assignment generally was organized, however there were times when it was	The assignment was generally disorganized making it difficult to follow the thought	There was no discernible organization or flow of the assignment and it was

		difficult to follow	process and content.	difficult to follow the writing and content.
Appropriately adheres to deadlines	Assignment was submitted by the deadline and/or student communicated with course director PRIOR to deadline with any technical/medical/personal issues	Assignment was submitted after the deadline and/or not submitted and student communicated with course director the same day of assignment submission with any technical/medical/personal issues	Assignment was not submitted, and student communicated with course director more than 24 hours after assignment submission with any technical/medical/personal issues	Assignment was not submitted, and student never communicated with course director

Appendix C:

Professionalism Grading Rubric:

Criteria	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Punctuality	Student is on time for all Zoom sessions and/or communicates with the course director within 2 hours of the session if more than 10 minutes late	Student is more than 10 minutes late and communicates with course director on the same day as the session	Student is more than 10 minutes late and communicate with course director but not on the same day as the session	Student is not on time for Zoom sessions and does not communicate at any time with the course director
Attendance	Student attends all mandatory zoom sessions for the entire duration of the session and/or communicates with the	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session

	course director within 2 hours of the session	communicates with course director on the same day as the session	communicate with course director but not on the same day as the session	(70%) and does not communicate at any time with the course director
Engagement	Student completes module checklists, turns in assignments and completes reflection questions on time and/or communicates with the course director PRIOR to deadline with any technical/medical/personal issues.	Student submitted module checklist, assignment, reflection questions after the deadline and/or not submitted and student communicated with course director the same day of assignment deadline with any technical/medical/personal issues	Module checklist, assignment, and or reflection question was not submitted, and student communicated with course director more than 24 hours after assignment deadline with any technical/medical/personal issues	Student does not complete module checklists, turn in assignments and/or complete reflection questions on time and did not communicate with the course director at any time.
Communication	Student always communicates in a professional tone and timely manner.	Communication is mostly professional and timely with some minor areas of improvement needed.	Communication is generally professional in tone, but often untimely and major improvement is needed.	Student does not communicate in a professional tone and/or timely manner.
Total (4 points)				



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT

PROFESSIONAL DEVELOPMENT II SYLLABUS (2 credits)

LAMS 542 TERM 2

Spring 2021

I. Course Faculty and Staff Information

Course Director:

Adria Rodriguez, DVM, MSc, CVA, CVCH, MS TCVM
Associate Professor, Small Animal Medicine and Surgery, Professional Development
Wellbeing, Diversity and Inclusion Officer, SVM

Email: AIRodriguez@sgu.edu

Office Hours: By appointment on Zoom

Course Faculty:

Domain 1: Personal Development (PD) - Dr. Kerri Nigito (nigker1@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 (lwisel@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:

Ms. Heather Brathwaite (hbrathwaite@sgu.edu)

Ms. Jill Paterson (jpaterso@sgu.edu)

Ms. Suzanne Paparo (spaparo@sgu.edu)

Course Assistant: Ms. Keshia John (kjohn5@sgu.edu)

Faculty Mentors

- II. Course location:** ONLINE Live Zoom Seminars
ONLINE Sakai (Weekly Requirements, Panopto, Assignments, Forums)
- 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
- V. Recommended resources:**
Text: *The Art of Veterinary Practice Management*, 2nd ed., 2014; M. Opperman
- 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**
- 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

The course will be graded Pass/Fail.

100%-69.5% = Pass

<69.5% = Fail

Evaluation	Weight	Grade
QPR Training	5%	P/F
EBVM Assignment Part A-C	10%	50 points
BFL Forums (2)	5%	P/F
BFL Assignments (2)	10%	P/F
CV/Letter of Intent Assignment	10%	10 points
Communication Lab and Self-Assessment	10%	P/F
PD Mentor Meeting	10%	P/F
Professionalism evaluation at midterm	20%	16 points
Professionalism evaluation end of term	20%	16 points

A. A grade of passing will be determined by:

- i. Successful completion of assignments (see below)
- ii. Mandatory attendance-Faculty mentor meeting
- iii. Mandatory attendance/engagement in the course content which includes:
 1. Attendance of all synchronous Zoom sessions
 2. Review of all asynchronous recorded seminars
 3. Completion of asynchronous forums 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. Open dates are listed on the assignment and schedule.

1. Domain 1 PD: CV and Letter of Intent Workshop (Week 10)
(OPEN March 29/DUE Sunday, April 4th 11:55pm)

All students will participate in this 2-hour seminar focused on the development of a curriculum vita **via Zoom on Tuesday, March 30th at 12:00pm 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 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/Letter of Intent Workshop Assignment. Each student's respective Professionalism Group Mentor will review assignments, and each student will receive feedback with a rubric from their mentor two weeks after due date.

2. Domain 2 W: QPR/Kognito Certificate (Week 1,2)
(OPEN January 19th/DUE Sunday, January 31st, 11:55pm AST)

All students will complete the QPR and Kognito training. Upon successful completion, students will upload their certificates in Sakai.

3. Domain 3 EW: Professional Development Mentor Group Meeting: Ethics and Welfare Scenario Review and Discussion (Weeks 5,6,7) (See Schedule)

All students will review 3 veterinary ethics/welfare scenario videos and discuss the scenarios and ethical implications with their mentor and peers. **ATTENDANCE IS MANDATORY.**

4. Domain 4 Communication: Communication Skills

- a. Communication Skills Video Review (Week 4) **Open Feb 1st/Due Feb 14th**

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. Week 4 Peer Video Assessments (Week 4) **Open Feb 1st/Due Feb 14th**

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 5 BFL: Different Forum and BFL Assignments (total 2 assignments and 2 forums) may be found in Sakai when made available. Please refer to the schedule (Weeks 10 and 12)

6. 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 and assignment brief 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 (Week 6): **Open Feb 22/Due Sunday Feb 28 11:55pm AST**
Choose ONE team member and pick a clinical scenario and fill in the spreadsheet accordingly.
- b. Part B (Week 7): **Open Mar 1/Due Sunday Mar 7 11:55pm AST**
With your teammate, 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 B.
- c. Part C Week (9,10): **Open Mar 15/Due Mar 28th 11:55pm AST**
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 A).

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 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, engagement, and assignment and forum 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 by Sunday 11:55pm AST of the week of the missed lecture.

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 11:55pm 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 attend an examination (Sakai quiz/test or ExamSoft) 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 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 Course Director and the School.

Failure to adhere to attendance and engagement guidelines 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.

LAMS 542 Lecture and Activities Schedule– Spring 2021

Modality/Activity/ Duration/Date/Time	Lecture Topic	Faculty	Open Date/ Due Date
Week 1 (January 18-24)			
ZOOM Lecture (1hr) Tuesday Jan 19 (12-1)	Welcome/Course Introduction/Logistics	Dr. Adria Rodriguez	
Sakai/Assignment (1-2hr)	QPR Training	Dr. Adria Rodriguez	Open Jan 19 Due Jan 31
Week 2 (January 25-31)			
ZOOM Lecture (2hr) Tuesday Jan 26 (12-2)	Mindfulness and Self- Compassion in Veterinary Medicine	Dr. Adria Rodriguez	
Week 3 (February 1-7)			
ZOOM Lecture (1hr) Tuesday Feb 2 (12-1)	Introduction to Communication Initiating the Client Interview	Dr. Nicki Wise	
PANOPTO Lecture (1hr)	Giving Feedback	Dr. Nicki Wise	
Week 4 (February 8 -14) Faculty Mentor Meetings and Communication Labs Start: See Schedule			
Week 5 (February 15 -21)			
ZOOM Lecture (2hr) Tuesday Feb 16 (12-2)	Ethics in Scientific Research and Writing/ Ethics in EBVM and Learning in Practice	Dr. Austin Kirwan	
Week 6 (February 22-28)			
ZOOM Lecture (2hr) Tuesday Feb 23 (12-2)	Developing an Ethical Professional Approach to Life-long Learning	Dr. Austin Kirwan	
	The ethics of money		
Sakai/Assignment (10 min)	EBVM Part A-Team and Clinical Scenario Pick	Dr. Heidi Janicke	Open Feb 22 Due Feb 28
Week 7 (March 1-7)			
ZOOM Lecture (1hr) Tuesday Mar 2 (12-1)	Informatics for Veterinary Medicine	Ms. Suzanne Paparo	
PANOPTO Lecture (1hr)	Literature Review and Reference Management	Ms. Jill Paterson	Panopto Quiz
Sakai/Assignment (1hr)	EBVM Part B-PICO and Database Search	Dr. Heidi Janicke	Open Mar 1 Due Mar 7
Week 8 (March 8-14) MIDTERMS			

Week 9 (March 15 – 21)			
PANOPTO Lecture (1hr)	Scientific Writing	Ms. Heather Brathwaite	
PANOPTO Lecture (1hr)	Presenting Research	Ms. Jill Paterson	Panopto Quiz
Week 10 (March 22 – 28)			
Sakai/Assignment (2hr)	EBVM Part C- Appraisal	Dr. Heidi Janicke	Open Mar 15 Due March 28
PANOPTO Lecture (1hr)	Practice Culture-An Introspective Approach	Dr. Heather Douglas	
Sakai/Assignment/(1-2hr)	Learning from >6ft Away	Dr. Heather Douglas	Open Mar 22 Due Mar 28
Week 11 (March 29 – April 4)			
ZOOM Lecture (2hr) Tuesday Mar 30 (12-2)	CV and Letter of Intent Workshop	Dr. Kerri Nigito	
Sakai/Assignment (1-2hr)	CV/Letter of Intent Writing	Dr. Kerri Nigito/ Faculty Mentors	Open Mar 29 Due April 4
Week 12 (April 5 – 11)			
PANOPTO Lecture/Forum (1hr)	Escape Debt-Make Room for Success	Dr. Heather Douglas	Forums: Open Apr 5 Due April 11
PANOPTO Lecture (30 min)	Wellness Effects of Budgeting, Debt Management and Practice Culture	Dr. Heather Douglas	
Sakai/In class Assignment (30 mins)	Budget Analysis	Dr. Heather Douglas	Open Apr 5 Due Apr 11
Week 13 (April 12 – 18)			
Sakai/Self-Assessment	Communication Self-Assessment	Dr. Nicki Wise	Open Feb 9 Due Apr 18
Week 14 (April 19 – 25)			
ZOOM Lecture (2hr) Tuesday April 13 (12-2)	Navigating towards Internship and Residency/Non-Traditional Career Paths	Dr. Kerri Nigito	

Domain 3 Ethics: Professional Development Group Meeting

<p>Weeks 5,6,7</p> <p>Feb 15 Feb 22 Mar 1</p> <p>1:30-3:30pm AST (2 hrs)</p>	<p>Ethics and Welfare: Case Scenario Discussion</p> <p>ONE session per student Reserve all dates until you get confirmation of your date</p>	<p>Dr. Austin Kirwan Faculty Mentors</p>
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Domain 4 Communication: Live Simulation Labs

<p>Weeks 4-12 (Either a Monday or Tuesday)</p> <p>Feb 9 Feb 15 Feb 22 Mar 1 Mar 16 Mar 22 Mar 29 Apr 13</p> <p>1:30-4:30pm AST (3hrs)</p>	<p>Communication Live Simulation Labs:</p> <p>ONE session per student Reserve all dates until you get confirmation of your date</p> <p>20-minute Self-Assessment Due April 18th 11:55pm AST</p>	<p>Dr. Nicki Wise Communication Coaches</p>
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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT

PROFESSIONAL DEVELOPMENT III SYLLABUS (2 credits)

LAMS 543 TERM 3

Spring 2021

I. Course Faculty and Staff Information

Co-Course Directors:

Adria Rodriguez, DVM, MSc, CVA, CVCH, MS TCVM
Associate Professor, Small Animal Medicine and Surgery, Professional Development
Wellbeing, Diversity and Inclusion Officer, SVM

Email: AIRodriguez@sgu.edu

Office Hours: By appointment on Zoom

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 on Zoom

Course Faculty:

Domain 1: Personal Development (PD) - Dr. Kerri Nigito (nigker1@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, Panopto, Assignments, Forums)
- 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
- V. Recommended resources:** N/A
- 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**
- 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

The course will be graded Pass/Fail.

100%-69.5% = Pass

<69.5% = Fail

Evaluation	Weight	Grade
Wellness Domain Reflection	10%	TBD
Ethics Domain Reflection	5%	50 points
Ethics Self-Study Forum	5%	P/F
BFL Forums (3)	10%	P/F
PD Reflection	5%	TBD
EBMV Forum	5%	P/F points
Communication Assignment	10%	P/F
PD Mentor Meeting	10%	P/F
Professionalism evaluation at midterm	20%	16 points
Professionalism evaluation end of term	20%	16 points

- A. A grade of passing will be determined by:
- i. Successful completion of assignments (see below)
 - ii. Mandatory attendance-Faculty mentor meeting
 - iii. Mandatory attendance/engagement in the course content which includes:
 1. Attendance of all synchronous Zoom sessions
 2. Review of all asynchronous recorded seminars
 3. Completion of asynchronous forums 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 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. Open dates are listed on the assignment and schedule.

1. Domain 1 PD: Personality Traits and Your Professional Life Assignment (**OPEN January 18th/DUE January 24th 11:55pm**)
2. Domain 2 W: Reflective Journaling- Emotional Intelligence, eCPR, Perfectionism, Impostor Syndrome and YOU (**OPEN March 1/DUE March 7-Sunday 11:55pm**)

All students will provide reflections on the topics of eCPR, perfectionism and imposter syndrome in the format and platform provided for the assignment in Sakai.

3. Domain 3 EW: Self-Study and Lecture Discussion Preparation (**OPEN March 15/DUE March 21 11:55 pm**)
4. Domain 3 EW: Reflective Journaling-My current thoughts on Ethics and Welfare (**OPEN April 5/DUE April 11 11:55pm**)
5. Domain 4 C: Communication - Medical Errors (**OPEN March 15/DUE April 4th 11:55pm**)

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.

6. Domain 5 BFL: 3 Forums Weeks 13 and 14 (See schedule for topics and open and due dates)
7. Domain 6 EBVM: Fostering Wellbeing by Practicing EBVM Forum (**OPEN February 15th/DUE February 21 11:55pm**)

C. Faculty Mentor/Group Meeting:

Domain 2 Wellness Professional Development Meeting:

Students in their faculty/mentor groups will reflect and discuss the basics of emotional CPR, impostor syndrome and perfectionism, and emotional intelligence and growth mindset and the impact in their own personal and professional lives.

Groups will meet during ONE of the proposed dates within Weeks 9, 10, 11: March 15, 23, or 30th. The times will be 1:00-3:00pm 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 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 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, engagement, and assignment and forum 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

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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 by Sunday 11:55pm AST of the week of the missed lecture.

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 11:55pm 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 attend an examination (Sakai quiz/test or ExamSoft) 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 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 Course Director and the School. Failure to adhere to attendance and engagement guidelines 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 Lecture and Activity Schedule (All times in AST)

LAMS 543 Seminar Schedule– Fall 2020

Modality/Activity/ Duration/Date/Time	Lecture Topic	Faculty	Open Date/ Due Date
Week 1 (January 18-24)			
ZOOM Lecture (1hr) Monday Jan 18 (12-1)	Welcome/Course Logistics/Wellness Check In	Dr. Adria Rodriguez	
Sakai Assignment (1-2hr)	Personality Traits and Your Professional Life	Dr. Kerri Nigito Dr. Adria Rodriguez	Open Jan 18 Due Jan 24
Week 2 (January 25-31)			
ZOOM Lecture (2hr) Monday Jan 25 (12-2)	Emotional Intelligence in Veterinary Medicine: Self-Awareness and Self- Regulation	Dr. Adria Rodriguez	
Week 3 (February 1-7)			
ZOOM Lecture (2hr) Monday Feb 1 (12-2)	Emotional Intelligence in Veterinary Medicine: Social Awareness and Relationship Management	Dr. Adria Rodriguez	
Week 4 (February 8 -14)			
ZOOM Lecture (2hr) Monday Feb 8 (12-2)	Emotional CPR (eCPR): Connecting, emPowering and Revitalizing others in time of crisis	Dr. Adria Rodriguez	
Week 5 (February 15 -21)			
ZOOM Lecture (1hr) Monday Feb 15 (12-1)	Imposter Syndrome in Vet Med	Dr. Adria Rodriguez	
Sakai Forum (1hr)	Fostering Wellbeing by Practicing EBVM	Dr. Heidi Janicke/ Dr. Adria Rodriguez	Open Feb 15 Due Feb 21
Week 6 (February 22-28)			
ZOOM Lecture (2hr) Monday Feb 22 (12-2)	Perfectionism and Veterinary Medicine	Dr. Adria Rodriguez	
Week 7 (March 1-7)			
Sakai Assignment (2hr)	Reflective Journaling: Perfectionism and Imposter Syndrome	Dr. Adria Rodriguez	Open Mar 1 Due Mar 7
Week 8 (March 8-14) MIDTERMS			

Week 9 (March 15 – 21)			
PANOPTO Lecture (2hr)	Difficult Conversations: Communicating about Medical errors	Dr. Nicki Wise Dr. Talia Guttin	
Sakai Forums (2hr)	Self-Study in Preparation for Ethics Lectures	Dr. Austin Kirwan	Open Mar 15 Due Mar 21
Week 10 (March 22 – 28)			
ZOOM Lecture (2hr) Monday Mar 22 (1-3)	Clinical Decision Making I	Dr. Austin Kirwan	
Week 11 (March 29 – April 4)			
ZOOM Lecture (1hr) Monday March 29 (1-2)	Clinical Decision Making II	Dr. Austin Kirwan	
PANOPTO Lecture (1 hr)	AVMA PLIT Medical Errors	Dr. Jennifer Frey AVMA PLIT	Any questions should be referred to Dr. Wise
Sakai Assignment (1-2hr)	Medical Error Reflection	Dr. Nicki Wise Dr. Talia Guttin	Open Mar 15 Due Apr 4
Week 12 (April 5 – 11)			
ZOOM Lecture (1hr) Monday Apr 5 (1-2)	Professional Conduct, Negligence, and Employment Law, and Support networks	Dr. Austin Kirwan	
Sakai Forum (1-2hr)	Reflective Journaling: My Growing Knowledge in Ethics	Dr. Austin Kirwan	Open Apr 5 Due Apr 11
Week 13 (April 12 – 18)			
PANOPTO Lecture (1hr)	Budgeting for the Savvy Vet Student: Saving, Spending, and Living Large	Dr. Heather Douglas	
Sakai Forum (1hr)	Budgeting in Perpetuity	Dr. Heather Douglas	Open Apr 12 Due Apr 18
PANOPTO Lecture (1hr)	Your Best Self as a Part of the Best Team	Dr. Heather Douglas	
Sakai Forum (1hr)	Your Role as an Effective Team Member and Veterinary Leader	Dr. Heather Douglas	Open Apr 12 Due Apr 18
Week 14 (April 19 – 25)			
PANOPTO Lecture (1hr)	Workplace Culture: Avoiding the Shock	Dr. Heather Douglas	
Sakai Forum (1-2hr)	Purpose is Key/The Impact of Communication and Leadership on Practice Culture	Dr. Heather Douglas	Open Apr 19 Due Apr 25

Professional Development Group Meeting: Domain 2 Wellness

Weeks 9, 10, 11 March 15 March 23 March 30 1:00-3:00pm AST	Emotional Intelligence, eCPR, Perfectionism, Impostor Syndrome, Growth Mindset and YOU	Dr. Adria Rodriguez/ Mentors
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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT

LIVESTOCK MEDICINE I SYLLABUS (2 credits)

LAMS 544 TERM 5

SPRING 2021

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: Online and Cassia First Floor

Office Hours: Zoom (see schedule or on request) and Forums

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 the Sakai course for resources being used.

III. Prerequisite and/or co-requisite courses

Current 5th 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 516 (Large Animal Surgery 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. 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

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 Learning 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 Learning Outcomes

See Appendix 1

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix 2

XII. Course Schedule

See Appendix 3

XIII. Grading and assessment policy, and grading rubrics

Grades for this course will be based on review questions, assignments, and 2 exams.

- The review questions are from the previous material in LAMS 503 Introduction to Clinical Medicine livestock topics and the LAMS 544 materials. There is approximately 1 question per week or topic and it is located in the Sakai Lessons for that week/topic. This question **MUST** be answered in order to access the material for the week/topic.
- The assignments are untimed but must be completed by the due date.

Zoom cases/office hours and topic study questions are optional.

Topics and points are as follows: Due dates are posted in the Schedule (Appendix 3), and on the Sakai Lessons and Calendar.

Assessment	Points
Weekly review question	5
Neonatal assignment	5
GI assignment	5
Midterm exam	35
Final exam	40
Total	90

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 highly recommended to look at the weekly plan at the start of each week in the Sakai Lessons. A tasks checklist and links to all the materials for the week/topic will

be provided. Reminders and due dates will be listed at the start of each week, in the calendar, and in a weekly email announcement sent to your SGU email address.

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 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. Participation in the Zoom cases, office hours, and review sessions are optional, no new materials will be covered, but materials will be integrated and applied in the cases discussed. If you are having difficulty with the subject matter, are unsure of terminology, etc. please post in the Sakai Forum, email me, ask a classmate, or check reputable sources on the internet. Reading comments after the end of term about lack of understanding of livestock terminology is too late to help you out.

You must notify the instructor BEFORE the due date to request an extension for an assignment. Valid reasons as posted in the student manual.

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/participation policy

Students are expected to be available during the standard 8am-5pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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

You must notify the instructor BEFORE the due date to request an extension for an assignment. Approval requires a valid reason as posted in the student manual.

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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 quiz, examination, or assignment.

Students who have technical issues during the examination MUST inform the Course Director (s) (Dr. Stacey Byers 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. 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

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Appendix 1: Topics and Lecture Learning Objectives

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.

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.

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.

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.
4. Develop treatment and control/prevention plans for neonatal scours and sepsis.

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.
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.

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.

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.

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.

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.

Musculoskeletal System

1. Describe the etiology, pathophysiology, treatment, and prevention of foot disorders.
2. Describe the pathophysiology, management, and prognosis for recumbent animals.
3. Describe the etiology, pathophysiology, clinical signs, treatment, and prevention of muscular and neuromuscular disorders.

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.

Appendix 2: PLO to CLO mapping

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>

<p>D. Recognize emergency presentations and determine appropriate management strategies.</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 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</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>agents in food producing animals.</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>

Appendix 3 – Schedule

- Panopto times are based on recorded time and do not include the time to complete the Panopto popup questions. These questions are not graded and not available if watching a downloaded video.
- Assignment times – 2 hours count toward 1 lecture hour.

Week	Date	Topics	Assignment Closes Tues 11:59 AST	Zoom Wed 12-1 pm AST
1	18-Jan	Introduction and Review: History (11 min) PE (47 min) Livestock Pharmacology (59 min) Livestock Antimicrobials (52 min)		
2	25-Jan			
3	1-Feb	Ophthalmology: Part 1 (35 min) Part 2 (30 min) Cardiology: Part 1 (38 min) Part 2 (43 min)		3 Feb w/LAMS 516
4	8-Feb	Neonatology: Neonatology Part 1 (34 min) Neonatology Part 2 (26 min) Diarrhea Mechanisms Review (optional 20 min) Endemic Diarrhea (35 min) Sporadic and Misc Diarrhea (16 min) Diarrhea Treatment (47 min)		10-Feb
5	15-Feb	Septic Neonates (9 min)	Feb 23 (20 min)	
6	22-Feb	Urinary Tract: Introduction (22 min) Urolithiasis Part 1 (26 min) Urolithiasis Part 2 (42 min)		24-Feb
7	1-Mar	Lower & Upper UT Disorders (35 min)		3 Mar w/LAMS 516
8	8-Mar	LAMS 544 Midterm Tuesday March 9		

Week	Date	Topics	Assignment Closes Tues 11:59 AST	Zoom Wed 12-1 pm AST
9	15-Mar	Gastrointestinal Tract: Oral Cavity, Esophagus Part 1 (38 min) Oral Cavity, Esophagus Part 2 (52 min) Retic, Rumen, Omasum Part 1 (33 min) Retic, Rumen, Omasum Part 2 (42 min) Retic, Rumen, Omasum Part 3 (21 min) Retic, Rumen, Omasum Part 4 (24 min) Abomasum Part 1 (45 min) Abomasum Part 2 (33 min) Vagal Syndromes (35 min) Intestines Part 1 (17 min)	20 April (20 min)	17-Mar
10	22-Mar	Intestines Part 2 (27 min)		
11	29-Mar	Adult Diarrhea Part 1 (34 min)		31-Mar
12	5-Apr	Adult Diarrhea Part 2 (20 min)		
13	12-Apr	Musculoskeletal System: Feet and Lameness Part 1 (37 min) Feet and Lameness Part 2 (22 min) Small Ruminant Lameness (24 min) Above the Feet Part 1 (35 min) Above the Feet Part 2 (33 min)		14 Apr w/LAMS 516
14	19-Apr	Recumbency Issues (21 min)		
15	26-Apr	Dermatology: Part 1 (42 min) Part 2 (31 min) Part 3 (49 min)		5-May
16	3-May			
17	10-May	LAMS 544 Final Thursday May 13		



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

LARGE ANIMAL SURGERY II (2 Credits)

LAMS 545 TERM 6

SPRING 2021

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: 2021-01-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. 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 <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 conditions

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 conditions

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. Classify fractures
5. Describe the principles of fracture repair

6. Recognise causes of failure of repair
7. Identify musculoskeletal emergencies of the horse in field situations
8. Determine the appropriate first aid for these conditions
9. Review the physiology and pathology of endochondral ossification leading to developmental orthopaedic disease in the horse
10. Discuss the aetiology and pathogenesis of osteochondrosis and osteoarthritis
11. Identify the clinical signs of osteochondrosis and osteoarthritis and determine appropriate diagnostic techniques to confirm the conditions
12. Determine the appropriate treatment and prevention plan and provide a prognosis for individual cases of osteochondrosis and osteoarthritis
13. Review function, structure and biomechanics of tendons and ligaments
14. Discuss the aetiology and pathogenesis of injury and repair in tendons and ligaments
15. Identify the clinical signs of tendon and ligament injury and determine appropriate techniques for diagnosis
16. Discuss the aetiology and pathogenesis of angular and flexural limb deformities in the horse
17. Identify the clinical signs of angular and flexural limb deformities in the horse and determine appropriate techniques for diagnosis
18. 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
19. Describe the aetiology and pathogenesis of pathological conditions of the foot and limb in the horse
20. Identify the clinical signs of pathological conditions of the foot and limb in the horse and determine appropriate techniques for diagnosis
21. 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.

	<p>PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.</p> <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>
<p>CLO B Identify the aetiology and pathogenesis 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.</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>CLO C Recognize the clinical signs 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.</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>
<p>CLO D Determine appropriate techniques for diagnosis 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.</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>
<p>CLO E Determine treatment and management plans for 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.</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 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>

	PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
CLO F Provide a prognosis for individual cases 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 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 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 (hjanicke@sgu.edu) 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 and ExamID. 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 (including Panopto and Zoom cases). 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 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 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 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](#)
 - 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)	Length (min)	Zoom (optional, synchronous) Thursdays 1:30pm AST	Assessment (open Friday, due Wednesday)
0	Jan 11-15	Intro to LAS II Equine dentistry I Equine dentistry II Equine dentistry III	20 13 20 43		Quiz 1 (5 points) Dentistry
1	Jan 18-22	The acute abdomen I The acute abdomen II GIT conditions 1	22 36 28	LAMS 545 Office hours	
2	Jan 25-29	GIT conditions 2 GIT conditions 3	22 33	LAMS 545 GIT cases (Friday 12pm AST)	Quiz 2 (10 points) Acute abdomen & GIT Deadline Quiz 1

3	Feb 1-5	Lameness exam I Lameness exam I Diagnostic analgesia	20 31 28		
4	Feb 8-12	Diagnostic imaging Principles of fracture repair	20 19		Quiz 3 (10 points) Lameness exam (incl. DA and DI) Deadline Quiz 2
5	Feb 15-19	Fracture first aid Osteoarthritis I Osteoarthritis II	24 17 25		
6	Feb 22-26	Osteochondrosis I Osteochondrosis I Foot conditions I	13 16 29		Quiz 4 (5 points) Fracture and first aid Deadline Quiz 3
7	Mar 1-5	Foot conditions II	30	LAMS 545 Foot cases	
8	Mar 8-12	Digit conditions Distal limb conditions	25 19	LAMS 545 Digit and distal limb cases 1	Deadline Quiz 4
9	Mar 15-19	Tendon and ligament injury I Tendon and ligament injury II	18 28	LAMS 545 Digit and distal limb cases 2	
10	Mar 22-26	Angular and flexural limb deformities I Angular and flexural limb deformities II	26 17	LAMS 545 Tendon and DOD cases	
11	Mar 29-Apr 2	Upper limb conditions I Upper limb conditions I	28 36	LAMS 545 Upper limb cases (FL)	
12	Apr 5-9	Respiratory conditions I Respiratory conditions II	24 24	LAMS 545 Upper limb cases (HL) 2	Quiz 5 (15 points) Lameness conditions
13	Apr 12-16	Respiratory conditions III Respiratory conditions IV	17 31	LAMS 545 Respiratory cases	
14	Apr 19-23	Catch-up		LAMS 545 Q&A for exam	Deadline Quiz 5
15	Apr 26-30	EXAM WEEK	FINAL Monday April 26 th 12pm AST cumulative (45 questions)		
16	May 3-7	EXAM WEEK			



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
- IV.** Additional recommended resources will be provided electronically on Sakai or in class.
- V. Recommended resources:** Text: [The Art of Veterinary Practice Management](#), by Mark Opperman, CVPM, et al. **ISBN-13:** 978-0935078749 **ISBN-10:** 0935078746
- VI. 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) Case Analysis (20 points)
- c) PowerPoint Presentation to Class (20 points) due at the end of the course
- d) Final Project -Write-up, Source and Research (40 points) due at the end of 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: 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
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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 culture that motivates optimal workforce performance.	B5, C8	3, 4, 7, 13

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 Spring 2021 Weekly Schedule

Week	Dates	Lectures/Content	Format/Assignments
1	11 – 15 Jan	Mission, Vision, and Values. Business Plan. Funding	Live Zoom Webinar 2 hour 1/15 10am - 12pm AST
2	18-22 Jan	Business Administration Team, Equipment and Inventory Purchases	Panopto lecture (1)
3	25 – 29 Jan	Payroll and Benefits. Taxes	Panopto (1) + Case Study Assignment due 1/31
4	1 – 5 Feb	Selection of Practice Software. Regulatory.	Live Zoom Webinar 1-hour 2/5 11am-12pm AST
5	8 – 12 Feb	Establishing Fees Price in the Absence of Value	Panopto (1)
6	15 – 19 Feb	Overcoming Barriers. Metrics - Tracking New Clients, Tracking Success, Budgeting.	Live Zoom Webinar 1-hour 2/19 11am-12pm AST + Business Plan Assignment due 2/21
7	22 – 26 Feb	No content	
8	1 – 5 March	Wellness Plans Financial Management	Panopto (1)

9	8 - 12 March	Marketing. Social Media. Management. Communication. Human Resources. Staff Management and Leadership. Hospital Flow.	Live Zoom Webinar 2 hours 3/12 9am-11am AST
10	15 - 19 March	No Content	
11	22 - 27 March	No Content	
12	29 March - 2 Apr	No Content	
13	5 - 9 April	Wrap-up and Student On-Line Business Plan and Evaluation Presentations	Live Zoom Webinar 4/9 9am-12pm AST+ Student Business Plan Presentations Business Plan and Powerpoint due 4/11
14	12 - 16 Apr	No Content	
15	19 - 23 Apr	No Content	
16	26-30 Apr	No Content	



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

LARGE ANIMAL SURGERY AND MEDICINE DEPARTMENT

Professional Development IV Syllabus (2 credits)

LAMS 547 (Term 4)

SPRING 2021

I. Course Faculty and Staff Information

Course directors:

Dr Heidi Janicke (Domain 6)
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

Dr. Heather Douglas (Domain 5)
DVM, MBA, CVA
Tel: 651-894-4527
Email: hdouglas@sgu.edu
Office hours: by appointment

Other lecturers/faculty:

Dr. Kerri Nigito (Domain 1)
Email: nigker1@sgu.edu

Dr. Adria Rodriguez (Domain 2)
Email: airodriguez@sgu.edu

Dr. Austin Kirwan (Domain 3)
Email: barnlodge@aol.com

Dr. Nicki Wise (Domain 4)
Email: lwisel@sgu.edu

Faculty mentors

Course assistant:

Ms. Keshia John
Email: [kjoh5@sgu.edu](mailto:kjohn5@sgu.edu)

II. Course location

MyCourses: 2021-01-LAMS547-V-0-Professional Development IV

All synchronous (Zoom) and asynchronous (Panopto) lectures, additional Resources, Tests & Quizzes, Assignments, Checklists, etc. will be available through the Lessons tab on the LAMS 547 MyCourses site. Please use the checklists to ensure you have covered all the core material.

III. Prerequisite and/or co-requisite courses

Current fourth term SVM student
LAMS 541 - Professional Development I
LAMS 542 - Professional Development II
LAMS 543 - Professional Development III

IV. Required resources

A functional computer with microphone and webcam.

V. Recommended resources

None

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

This course is the fourth of 6 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 Learning Outcomes

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

- i. 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 Learning Outcomes

Lessons	Outcomes
Domain 1: Professionalism	<ol style="list-style-type: none"> 1. Define servant leadership 2. Recognize opportunities for servant leadership in one's career and personal life 3. Discuss historic and current societal expectations of the veterinarian 4. Understand how to cope with these expectations while maintaining a healthy work life balance 5. Discuss the role of future veterinarians In maintaining or changing these expectations 6. Understand the Important Issues facing the veterinary profession 7. Reflect on what the average veterinarian can do to address these Issues 8. Define conflict and the mechanisms by which It can be handled 9. Determine their conflict management style and develop skills for dealing with all styles during times of conflict
Domain 2: Wellness	<ol style="list-style-type: none"> 1. Define diversity and inclusion 2. Apply the principles of diversity and inclusion to their personal lives 3. Describe implicit bias and how it affects daily interactions 4. Describe privilege and how it affects daily interactions 5. Reflect on areas of improvement related to diversity and inclusion as an individual and as a profession

Domain 3: Ethics and Welfare	<ol style="list-style-type: none"> 1. Summarize the concept of social bias, conscious or subconscious: recognize it and integrate it into professional practice 2. Identify and predict conflict and create methods for its resolution 3. Compare and contrast professional misconduct and clinical negligence 4. Identify issues of fitness to practice by the student and registered professional, reflect on one's findings and generate an action plan to address issues found. 5. list the components of clinical governance and measure these using a variety of methods
Domain 4: Communication	<ol style="list-style-type: none"> 1. Review the basics of clinical communication with the Calgary Cambridge Guide. 2. Identify appropriate non-verbal communication skills, open ended questions and active listening skills. 3. Discuss the key components of initiating a client interaction and negotiating the agenda. 4. Develop relationship building statements for use during client interactions 5. Define feedback and review guidelines for giving and receiving it effectively. 6. Practice initiating a session, negotiating an agenda and asking open ended questions 7. Practice giving feedback to their peers. 8. Discuss the important role that cultural sensitivity plays in client communication 9. Develop a strategy to ensure cultural sensitivity is a part of one's daily practice
Domain 5: Business & Financial Literacy	<ol style="list-style-type: none"> 1. Perform a self-assessment of the personal budget and detect areas for improvement
Domain 6: Evidence-Based Veterinary Medicine	<ol style="list-style-type: none"> 1. Explain the concept and importance of EBVM. 2. Locate and identify how to complete the online course 3. Explain the concept of EBVM 4. Describe the relevance and importance of EBVM to veterinary practice 5. Construct a generalized example of the EBVM cycle 6. Describe why a well-formed question is fundamental to the EBVM process, and avoid the common pitfalls in asking questions 7. Identify clinical questions in practice

	<ol style="list-style-type: none"> 8. Construct a clinical question correctly 9. Identify which information sources can help to find the best evidence for veterinary medicine 10. Establish how to get access to these resources in clinical practice 11. Translate a clinical question into a database search strategy and understand the fundamentals of efficient searching 12. Manage references and report search strategies 13. Describe the most important factors that should be appraised when reading a paper 14. Explain how to appraise literature and other information 15. Use tools that support the appraisal process 16. Use a structured framework to determine whether the evidence is applicable to the vet, the patient and the environment 17. Describe ways of communicating new evidence to colleagues and clients 18. Construct a strategy to maximize the chances of successfully implementing evidence-based changes in a practice environment 19. Explain why it is important to assess/audit the implementation of EBVM in practice 20. Describe how to assess/audit in practice 21. Use practice examples to demonstrate the use of clinical audit and the assessment of EBVM in practice.
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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 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

Date / Hour	Lecture topic	Faculty	Assignment
Week 1 (January 18 – 24)			
1-hour Zoom	Conflict Management	Kerri Nigito	Pre-session Conflict Management Styles Quiz (15-minute assignment) Due before the zoom session on Wednesday Jan 20th
1-hour Panopto	Intro to Prof Dev IV (10min) Intro to Domain 6: EBVM online course (50 min)	Heidi Janicke	None
Week 2 (January 25-31)			
2-hour Zoom	Diversity and Inclusion in Veterinary Medicine	Dr. Adria Rodriguez	None
Week 3 (February 1 –7)			
1-hour Zoom	Implicit Bias and Privilege: The Importance of Bringing the Subconscious to Consciousness	Dr. Adria Rodriguez	None
1-hour Zoom	Cultural Sensitivity in the Workplace and Life	Dr. Adria Rodriguez	None
Week 4 (February 8 – 14)			
1h Zoom	Social bias	Austin Kirwen	None
2-hour self-study	X	X	Reflection on Diversity, Inclusion, Bias, Privilege and Cultural Sensitivity (2-hour assignment) Due Sunday Feb 14 th 11:55pm AST
Week 5 (February 15 – 21)			

2-hour self-study	ABC of EBVM and ASK http://www.ebvmllearning.org	Heidi Janicke	None
30 min Panopto	The savvy vet students and expert budgeter	Heather Douglas	Updated budget to account for unexpected circumstances (1-hour assignment) Due Sunday April 11 th 11:55pm AST
Week 6 (February 22- 28)			
2-hour zoom	Servant Leadership (Faculty Mentor Meeting)	Kerri Nigito	None
Week 7 (March 1 – 7)			
1-hour zoom	Ethical aspects of conflict	Austin Kirwen	None
2-hour self-study	Acquire http://www.ebvmllearning.org	Heidi Janicke	None
Week 8 (March 8 - 14) – MIDTERMS			
Week 9 (March 15 – 21)			
2-hour Zoom	Societal expectations	TBD	Reflection Question on societal expectations in Lessons (20-minute assignment)
Week 10 (March 22 – 28)			
1-hour Zoom	Professional misconduct	Austin Kirwen	None
2-hour self-study	Appraise http://www.ebvmllearning.org	Heidi Janicke	None
Week 11 (March 29 – April 4)			
2-hour Zoom	Issues currently facing the profession	Kerri Nigito	None
Week 12 (April 5 – 11)			
1-hour Panopto	Review of communication skills	Nicki Wise	None
0.5h Panopto 0.5h Panopto	Feedback: Review lecture Connecting with your client	Nicki Wise	None
Week 13 (April 12 – 18)			
2-hour self-study	X	Nicki Wise	Peer review assignment (2-hour assignment) Due April 18 th 11:55pm AST
1-hour Zoom	Fitness to practice	Austin Kirwen	None

Week 14 (April 19 – 25)			
1-hour Zoom	Clinical governance	Austin Kirwen	None
2-hour self-study	Apply http://www.ebvmlearning.org	Heidi Janicke	None
Week 15 (April 26 – May 2)			
2-hour Zoom	Complaint workshop	Austin Kirwan	MANDATORY
2-hour self-study	Assess http://www.ebvmlearning.org	Heidi Janicke	None
Week 16 & 17 (May 3 – May 16) FINALS			
30 minutes	FINAL EXAMS	Heidi Janicke	

XIII. Grading and assessment policy, and grading rubrics

The course will be graded Pass/Fail.

100%-69.5% = Pass
<69.5% = Fail

Evaluation	Weighted	Grade
Wellness reflection	15%	P/F
Attended Ethics zoom session	10%	P/F
Video peer/ self-evaluation	15%	P/F
Budget check-in	5%	P/F
EBVM exam	15%	20 points
Professionalism evaluation at midterm	20%	16 points
Professionalism evaluation end of term	20%	16 points

A grade of passing will be determined by:

- i. Successful completion of all assignments (see below)
- ii. Mandatory attendance at the Faculty mentor meeting
- iii. Mandatory engagement in the course content which includes:

- a. Attendance of all synchronous Zoom sessions
- b. Review of all asynchronous recorded seminars
- c. Completion of “in-class” assignments and activities.
- d. Completion of weekly lesson checklists.

No unexcused absences are allowed. Any absences or technical difficulties must be immediately addressed by emailing the course director (Dr. Heidi Janicke hjanicke@sgu.edu and Dr Heather Douglas hdouglas@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:

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. Assignment will open at the start of the relevant week.

1. *Domain 1: Personal Leadership*

Conflict Management Style Quiz

Expected maximum time commitment: 15 minutes

Due: Wednesday January 20th 1:30pm AST

Reflection on Societal Expectations

Expected maximum time commitment: 20 minutes

Due: Sunday March 21st 11:55pm AST

2. *Domain 2: Wellness*

Reflection on Diversity, Inclusion, Bias, Privilege and Cultural Sensitivity

Expected maximum time commitment: 2 hours

Due: Sunday February 14th 11:55pm AST

3. *Domain 3: Ethics & Animal Welfare*

A 2-hour **mandatory** zoom workshop will consider a complaint and how to investigate and conclude it.

This is timetabled as the last of the sessions in the ethics block

Wednesday April 28th 1:30pm AST

4. *Domain 4: Communication Skills*

Video review and self/peer reflection

Expected maximum time commitment: 2h

Due: Sunday April 18th 11:55pm AST

5. *Domain 5: Business & Financial Literacy*

Updated budget to account for unexpected circumstances.

Due: April 11th 11:55pm AST

6. *Domain 6: EBVM*

One Final examination of 30 minutes/ 20 questions (20 points) given in ExamSoft with ExamMonitor and ExamID. Please ensure you read the instructions in XIX and on Sakai to ensure you are set up for the exam ahead of time.

The exam material will come from the online course at <http://www.ebvmllearning.org/>. Questions will be multiple-choice with one single best answer.

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 for self-assessment of understanding of the material and concepts within the [ebvmllearning.org](http://www.ebvmllearning.org/) online course.

XIV. Recommended study strategies

Remain engaged throughout the course to benefit from the various active learning activities.

XV. Instructor's expectations of the student

The student is expected to adhere to the guidelines provided throughout this syllabus including attendance and assignment submission.

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation *is* graded for mandatory sessions. 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.

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

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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) 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.

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 use the most current Examplify version)
 - 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

Appendices:

Appendix A: Professionalism Grading Rubric

Criteria	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
Punctuality	Student is on time for all Zoom sessions and/or communicates with the course director within 2 hours of the session if more than 10 minutes late	Student is more than 10 minutes late and communicates with course director on the same day as the session	Student is more than 10 minutes late and communicate with course director but not on the same day as the session	Student is not on time for Zoom sessions and does not communicate at any time with the course director
Attendance	Student attends all mandatory zoom sessions for the entire duration of the session and/or communicates with the course director within 2 hours of the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and communicates with course director on the same day as the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and communicate with course director but not on the same day as the session	Student misses 1 or more mandatory zoom sessions and/or does not attend for the entire duration of the session (70%) and does not communicate at any time with the course director
Engagement	Student completes module checklists, turns in assignments and completes reflection questions on time and/or communicates with the course director PRIOR to deadline with any technical/medical/personal issues.	Student submitted module checklist, assignment, reflection questions after the deadline and/or not submitted and student communicated with course director the same day of assignment deadline with any	Module checklist, assignment, and or reflection question was not submitted, and student communicated with course director more than 24 hours after assignment deadline with any technical/medical/personal issues	Student does not complete module checklists, turn in assignments and/or complete reflection questions on time and did not communicate with the course director at any time.

		technical/medical/personal issues		
Communication	Student always communicates in a professional tone and timely manner.	Communication is mostly professional and timely with some minor areas of improvement needed.	Communication is generally professional in tone, but often untimely and major improvement is needed.	Student does not communicate in a professional tone and/or timely manner.
Total (16 points)				



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Large Animal Medicine and Surgery Department

Introduction to Livestock *Nutrition* (1 credit)

LAMS 548 Term 4

Spring 2021

I. Course Faculty and Staff Information

Course directors:

Dr. Catherine Werners-Butler Professor DVM, PhD, MRCVS, Dipl. ECEIM

Chair of Large Animal Medicine and Surgery Department

Email: cwerners@sgu.edu

Contact via email and/or zoom office hours

Visiting Professor:

Dr. Threshni Chetty BVMCh

Director: EquineInc3 Consultancy, Gauteng, South Africa

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

Zoom sessions (asynchronous)

III. Prerequisite and/or co-requisite courses

Current registered Term 4 SVM student

IV. Required resources: The required reading / material for each section will collectively come from:

1) Lecture video's and slides (on Sakai).

2) Material covered in previous courses (example: anatomy, physiology, LAMS 501 & 502) is considered appropriate material for examinations)

V. Recommended resources: Links to recommended sources for background information on live-stock nutrition will be provided in Sakai

VI. Accommodation guidelines

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 structured to provide coverage of the fundamental aspects of animal production systems, basic composition of feeds and the constituents of feed that supply nutrients and energy to livestock. The practical component of this course will help students to provide hands on skills and apply nutritional information into feeding of live-stock (including horses). This course is designed to give students a broad understanding of how nutrition is related to animal health, production and performance of different live-stock species at various stages of production cycles

based on energy requirements. Each of the basic nutrition concepts will be discussed in relation to its importance to overall health. Animal Nutrition is included in the veterinary curriculum to aid students in understanding the relationship between nutrients in feeds and the health of domestic animals. It gives you a basic perspective of how we manipulated nutrition for production/performance characteristics and gives you an understanding of abnormalities that may arise during that process.

IX. Course Learning Outcomes

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

A: Introduction to livestock nutrition

1. Appreciate the contribution of animal protein to human nutrition and future trends in the consumption of animal products
2. Review the general basic concepts for animal nutrition

Overlapping concepts related to nutrition for the different livestock species

1. Determine the sources, functions, analysis, signs of deficiency and signs of toxicity for each of the basic nutrient classes and their components in the different livestock species
2. Briefly discuss feedstuff sampling and submission for nutrient analysis
3. Discuss proximate analysis and the Van Soest procedure for fiber analysis.
4. Recognize the different measurements of energy values of a feed.
5. Identify the animal, feedstuff and nutrient parameters used in formulating rations in livestock.
6. Identify the feed classifications of different feed stuffs (roughage, concentrates, supplements, additives etc).
7. Classify, describe the use and compare the different feedstuffs used to feed livestock and understand how processing effects their nutritional value.

B+C+D: Dairy, Beef and Sheep nutrition

1. Determine the nutrition and feeding requirements for the different life stages and production stages of ruminant livestock
2. Identify and explain feed related medical problems in ruminant livestock.

E: Equine nutrition

1. Determine the feeding requirements for the different stages in performance and/or life cycle in the horse.
2. identify and explain feed related medical problems in the horse.

F: Swine nutrition

1. Determine the nutrition and feeding requirements for the different life stages and production stages of swine
2. Identify and explain feed related medical problems in swine

X. **Lesson Learning Outcomes (will be provided in an appendix)**

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.

Course Learning Outcome	SGUSVM Program Learning Outcome
Appreciate the contribution of animal protein to human nutrition and future trends in the consumption of animal products	PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health. PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.

Review the general basic concepts for animal nutrition	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Determine the sources, functions, analysis, signs of deficiency and signs of toxicity for each of the basic nutrient classes and their components in the different livestock species	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Briefly discuss feedstuff sampling and submission for nutrient analysis	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Discuss proximate analysis and the Van Soest procedure for fiber analysis.	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Recognize the different measurements of energy values of a feed.	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Identify the animal, feedstuff and nutrient parameters used in formulating rations in livestock.	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Identify the feed classifications of different feed stuffs (roughage, concentrates, supplements, additives etc).	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.

Classify, describe the use and compare the different feedstuffs used to feed livestock and understand how processing effects their nutritional value	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Determine the nutrition and feeding requirements for the different life stages and production stages of large and small ruminant livestock, swine and equine	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.
Identify and explain feed related medical problems in large and small ruminant livestock, swine and equine	PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.

XII. Course Schedule

Week	Activity/Topic	Format	Time on Task (hrs)
Week 1	General introduction to livestock nutrition	recorded	2
Week 2	Dairy nutrition 1	recorded	1
Week 3	Dairy nutrition 2	recorded	1
Week 4	Beef nutrition 1	recorded	1

Week 5	Beef nutrition 2	recorded	1
Week 6	Sheep nutrition	recorded	1
Week 7	Goat nutrition	recorded	1
Week 8	MIDTERM WEEK		
Week 9	Equine nutrition 1	recorded	1
Week 10	Equine nutrition 2	recorded	1
Week 11	Equine nutrition 3	recorded	1
Week 12	Swine nutrition 1	recorded	1
Week 13	Swine nutrition 2	recorded	1
Week 14	Table assignment deadline		1
Week 15	Case examples & Q&A	Live Zoom (attendance required)	1

XIII. Grading and assessment policy, and grading rubrics

Examinations:

Your final grade will be made up of the following:

Participation: 10%

Assignment: 5%

Sakai quiz: 5%

Final exam: 80%

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 (80% of grade) May 13th**

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
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 (refer student to the student manual page if applicable)

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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) cwerners@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 University.

XIX. ExamSoft policy

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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):

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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

PATHOBIOLOGY DEPARTMENT

BACTERIOLOGY & MYCOLOGY (4 credits)

PTHB 503 (Term 2)

Spring, 2021

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: chulljac@sgu.edu

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 for Spring 2021. Course content will be delivered Online (Sakai): 2021-01-PTHB503-V-0-Bacteriology/Mycology-(21123) via Sakai: My Courses, Syllabus, Recourses, Panopto, Zoom, Tests and Quizzes.

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

The 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 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 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. Utilize 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 Veterinary-related bacterial and fungal pathogens, including their habitats, survival, host range and transmission.
6. List and illustrate the principles of specimen collection and submission for bacterial and fungal specimen including the rationale for specimen 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 Learning Outcomes

The following are summarized breakdown of the lesson learning outcomes (LLOs) of the individual bacterial and fungal species covered in each lecture: For all the bacterial and fungal diseases covered in this course you need to describe the:

1. Etiologic/ agent that causes the bacterial and fungal disease
2. General characteristics of the bacterial and fungal species
3. Classification or family that the organism belongs to
4. Major clinical signs associated with the organism
5. General pathogenesis of the organism
6. Diagnosis of the disease associated with the organism
7. Treatment and the control measures of the organism
8. Other specific feature relevant in differentiating the specific disease associated with the bacterial or fungal species.

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.	1,2,3,4,5,6
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.	5,7,8,9,10
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
21. Create comprehensive treatment plans including prognosis.	9, 10
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 2 3 4	Jan 18 – 22	Al/Am Amadi Afema "	<ul style="list-style-type: none"> • ZOOM 1 – (1 hr, Tuesday, Jan 19. 1-2PM AST*) • Intro to Bacteriology/ Bacterial Morphology /Cultivation /Preservation • Bacterial pathogenesis / Virulence factors • Antimicrobial agents
2	5 6 7 8	Jan 25 – 29	Al/Am Alhassan " "	<ul style="list-style-type: none"> • LAB #1 • Intro to Mycology / Dermatophytes • <i>Aspergillus/ Candida/ Malassezia</i> • Dimorphic fungi, & Mycotoxins
3	9 10-11 12 13	Feb 1 – 5	" " Al/Am Al/AF/AM	<ul style="list-style-type: none"> • Lab diagnosis of bacterial diseases • Biosecurity, sterilization, disinfection • LAB #2 • ZOOM 2 – (2 hrs, Tuesday, Feb 2. 1-3PM AST*): QUIZ REVIEW
4	14 15 16 17	Feb 8 – 12	Af/Al/Am Amadi " Al/Am	<ul style="list-style-type: none"> • Quiz (Mon, February 8, 2021) • <i>Enterobacteriaceae-I</i> • <i>Enterobacteriaceae-II</i> • LAB #3
5	18 19 20 21	Feb 15 – 19	Al/Am Alhassan " Al/Am	<ul style="list-style-type: none"> • ZOOM 3 – (1 hr, Tuesday, Feb 16. 2-3PM AST*) • <i>Corynebacterium group, Rhodococcus,</i> • <i>Actinomyces, Nocardia</i> • LAB #4
6	22 23 24 25	Feb 22 – 26	Alhassan " " Al/Am	<ul style="list-style-type: none"> • <i>Dermatophilus/ Erysipelothrix/ Listeria</i> • <i>Ehrlichia spp</i> • <i>Rickettsia spp</i> • LAB #5
7	26 27-28 29 30	Mar 1 – 5	Alhassan " " Al/Am	<ul style="list-style-type: none"> • <i>Neorickettsia/ Coxiella/Wolbachia</i> • <i>Anaplasma spp/ Heart water</i> • Spirochetes • ZOOM 4 –(2 hrs Tuesday, Mar 2. 1-3PM AST*): MIDTERM REVIEW
Friday, 12th March 2021, 12:00 PM, AST*: MIDTERM EXAMINATION				

***AST – Grenada time**

Dr. Alhassan: Al, Dr. Afema: Af, Dr. Amadi: Am.

Course Schedule: Lectures (Continued)

Week	Lecture	Date (lecture hour/week)	Instructor	Lecture Topic
9	31	Mar 15 – 19	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	Mar 22 – 26	Al/Am/HJ	<ul style="list-style-type: none"> • ZOOM 5 – (1 hr, Tuesday, Mar 23. 1-2PM AST*) • <i>Staphylococcus</i> • <i>Streptococcus</i> • Anaerobes: Neurotoxicogenic <i>Clostridium</i>
	36		Hull-Jackson	
	37		"	
	38		"	
11	39	Mar 29 – Apr 2	"	<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	Apr 5 – 9	Amadi	<ul style="list-style-type: none"> • ZOOM 6 – (1 hr, Tuesday, Apr 6. 1-2PM AST*) • <i>Campylobacter, Helicobacter</i> • LAB #8 • <i>Brucella, Lawsonia</i> • <i>Mycoplasma</i> -1 & 2
	44		Al/Am	
	45		"	
	46		Alhassan	
	47		"	
13	48	Apr 12 – 16	"	<ul style="list-style-type: none"> • <i>Bordetella, Moraxella</i> • <i>Chlamydia</i> group • Non spore forming Anaerobes • LAB #9
	49		"	
	50		"	
	51		Al/Am	
14	52	Apr 19 – 23	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	Apr 26 – 30	Alhassan	<ul style="list-style-type: none"> • <i>Mycobacterium</i> spp, <i>Bartonella</i> • LAB #11 • ZOOM 7 – (2hrs, Tuesday, Apr 27. 1-3PM AST*): FINAL REVIEW
	58-59		Al/Am	
	60		Al/Am	
Friday, May 14th, 2021, 12:00 PM, AST*: FINAL EXAMINATION				

***AST – Grenada time**

Dr. Alhassan: Al, Dr. Afema: Af, Dr. Hull-Jackson: HJ, Dr. Amadi: Am.

Course Schedule: Laboratories

For Spring 2021 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 (Feb-10, 11:30pm AST*)	
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 (Feb-24, 11:30pm AST*)	
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 (Mar-31, 11:30pm AST*)	
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 (Apr-14, 11:30pm AST*)	
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 (Apr-28, 11:30pm AST*)	

*AST – Grenada time

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.

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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)
SPRING 2021**

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:** The “Lessons” Tool will incorporate Panopto video lectures, power points, review DES documents/power points and study guides. A Google Doc link will be sent to the class for communication as well as weekly optional Zoom sessions and announcements.
- 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:** Computer laptop with functional camera and microphone. Course notes (on Sakai in “Resources” folders). The lab manual is optional however it will be helpful when studying.
- V. Recommended Resources:** Computer laptop with functional camera and microphone. 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 is readily available on Alibris or Abe Books. It is not deeply comprehensive, but a good overall review with information on diagnosis and treatment.
- Other useful books for reference are available online.

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 postmortem 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**

-
- **The 5 Assignments and 2 Quizzes are “open book”.**
 - **Estimated time to complete a 2-point Assignment (8 questions) is 20 minutes (5 Assignments X 2 points each = 10 points)**
 - **The two quizzes are 10 points each (20 points). If 10 questions, the estimated time to complete will be 20 minutes. If 20 questions (0.5 points each),**

estimated time to complete is 40 minutes.

- The proctored midterm & final exams are 50 points each (100 points).

Listen to the Panopto lectures (50 minutes each).

The power points will correspond to the Panopto lectures.

Read the course notes and lab manual for detailed information.

<u>DATE</u>	<u>LECT</u>	<u>LECTURER</u>
		Read the course notes and lab manual for detailed information.
		<u>TOPIC</u> <u>TIME</u>
MO 18 JAN	1	Introduction to Veterinary Parasitology (50 m)
TU 19 JAN	2	Introduction to Protozoa (50 min)
WE 20 JAN	3	Trichomonads (50 min)
FRI 22 JAN	2:20 – 3:30	Optional Zoom Session (1 hour)
MO 25 JAN	4	Trichomonads (continued) 50 minutes
TU 26 JAN	5	<i>Histomonas</i> (50 minutes)
WE 27 JAN	6	<i>Giardia</i> (50 min) Mrs. Springer
TH 28 JAN	7	<i>Entamoeba & Balantidium coli</i> (50 minutes)
FRI 29 JAN	2:30-3:30	Optional Zoom Session (1 hour)
MO 1 FEB	50	8 <i>T. cruzi & Leishmania</i> (Hemoflagellates)
TU 2 FEB	min	9 <i>Leishmania</i> (continued) – 50 min
WE 3 FEB		10 Introduction to Apicomplexa – 50 min
TH 4 FEB		11 <i>Eimeria & Cystoisospora</i> – 50 min
FRI 5 FEB	2:30-3:30	Optional Zoom Session (1 hour)
		ASSIGNMENT # 1 (2 POINTS) POSTED ON SAKAI (due February 12 by 5 pm AST (Grenada time) ~ 20 minutes to complete
MO 8 FEB	12	<i>Cryptosporidium</i> (50 minutes)

TU 9 FEB	13	<i>Sarcocystis</i> (50 minutes)	
WE 10 FEB	14	<i>Toxoplasma gondii</i> (50 minutes)	
TH 11 FEB	15	<i>Toxoplasma gondii</i> (continued) – 50 minutes	
FRI 12 FEB	2:30-3:30	Optional Zoom Session (1 hour) ASSIGNMENT # 1 DUE BY 5 PM AST (Grenada time) – POSTING ASSIGNMENT #2 ON SAKAI	Dr. Pinckney
MO 15 FEB	16	<i>Neospora</i> (50 minutes)	
TU 16 FEB	17	Introduction to Cestodes (50 minutes)	Dr. Pinckney
WE 17 FEB	18	Cestodes (continued) – 50 minutes	
FRI 19 FEB	2:30-3:30	Optional Zoom Session (1 hour) ASSIGNMENT # 2 DUE BY 5 PM AST (Grenada time) – POSTING QUIZ # 1	Dr. Pinckney
MO 22 FEB	19	Cestodes (continued) – 50 minutes	
TU 23 FEB	20	Introduction to Flukes (50 minutes)	Dr. Pinckney
WE 24 FEB	21	Flukes (continued) – 50 minutes	
TH 25 FEB	22	Acanthocephalans (50 minutes)	
FR 26 FEB	2:30-3:30	Optional Zoom Session (1 hour) QUIZ # 1 (10 POINTS) DUE BY 5 PM AST POSTING ASSIGNMENT # 3	Dr. Pinckney
MO 1 MAR	23	Introduction to Nematodes (50 minutes)	
TU 2 MAR	24	Ascarids (cont.) & Hookworms – 50 minutes	Mrs. Springer
WE 3 MAR	25	Hookworms (continued) – 50 minutes	
TH 4 MAR	26	<i>Trichuris</i> , <i>Eucoleus</i> , <i>Pearsonema</i> – 50 min	Mrs. Springer
FRI 5 MAR	2:30-3:30	Optional Zoom Midterm Review Session (1 hour) & ASSIGNMENT # 3 DUE BY 5 PM AST (Grenada time)	
FRI 12 MAR	TBA	PARASITOLOGY MID-TERM EXAMINATION – 50 questions (50 points)	
SUN14 MAR		DAYLIGHT SAVINGS TIME (AST = EST)	
MO 15 MAR	27	<i>Trichinella</i> , <i>Dioctophyma</i> , & Pinworms (50 mi)	
TU 16 MAR	28	<i>Strongyloides</i> , Spiruroids, <i>Dracunculus</i> “	Mrs. Springer
WE 17 MAR	29	Equine Strongyles & Trichostrongyles (Dr. P)	
FRI 19 MAR	2:30-3:30	Optional Zoom Session (1 hour) POSTING QUIZ # 2 DUE ON MARCH 26 BY 5 PM AST (Grenada time & EST)	
MO 22 MAR	30	Trichostrongyles (continued) Dr. Pinckney	
TU 23 MAR	31	Large animal Lungworms (50 minutes)	
		Small animal Lungworms (50 minutes)	

WE 24 MAR	32	
FRI 26 MAR	2:30-3:30	Optional Zoom Session (1 hour) QUIZ # 2 DUE BY 5 PM AST (Grenada time & EST)
MO 29 MAR	33	Heartworms (Dr. Pinckney)
TU 30 MAR	34	Heartworms (continued)
WE 31 MAR	35	Heartworms (continued) & other filarids
FRI 2 APR	2:30-3:30	Optional Zoom Session (1 hour) POSTING ASSIGNMENT # 4 (DUE ON APRIL 9 BY 5 PM AST (Grenada time & EST) – GOOD FRIDAY
MO 5 APR	36	Introduction to Insects (Mr. Dan Fitzpatrick)
TU 6 APR	37	Nematocera & other flies (50 minutes)
WE 7 APR	38	Muscoid & Hippoboscid flies (50 minutes)
FRI 9 APR	2:30-3:30	Optional Zoom Session (1 hour) ASSIGNMENT # 4 (2 POINTS) DUE BY 5 PM AST & EST
MO 12 APR	39	Facultative Myiasis (Mr. Dan Fitzpatrick)
TU 13 APR	40	Obligatory myiasis (50 minutes)
WE 14 APR	41	Fleas (50 minutes)
FRI 16 APR	2:30-3:30	Optional Zoom Session (1 hour) - Dan POSTING ASSIGNMENT # 5 (2 POINTS) DUE ON APRIL 23 BY 5 PM AST & EST
MO 19 APR	42	Lice, True Bugs (50 minutes) Dr. P
TU 20 APR	43	Pentastomes; Introduction to Arachnids
WE 21 APR	44	Ticks (50 minutes)
TH 22 APR	45	Ticks (50 minutes)
FRI 23 APR	2:30-3:30	Optional Zoom Session (1 hr) ASSIGNMENT # 5 DUE BY 5 PM AST & EST
MO 26 APR	46	Ticks; Introduction to Mites (50 minutes)
TU 27 APR	47	Mites (50 minutes)
WE 28 APR	48	Mites (50 minutes)
FRI 30 APR		Optional Zoom Final Exam Review Session (1 hour) – Dr. P & Dan
WE 12 MAY		PARASITOLOGY FINAL EXAMINATION (50 Questions (50 points)

XIII. Grading and Assessment Policy:

There will be two “open book” quizzes which will be due on February 26 and March 26. Check the orientation schedule and make note of the posting and due dates (5 PM AST = Grenada time). Grenada time is one hour AHEAD of EST until March 14 (Daylight Savings Time). After March 14, AST and EST will be the same. You are responsible to know what time zone that you are in respective to the due dates and times.

You will have one week to complete the quiz. Once you begin the quiz, you must finish it online. It will be in a multiple-choice format with feedback. Each quiz is worth 10 points (20 questions @ 0.5 point each OR 10 questions @ 1 point each). Some questions may require visualization of an image to answer.

The midterm examination (50 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 (Proctored Exam Soft 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. Once you begin the assignment, you must complete it online. Check the orientation schedule above for the posting and due dates (5 PM AST). 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. You are encouraged to visit the websites listed to gain an appreciation of the actual sizes of the parasites. 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.**

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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) or Mr. Dan Fitzpatrick (dfitzpat@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.

Students who have technical issues during the examination MUST inform the Course Director (s) (pinckney.rhonda2@gmail.com; rpinckney@sgu.edu; ccoomansingh@sgu.edu; dfitzpatrick@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 473-534-1982) 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 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 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 30 mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy: The materials (such as slides, hand outs 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: 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 parasite section (e.g., protozoans, cestodes, flukes, nematodes, insects, pentastomes and arachnids).

II. Appendices: Course Learning Outcomes, Program Learning Outcomes, and Lecture Learning Outcomes Mapping

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 postmortem 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.

Course Level Outcomes	SGU-SVM Program Level Outcomes	AVMA clinical competencies
Course Level Outcome 1	3, 4, 6	7
Course Level Outcome 2	4	7
Course Level Outcome 3	3,9	7
Course Level Outcome 4	3,9	7
Course Level Outcome 5	6	1,2
Course Level Outcome 6	3, 6,9	2,7



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

PATHOBIOLOGY DEPARTMENT

SYLLABUS - Pathology I (4 credits)

PTHB506 (Term 3)

Spring 2021

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 Spring 2021. Course content will be delivered via My Courses, Panopto, Zoom, and TopHat.

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. A functional computer

with microphone and camera is required for proctored remote examinations.

V. Recommended resources

Textbook: Pathologic Basis of Veterinary Disease, 6th edition. Zachary and McGavin. 2016.

VI. Accommodations

- a. Students with disabilities who may require 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 Spring 2021 term, these two hands-on labs will be converted to online format for distance education.** This course serves as an introduction to the discipline and clinical service of veterinary pathology. 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 Spring 2021**) 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 Learning 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.

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 Learning 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> <ul style="list-style-type: none"> Asynchronous <p>Zoom Class – Red</p> <ul style="list-style-type: none"> Synchronous (live) sessions scheduled at 1:30 pm Atlantic Standard Time (AST) Mandatory attendance <p>Zoom Office Hours – Purple</p> <ul style="list-style-type: none"> Synchronous (live) sessions scheduled at 1:30 pm AST <u>Optional</u> attendance Additional office hours by appointment 	<p><i>Assignments in this course consist of:</i></p> <ul style="list-style-type: none"> Laboratory Assignments Reading Assignments TopHat Lessons <p>Please remember to use the <u>CHECKLISTS</u> provided below to track your weekly Panopto recordings, assignments, and deadlines.</p> <p>Recommendation: Print this 4-page schedule for a convenient checklist at your workstation.</p>	
1	Jan 18	<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"/> Vascular disorders 1 – Wilkerson <input type="radio"/> Vascular disorders 2 – Wilkerson <p>Expected time commitment = 4 hours</p>	No assignments	
2	Jan 25	<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 <p><u>Zoom Office Hours - Marancik</u> <u>Thursday Jan 28th</u> 1:30 pm AST (1 hour)</p> <p>Expected time commitment = 4 hours</p>	<p><u>Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Inflammation Assignment <p>*Deadline Sunday Jan 31st, 11:59 pm</p> <p>Expected time commitment = 1 hour</p>	
3	Feb 1	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Inflammation 5 - Marancik <input type="radio"/> Inflammation 6 – Marancik <input type="radio"/> Inflammation 7 – Marancik <p><u>Zoom Class – Marancik</u> <u>Thursday Feb 4th</u> 1:30 pm AST (1 hour)</p>	See above.	

		<p>*Be sure to complete Panopto Checklist (Inflammation 1-7) before this Zoom Class.</p> <p>Expected time commitment = 4 hours</p>		
4	Feb 8	<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>Expected time commitment = 4 hours</p>	<p><u>Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Neoplasia Assignment – Worksheet Tumor Nomenclature <p>*Deadline Sunday Feb 14th, 11:59 pm</p> <p>Expected time commitment = 1 hour</p>	
5	Feb 15	<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 <p><u>Zoom Office Hours - Butler</u> <u>Thursday Feb 18th</u> <u>1:30 pm AST (1 hour)</u></p> <p>Expected time commitment = 4 hours</p>		
6	Feb 22	<p><u>Panopto Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Integumentary 1 - Butler <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>Expected time commitment = 4 hours</p>	<p><u>Laboratory Assignment Checklist</u></p> <ul style="list-style-type: none"> <input type="radio"/> Dermatopathology Lab Assignment <p>* Deadline Sunday Feb 28th, 11:59 pm</p> <p>Expected time commitment = 1 hour</p>	
7	Mar 1	<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 <p><u>Zoom Class – Butler</u> <u>Thursday Mar 4th</u> <u>1:30 pm AST (1 hour)</u> *Be sure to complete Panopto Checklist (Integumentary 1-9) before this Zoom Class.</p> <p>Expected time commitment = 5 hours</p>		

8 MIDTERMS	Mar 8			<u>Midterm Exam</u> Thursday Mar 11th at 12:00 pm AST
9	Mar 15	<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>Expected time commitment = 3-4 hours</p>	<p><i>***Must complete all TopHat Lessons by deadline Sunday Mar 21st, 11:59 pm. Late lessons will not receive points.</i></p>	
10	Mar 22	<p><i>Must complete all assignments before Zoom Class below.</i></p> <p><u>Zoom Class – Butler</u> <u>Thursday Mar 25th</u> <u>1:30 – 3:30 pm AST (2 hours)</u></p> <p>Expected time commitment = 2 hours</p>	<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 – Urinary Disease (2 pts) <p><i>***Must complete all assignments by deadline Wednesday Mar 24th, 11:59 pm. Late assignments will not receive points.</i></p> <p>Expected time commitment = 3 hours</p>	
11	Mar 29	<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>Expected time commitment = 5 hours</p>	<p><i>***Must complete all lessons by deadline Sunday Apr 4th, 11:59 pm. Late lessons will not receive points.</i></p>	
12	Apr 5		<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><i>Must complete all assignments before TopHat session below.</i></p> <p><u>Zoom Class - Butler</u> <u>Thursday Apr 8th</u> 1:30 – 3:30 pm AST (2 hours)</p> <p>Expected time commitment = 2 hours</p>	<p><u>Laboratory Assignment Checklist</u></p> <p><input type="radio"/> TopHat Virtual Necropsy – Liver Disease (2 pts)</p> <p>***Must complete all assignments by deadline Wednesday Apr 7th, 11:59 pm. Late assignments will not receive points.</p> <p>Expected time commitment = 3 hours</p>	
13	Apr 12	<p>TopHat Module 3 – Alimentary Pathology</p> <p>TopHat Lessons Checklist</p> <p><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> <p>Expected time commitment = 5 hours</p>	<p>***Must complete all lessons by deadline Sunday Apr 18th, 11:59 pm. Late lessons will not receive points.</p>	
14	Apr 19	<p><i>Must complete all assignments before TopHat session below.</i></p> <p><u>Zoom Class – Butler</u> <u>Thursday Apr 22nd</u> 1:30 – 3:30 pm AST (2 hours)</p> <p>Expected time commitment = 2 hours</p>	<p><u>Reading Assignment Checklist</u></p> <p><input type="radio"/> Review Paper 1 <input type="radio"/> Review Paper 2</p> <p><u>Laboratory Assignment Checklist</u></p> <p><input type="radio"/> TopHat Virtual Necropsy – Diarrheal Disease (2 pts)</p> <p>***Must complete all assignments by deadline Wednesday Apr 21th, 11:59 pm. Late assignments will not receive points.</p> <p>Expected time commitment = 2 hours</p>	
15 FINALS	Apr 26			
16 FINALS	May 3			<p><u>Final Exam</u> Monday May 3rd at 12:00 pm AST</p>
17	May 10			
18 CAPPS	May 17			

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/assignments. 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 Spring 2021.** 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 Spring 2021 Online course delivery: Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory

sessions. 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 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 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	<ol style="list-style-type: none"> 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. 	<p>1,2,6,7</p> <p>2,6</p> <p>6,7</p>
13	Inflammation (8) Case Study 1	<ol style="list-style-type: none"> 1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment. 	<p>1,2,3,6,7</p> <p>1,2,3,6,7</p>
14	Inflammation (9) Case Study 2	<ol style="list-style-type: none"> 1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment. 	<p>1,2,3,6,7</p> <p>1,2,3,6,7</p>
15	Inflammation (10) Review with active learning	<ol style="list-style-type: none"> 1. Review important concepts of inflammation. 	<p>6,7</p>
16	Neoplasia (1)	<ol style="list-style-type: none"> 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. 	<p>1,2,6</p> <p>1,2,3,6,7</p> <p>1,2,7</p>
17	Neoplasia (2)	<ol style="list-style-type: none"> 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. 	<p>1,2,3,6</p> <p>1,2,6,7</p> <p>1,2,6</p>
18	Neoplasia (3)	<ol style="list-style-type: none"> 1. Given a description of a possible mechanism of carcinogenesis, be able to distinguish between genetic and epigenetic involvement 	<p>1,2,6</p> <p>2</p>

		<ol style="list-style-type: none"> Be able to identify the primary genetic targets involved in carcinogenesis. 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"> 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. Be able to distinguish among the mechanisms of carcinogenesis causes by chemical, physical and microbial agents. 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"> Recognize evidence in support of both innate and acquire immune responses to transformed cells. 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. 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"> Review and classify the types of inflammation that are associated with different infectious organisms. Evaluate and understand the basic concepts of infectious disease pathogenesis. 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"> Identify and analyze the pathogenesis and clinical significance of coinfections and infectious disease complexes. Identify and analyze the pathogenesis and clinical significance of oncogenic infections. 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. 	1,6 1,6 1,6
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. 	1,6 1,6
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. 	1,6,7 1,6,7
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. 	1,3,6 1,6 1,3,6
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. 	1,6 6,7 3,6
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. 	1,6 3,6
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. 	1,6 6 3,6

		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

Grenada, West Indies

Pathobiology

Pathology 2 (4 credits)

PTHB507 - TERM 4

Spring 2021

I. Course Faculty and Staff Information

a. Course Directors:

- i. Dr. M. I. Bhaiyat, BVM, PhD; Professor (Veterinary Pathology)
 1. e-mail: mibhaiyat@sgu.edu
 2. Tel.: 444-4175, EXT. 3338
 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.
- ii. Dr. C. Dores, DVM, MSc, PhD, Diplomate ACVP; Associate Professor (Veterinary Pathology)
 1. email: cdores@sgu.edu
 2. Tel: 444- 4175 EXT. 3618
 3. Office Location: SVM Trailer Offices
- iii. Office Hours:
 1. Via Zoom by request via the class representative

b. Staff members:

- i. Ms. Cindy Edwards; Executive Secretary
 1. e-mail: <cedwards@sgu.edu>
 2. Tel.: 444-4175, EXT. 3339
- ii. Mr. Ferron Victor; Laboratory Technician (Audio-Visual)
 1. e-mail: <fvictor@sgu.edu>
 2. Tel.: 444-4175, EXT. 3856

II. Course location

- a. Online location: Sakai resources being used (i.e., Panopto, Lessons)

- b. Synchronous laboratory Zoom sessions (Appendix 2)

III. Prerequisite and/or co-requisite courses

- a. Veterinary Pathology I (PTHB 506)
- b. Good base on Anatomy, Physiology, Histology/Embryology, Parasitology, Virology, Bacteriology/Mycology, Clinical Pathology, and Pharmacology

IV. Required resources

- a. Pathologic Basis of Veterinary Disease, 6th Edition (2017). By James F. Zachary. St. Louis, Elsevier. ISBN: 978-0-323-35775-3
- b. Computer with functional microphone, camera, and speakers
- c. Internet connection with bandwidth supportive of streaming videos and online video calls.

V. Recommended resources

- a. 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
- b. 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

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

NA

VIII. Course rationale

- a. Pathology II is a four-credit course taught in the 4th term of the DVM program. This course consists of 55 lectures of one-hour duration and ten interactive laboratory sessions of two-hour duration. Pathology II is the continuation of the prerequisite course Pathology I. In Pathology II, students will have the opportunity and are expected to integrate the knowledge acquired in Pathology I, in addition to anatomy, physiology, embryology, histology, microbiology, virology and parasitology.
- b. Lectures and laboratories will provide students the tools to strengthen and learn concepts of veterinary diseases in the following body systems: Lymphatic, Endocrine, Nervous, Respiratory, Reproductive, Cardiovascular, Special senses (Eye/Ear), Muscular, and Skeletal systems.
- c. Students will also learn basic concepts about tissue sampling, histopathology, and ancillary diagnostic methods that can be used to help achieve an etiologic and morphologic diagnosis of diseases. Topics taught in this course will provide a strong

foundation for students to develop their clinical and diagnostic skills.

IX. Course Learning Outcomes

- a. On successful completion of the course, the student should be able to develop pathology skills in the following systems: Neurologic, Endocrine, Musculoskeletal, Reproductive, Special Senses, Cardiovascular, Lymphatic, Respiratory.
- b. The Course Learning Outcomes for each module and each system are:
 - i. Describe reactions of each organ to injury.
 - ii. Define terms used in disease of each organ.
 - iii. Outline the pathogenesis of major disease groups of each organ including inflammatory, degenerative, hyperplastic and neoplastic processes, and place specific diseases in context of prevalence, morbidity, mortality and “one health”.
 - iv. Interpret gross postmortem and histopathology lesions associated with diseases of body systems and provide a differential list of possible etiologies followed by a plan which ancillary testing to use to provide a define diagnosis.
 - v. Effectively communicate and explain disease’s pathophysiology and associated lesions to professional colleagues, clients, lay public and responsible authorities

X. Lesson Learning Outcomes

- a. **Pathology of the lymphoid system**
 - i. Recall the formation of lymphoid cells and the role of their regulatory factors.
 - ii. Recall the function and architecture of the lymphoid system.
 - iii. List the primary and secondary lymphoid organs.
 - iv. Recall the function and the architecture of the thymus.
 - v. Describe the lesions of the thymus and the diseases causing them.
 - vi. Recall the function and the architecture of the spleen.
 - vii. Describe the lesions of the spleen and the diseases causing them.
 - viii. Recall the function and architecture of the lymph node.
 - ix. Describe the lesions that affect the lymph node and the diseases causing them.
- b. **Pathology of the endocrine system**
 - i. State the concept of primary and secondary hypofunction of an endocrine gland.
 - ii. State the concept of primary and secondary hyperfunction of an endocrine gland.
 - iii. Predict the production of hormone-like factors by nonendocrine tumors.
 - iv. Recall endocrine dysfunction due to failure of target cell response.
 - v. Recall that endocrine hyperactivity may be secondary to disease of other organs.

- vi. Recall that endocrine dysfunction may result from abnormal degradation of hormones.
- vii. Relate iatrogenic syndromes of hormone excess.
- viii. Enumerate the major disorders of the pituitary.
- ix. Enumerate the major disorders of the thyroid.
- x. Enumerate the major disorders of the adrenal gland.
- xi. Enumerate the major disorders of the parathyroid.
- xii. Enumerate the major disorders of the pancreatic islets.
- xiii. Enumerate the major disorders of the chemoreceptor organs.

c. **Pathology of the musculoskeletal system**

- i. Lesson 1:
 - 1. List cells of the skeletal system and associate them with bone homeostasis and development of disease.
 - 2. Describe how bone reacts to injury.
 - 3. List types of bone fractures
 - 4. Outline cell types involved with the bone healing process, and describe phases of bone healing
 - 5. List factors which delay healing of a fracture.
- ii. Lesson 2:
 - 1. List common examples of congenital skeletal abnormalities
 - 2. Describe the pathogenesis and consequences of inflammation of the bone.
 - 3. List, compare and contrast causes of osteomyelitis in small animals, horses and cattle.
- iii. Lesson 3:
 - 1. List and describe the pathogenesis of metabolic bone disease (deficiency of, and excess, mineralized bone).
 - 2. Describe the pathogenesis and consequences of toxic bone disease.
- iv. Lesson 4:
 - 1. Describe acute and chronic the reaction of the joint to injury.
 - 2. Describe the pathogenesis and consequences of degenerative joint disease.
 - 3. Give examples of degenerative joint diseases
- v. Lesson 5:
 - 1. Describe the pathogenesis and consequences of degeneration of intervertebral discs.
 - 2. List, compare and contrast common forms of infectious and non-infectious arthritis in domestic animals
- vi. Lesson 6:
 - 1. List, compare and contrast tumors of the skeletal system of domestic animals and associate them with disease progressions

- vii. Lesson 7:
 1. List of the acute and chronic responses of muscle to injury.
 2. List causes and describe the consequences of muscle atrophy.
 3. List causes and describe the consequences of muscle hypertrophy.
 4. List common causes of myositis and where appropriate identify the species in which they occur most frequently.
 - viii. Lesson 8:
 1. Classify 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]).
 2. Outline the lesions associated with severe muscular traumatic injury.
 3. List common tumors of muscles.
 - ix. Laboratory (Scheduled zoom session):
 1. Case discussion/ Zoom Session
 - x. During the 2-hour laboratory session students will work on the laboratory assignment and there will be a follow up discussion at the end of the session. Assignments 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.
- d. **Pathology of the eye and ear (special senses)**
- i. Lesson 1:
 1. Review the structure (anatomy, microanatomy) and function (physiology) of the eye globe
 2. List and describe disorders of ocular development
 3. Explain the pathophysiology of glaucoma and list associated histological and gross lesions
 4. Define cataracts and list possible etiologies
 5. Describe major histological changes associated with cataracts
 6. Explain the pathophysiology of diabetic cataracts
 - ii. Lesson 2:
 1. List, compare and contrast developmental disorders of the eyelid and conjunctiva and associate them with the development of associated diseases
 2. List inflammatory diseases of the cornea and conjunctiva and categorize them in infectious and non-infectious.
 3. List, compare and contrast neoplasms from the eyelid, and conjunctiva
 4. List and describe how the cornea responds to injury and what factors dictate the repair's outcome
 5. List, compare and contrast inflammatory corneal diseases

6. List infectious etiologies of keratitis and associate their prevalence amongst different species
 7. List, compare and contrast neoplasms of the cornea
- iii. Lesson 3:
1. List and describe how the uvea reacts to injury and associate these reactions with disturbances in ocular homeostasis and function
 2. List, compare and contrast the two types of lens induced uveitis
 3. List, compare and contrast the most common cases of uveitis in domestic species
 4. List, compare and contrast neoplasms of the uvea
 5. Describe how the retina reacts to injury and associate these responses with ocular function and regeneration
 6. List all possible causes of retinitis and retinal degeneration
 7. Explain retinal dysplasia and list all possible etiologies
 8. List, compare and contrast toxic causes of retinal degeneration
 9. List neoplasms of the retina
 10. List, compare and contrasts acquired diseases of the lens
 11. Explain the pathophysiology of Feline post traumatic ocular sarcoma
- iv. Lesson 4 (ear):
1. List, compare and contrast developmental disorders of the ear and associate them with development of diseases
 2. Define otitis externa, list predisposing, primary and secondary factors of otitis and explain their relationship in the context of pathophysiology
 3. List and explain structural changes associated with chronic inflammation of the external and middle ear
 4. List, compare and contrast the most frequent neoplasms of the ear
 5. List, compare and contrast vascular lesions of the ear.
 6. Explain the pathophysiology of otitis media and its related clinical presentations and possible sequelae
 7. Define nonpharyngeal polyps and explain its relationship with the ear and predisposing conditions
 8. Define and explain the pathophysiology of Vestibular Disease, list all etiologies and clinical presentation of the disease
 9. List, compare and contrast etiologies of hearing loss and deafness, and explain different forms or categorizing the disease
- e. **Pathology of the female and male reproductive system**
- i. Lesson 1:
1. List the major developmental anomalies of the female reproductive system
 2. List and compare the Disorders of Sexual Development

- ii. Lesson 2:
 - 1. List, compare and contrast infectious agents that can affect the ovaries
 - 2. List and compare ovarian neoplasms regarding cellular origin, hormone production, and neoplasm behavior
- iii. Lesson 3:
 - 1. List, compare and contrast infectious agents that can affect uterine tubes, uterus, vagina and vulva
 - 2. Compare and contrast the effect of reduced estrogen and progesterone stimulation in the female reproductive tract and associate them with the development of disease
 - 3. List etiologies that cause a reduction in the hormonal stimulation in female reproductive organs
 - 4. Compare and contrast the effect increased estrogen and progesterone stimulation in the female reproductive tract
 - 5. List and compare uterine neoplasms regarding cellular origin, and neoplasm behavior
- iv. Lesson 4:
 - 1. List, compare and contrast infectious agents that can affect the vagina and vulva
 - 2. List, compare and contrast neoplasms that can develop in the vagina and vulva and associate them with behavior
- v. Lesson 5:
 - 1. List the main infectious agents associated with mastitis in animals.
 - 2. Compare and contrast all presentations of mastitis and associate them with etiologic organisms
 - 3. Describe the main types of mammary tumors and list the most common types of tumors in the queen and bitch.
 - 4. List and compare histological features from benign versus malignant mammary tumors in domestic animals.
- vi. Lesson 6:
 - 1. List and compare the major non-infectious causes of early embryonic death and abortion
 - 2. List and compare the major causes of infectious abortions
 - 3. List all zoonotic agents that can cause abortions in domestic species
- vii. Lesson 7:
 - 1. List the major developmental anomalies of the male reproductive system.
 - 2. Describe the degenerative, inflammatory and neoplastic changes of the testes
 - 3. List zoonotic agents that can infect the male reproductive tract
 - 4. Compare and contrast testicular neoplasms regarding cellular origin, hormone production and associated lesions

- viii. Lesson 8:
 1. List the main inflammatory, infectious and neoplastic lesions of the epididymis and the accessory sex glands.
 2. List the inflammatory, hyperplastic and neoplastic abnormalities occurring in the prostate gland.
 3. List the main inflammatory, infectious and neoplastic lesions of the scrotum, penis and prepuce.
 - ix. Lesson 9:
 1. Time allocated for working on assignment/case study
 - x. Lesson 10:
 1. Case discussion/ Zoom Session
 - xi. 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.
- f. **Pathology of the nervous system**
- i. Recite the terminology of the nervous system and its disorders.
 - ii. Illustrate the ways in which the cellular components of the nervous system respond to injury.
 - iii. Describe the consequences of trauma and pressure changes within the central nervous system (CNS).
 - iv. Describe the spectrum of degenerative diseases of the CNS.
 - v. Discuss the spectrum of congenital/inherited abnormalities which can occur in the central nervous system.
 - vi. Describe how infectious agents gain access to the nervous system.
 - vii. Give examples of specific infectious/inflammatory diseases affecting the nervous system of domestic animals.
 - viii. Describe necrosis/malacia in the CNS giving examples of the major causes and the consequences thereof.
 - ix. Enumerate the types of metabolic disorders which can affect the nervous system of domestic animals.
 - x. Describe the type of disorders which can affect the spinal cord and appreciate their consequences.
 - xi. Describe the process of degeneration and regeneration in peripheral nerves.
 - xii. Describe the main types of tumors of the CNS which occur in domestic animals.
 - xiii. Recognize color change and mass lesions in gross specimens of the central nervous system.
- g. **Pathology of the cardiovascular system**
- i. Discuss the basic pathophysiologic mechanisms of cardiovascular dysfunction.

- ii. Explain the pathogenesis of congestive cardiac failure
- iii. Enumerate the changes characteristic of common types of congenital cardiac diseases and their significance.
- iv. List the different types of pericardial disease and how they develop.
- v. List the various acquired diseases of the myocardium.
- vi. Describe the etiology and pathogenesis of endocardial diseases particularly those affecting the cardiac valves.
- vii. Describe the etiology and pathogenesis of cardiomyopathy in the dog and cat.
- viii. List the most common neoplasms of the heart.
- ix. Enumerate the disease processes that affect arteries and veins.
- x. Recognize cardiac diseases post-mortem and collect appropriate tissues for histopathologic evaluation.

h. Pathology of the respiratory system

- i. Recall the function and architecture of the respiratory system.
- ii. Recall the defense mechanisms of the respiratory system and the consequences of impairment of the defense mechanism.
- iii. Identify the significance of the factors involved in respiratory disease due to air-borne and blood-borne agents.
- iv. List the specific diseases of nasal cavity in bovines, equines, cats, and pigs describing the etiology, gross and microscopic lesions, and diagnostic methods.
- v. List the neoplasms of the nasal cavity.
- vi. List the specific diseases of the larynx, trachea, and bronchi in ruminants, horses, dogs, and cats describing the etiology, gross and microscopic lesions, and diagnostic methods.
- vii. Classify pneumonia and describe the etiology, pathogenesis, lesions, and sequelae of the basic morphological types of pneumonia.
- viii. 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.
- ix. List the main types of primary pulmonary tumors and the involvement of the lungs in disseminated neoplastic disease in domestic animals.
- x. List of the different types of pulmonary vascular disease and their pathological significance.
- xi. Describe the noninflammatory and inflammatory conditions and tumors affecting the pleura and mediastinum including the etiology, pathogenesis, lesions, and sequelae.
- xii. Be able to recognize, at post mortem, the common pulmonary lesions of ruminants (cattle, sheep, goats), horse, pig, dog, and cat.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcomes (CLOs) #	SGU-SVM Program Level Outcomes (PLOs)
1, 2,3, 4 ,5	Recall, understand, and adequately utilize multidisciplinary knowledge of physiology in homeostasis and pathologic processes
1, 2,3, 4,5	Identify and explain disturbances of organ systems in the context of disease
1, 2,3, 4	Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and toxic, metabolic, neoplastic and developmental diseases
3,4,5	Explain the relationship between disease processes and clinical signs. And create a list of differential diagnosis
4,5	Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
4,5	Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.

XII. Course Schedule

- a. Please refer to Appendix I for the lecture schedule.
- b. Please refer to Appendix II for the laboratory schedule.

XIII. Grading and assessment policy, and grading rubrics

- a. **This course consists of four non-cumulative exams and two formative system assignments. Exams will use SVM's qualitative grading on the scale of A to F (see XIII. e. below).**
- b. **Laboratory assignments are requisites to pass the course. Submission of laboratory assignments is considered mandatory participation and is a requisite to pass the course. Assignments must be submitted for the course to be considered completed, and each assignment is worth 5 points. Students who fail to submit an assignment without a valid reason will receive a score of zero “0” points for the assignment, but students will still have until the end of the course to submit the assignment and secure the course completion. An incomplete grade “I” will be given when course requirements have not been completed due to serious mitigating circumstances such as illness or family emergencies. 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.**

- c. Exams will be in a multiple-choice format and will cover material presented in lectures and interactive laboratories. Lecture content will represent 100% of exam's questions. Exams will not be cumulative, each exam will represent 22% of the course's grade, and each exam will cover systemic pathology of 2 or 3 Body Systems.
- d. Exams will have the following point distributions:
- i. Assignments: 20 points (5 points per assignment)
 - ii. Quiz 1: 40 points
 - iii. Mid-Term: 40 points
 - iv. Quiz 2: 40 points
 - v. Final exam: 40 points
 - vi. Total points: 180 points
- e. 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

- f. 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.
- g. 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.
- i. Upon obtaining a grade of “C” or better on the re-sit exam, the maximum course grade earned is a “C”.
 - ii. 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.
 - iii. 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.
 - iv. 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.

XIV. Recommended study strategies

- a. This is an asynchronous course. Assignments and exams due dates are fixed, but if accommodations are needed and approved by the Dean of Students (Dr. Bhaiyat), students will receive an extension to complete assignments and take exams.
- b. The course material will be posted on Sakai.
- c. The exam material will come from lectures, labs, and classroom discussions.
- d. Students are expected to read lecture notes and power points and come prepared to answer questions.
- e. 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:
 - i. What is the etiology?
 - ii. What is the pathogenesis?
 - iii. Is there a specific pathophysiology associated with the disease/condition?
 - iv. What species are affected?
 - v. What age range of animal is affected?
 - vi. What are the gross lesions? (Not to worry too much about microscopic lesions unless there is a pathognomonic one).
 - vii. How can you distinguish this disease/condition from other related ones?
 - viii. What are the sequelae?
 - ix. 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).

XV. Instructor's expectations of the student

- a. The student is expected to attend all asynchronous lectures, and actively engage in Sakai forums and Zooms sessions.
- b. All assignments, tests/quizzes must be submitted in a timely manner.
- c. Students are expected to adhere strictly to the honor code. **If students share feedback or answers on Sakai Assignments, Exams or Quizzes, this will be considered student misconduct and a violation of the honor code.**

XVI. Professionalism statement

- a. Please exhibit professional behavior in class (online or otherwise).
- b. Some of the important values and characteristics that are expected include: respect, honesty, trust, reliability, commitment, equality, justice and discretion.
- c. Students are expected to log in on time for scheduled meetings, and exams.
- d. Submission of tests/quizzes and assignments must be done in a timely manner.
- e. The use of mobile phones or any educational material is not allowed during exams.
- f. Students who breach any of the above rules can be subjected to disciplinary action.
- g. 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. 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, 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/Participation Policy (refer student to the student manual page if applicable)

- a. Students are expected to be available during the standard 8:00 AM-5:00 PM AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

- b. System’s assignments are requisites to pass the course. Submission of assignments is considered mandatory participation and is a requisite to pass the course. Assignments must be submitted for the course to be considered completed. Students who fail to submit an assignment without a valid reason will receive a score of zero “0” points for the assignment, but students will still have until the end of the course to submit the assignment and secure the course completion. An incomplete grade “I” will be given when course requirements have not been completed due to serious mitigating circumstances such as illness or family emergencies. 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.
- c. 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.
- d. Absence Reporting Procedures
 - i. Medical Excuse
 1. 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).
 2. 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.
 3. See the Student Manual for further details.
 - ii. Non-Medical Excuse
 1. 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.
 - 2. 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).
 - 3. See the Student Manual for further details.
- iii. Religious Observance
 - 1. 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.

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

- a. Students who fail to attend an examination (Sakai quiz/test or Exam on ExamSoft) 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 quiz/examination/assignment.
- b. Students who have technical issues during the examination MUST inform the Course Directors (Dr. Bhaiyat: mibhaiyat@sgu.edu, Dr. Dores: cdores@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.
- c. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

XIX. ExamSoft policy

- a. 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.
- b. **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](#)
 - b. [The Examsoft student perspective video 30mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

- a. 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:

- a. Appendix 1 – Lecture schedule

LECTURE SCHEDULE FOR VETERINARY PATHOLOGY II, TERM 4 SPRING 2021						
Week	Lecture	Day	Date	Time	Lecturer	Lecture Topic
1	1	Monday	18-Jan	Online	Bhaiyat	Lymphoid System
	2	Tuesday	19-Jan	Online	Bhaiyat	Lymphoid System
	3	Wednesday	20-Jan	Online	Bhaiyat	Lymphoid System
	4	Thursday	21-Jan	Online	Bhaiyat	Lymphoid System
	5	Friday	22-Jan	Online	Bhaiyat	Lymphoid System
2	6	Monday	25-Jan	Online	Bhaiyat	Lymphoid System
	7	Tuesday	26-Jan	Online	Dores	Special Senses
	8	Wednesday	27-Jan	Online	Dores	Special Senses
	9	Thursday	28-Jan	Online	Dores	Special Senses
3	10	Monday	1-Feb	Online	Dores	Special Senses
	11	Tuesday	2-Feb	Online	Bhaiyat	Nervous System
	12	Wednesday	3-Feb	Online	Bhaiyat	Nervous System
	13	Thursday	4-Feb	Online	Bhaiyat	Nervous System
	14	Friday	5-Feb	Online	Bhaiyat	Nervous System

4	15	Monday	8-Feb	Online	Pathology II, Quiz 1 (Lymphoid system & Special Senses)	
	16	Tuesday	9-Feb	Online	Bhaiyat	Nervous System
	17	Wednesday	10-Feb	Online	Bhaiyat	Nervous System
	18	Thursday	11-Feb	Online	Bhaiyat	Nervous System
5	19	Monday	15-Feb	Online	Bhaiyat	Nervous System
	20	Tuesday	16-Feb	Online	Bhaiyat	Nervous System
	21	Wednesday	17-Feb	Online	Dores	Skeletal System
	22	Thursday	18-Feb	Online	Dores	Skeletal System
6	23	Monday	22-Feb	Online	Dores	Skeletal System
	24	Tuesday	23-Feb	Online	Dores	Skeletal System
	25	Wednesday	24-Feb	Online	Dores	Skeletal System
	26	Thursday	25-Feb	Online	Dores	Muscular System
7	27	Monday	1-Mar	Online	Dores	Muscular System
	28	Tuesday	2-Mar	Online	Dores	Muscular System
	29	Wednesday	3-Mar	Online	Bhaiyat	Endocrine System
	30	Thursday	4-Mar	Online	Bhaiyat	Endocrine System
8		Monday	8-Mar	Online	Pathology II Mid-Term Exam (Nervous & Musculoskeletal Systems)	
		Tuesday	9-Mar	Online	VPH Mid-Term Examination	
		Wednesday	10-Mar	Online	Anesthesiology Mid-Term Exam	
		Thursday	11-Mar	Online	AFEAD Mid-Term Exam	
		Friday	12-Mar	Online	Intro Clin Med Mid-Term Exam	
9	31	Monday	15-Mar	Online	Bhaiyat	Endocrine System
	32	Tuesday	16-Mar	Online	Bhaiyat	Endocrine System
	33	Wednesday	17-Mar	Online	Bhaiyat	Endocrine System
10	34	Monday	22-Mar	Online	Dores	Reproductive System
	35	Tuesday	23-Mar	Online	Dores	Reproductive System
	36	Wednesday	24-Mar	Online	Dores	Reproductive System
11	37	Monday	29-Mar	Online	Dores	Reproductive System
	38	Tuesday	30-Mar	Online	Dores	Reproductive System
	39	Wednesday	31-Mar	Online	Dores	Reproductive System
	40	Thursday	1-Apr	Online	Dores	Reproductive System
		Friday	2-Apr	-	Good Friday Holiday	
12		Monday	5-Apr	-	Easter Monday Holiday	
	41	Tuesday	6-Apr	Online	Pathology II, Quiz 2 (Endocrine & Reproductive Systems)	
	42	Wednesday	7-Apr	Online	Bhaiyat	Cardiovascular System
	43	Thursday	8-Apr	Online	Bhaiyat	Cardiovascular System
	44	Friday	9-Apr	Online	Bhaiyat	Cardiovascular System
13	45	Monday	12-Apr	Online	Bhaiyat	Cardiovascular System

	46	Tuesday	13-Apr	Online	Bhaiyat	Cardiovascular System
	47	Wednesday	14-Apr	Online	Bhaiyat	Cardiovascular System
	48	Thursday	15-Apr	Online	Bhaiyat	Respiratory System
14	49	Monday	19-Apr	Online	Bhaiyat	Respiratory System
	50	Tuesday	20-Apr	Online	Bhaiyat	Respiratory System
	51	Wednesday	21-Apr	Online	Bhaiyat	Respiratory System
	52	Thursday	22-Apr	Online	Bhaiyat	Respiratory System
15	53	Monday	26-Apr	Online	Bhaiyat	Respiratory System
	54	Tuesday	27-Apr	Online	Bhaiyat	Respiratory System
	55	Wednesday	28-Apr	Online	Bhaiyat	Respiratory System
	56	Thursday	29-Apr	Online	Bhaiyat	Respiratory System
16		Monday	3-May	Online	Pathology II Final Exam	
		Tuesday	4-May	-	-	-
		Wednesday	5-May	Online	Surgical Skills Final Exam	
		Thursday	6-May	-	-	-
		Friday	7-May	Online	VPH Final Examination	
17		Monday	10-May	Online	Anesthesiology Final Exam	
		Tuesday	11-May	-	-	-
		Wednesday	12-May	Online	Intro Clin Med Final Exam	
		Thursday	13-May	-	-	-
		Friday	14-May	-	-	-
18		Monday	17-May			
		Tuesday	18-May			
		Wednesday	19-May			
		Thursday	20-May	1:00 PM	CAPPS Meeting	
		Friday	21-May		End of Term	

b. Appendix 2 – Laboratory schedule

Laboratory Schedule for Pathology II, Term 4 Spring 2021					
Week	Laboratory	Day	Date	Time (AST)	Lecturer
7	Musculoskeletal	Thursday	04-Mar	1:00 PM	Dr. Dores
11	Reproductive	Thursday	01-Apr	1:00 PM	Dr. Dores
13	Cardiovascular	Thursday	15-Apr	1:00 PM	Dr. Bhaiyat
15	Respiratory	Thursday	29-Apr	1:00 PM	Dr. Bhaiyat



ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PUBLIC HEALTH SYLLABUS (2 Credit)
PTHB 510 (Term 4)
Spring 2021

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: 1:30-2:30.

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: Time set according to class schedule.

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. 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 Learning 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 for 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: Feb-May

Week	Lecture hrs/week	Assessments	Lecturer	Topic
5: Feb 15-19	3		Roopnarine (RR)	Introduction to VPH and 'One Health'
			RR	The US Meat and Poultry Inspection program
			Dr. Bidaisee	HACCP & COVID-19
6: Feb 22-26	3		RR	Ante Mortem Inspection
			RR	Humane Slaughter
7: Mar 1-5	3		RR	Post Mortem Inspection
			RR	Pet Food Composition
			RR	Poultry Slaughter
			RR	The FDA and Residues in Food animals
8: Mar 8-12		Quiz I: Tue Mar 9-16	RR	Midterm Assessment
9: Mar 15-19	2	Quiz 1 ends Mar 16	Afema (JA)	Zoonoses Classification. Bovine, cervid and elephant tuberculosis
10: Mar 22-26	4		JA	Neurocysticercosis
			JA	Rocky Mountain Spotted fever, Visceral migrans
			JA	Bovine, elk, swine brucellosis
			JA	Immunocompromised people and pets
			JA	<i>Coxiella burnetii</i>
11: Mar 29-Apr 6	3			Rabies
				Rabies
12: Apr 5-9	4		RR	Rabies-clickers, cases
13: Apr 12-16	3		JA	Factors of Emergence
			RR	Zoonotic Coronaviruses Including SARS CoV-2 (agent of) COVID-19

14: Apr 19-23	2		JA	Influenza viral subtypes of public health importance
				Zoonotic equine arboviruses of emerging importance
15: Apr 26-30	2	No Lectures-Revision		Time for you to revise
16: May 3-7	1	VPH Final- EXAMSOFT: May 6	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”

VPH final: This assessment will be conducted in the form of an Examsoft assessment. There will be 10 questions from Dr. Roopnarine’s sections on Rabies and Zoonotic coronaviruses and 30 questions from Dr. Afema’s lectures on Zoonoses and Emerging Zoonoses.

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 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 VPH Final is conducted as an Examsoft assessment.

Assessments	Date	Points
Quiz 1	Tue Mar 9-16	10
VPH Final: Examsoft	Tue May 6	40
Total		50

XIV. Recommended study strategies

Active participation in the course is 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/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 be available during the standard 8-5pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

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.

ZOOM sessions - ZOOM will be used for Office Hours – These will be optional. 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.

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

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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. [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 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)
Spring 2021

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: 1:30-2:30.

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. 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 practice 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 Learning 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: Jan 18-Feb 19

Week	Lecture hrs/wk	Assignments	Lecture topics
Prior to Week 1 Open Jan 10			Introductory Forum: Icebreaker
Week 1 Jan 18-22	3		Epidemiological concepts & Employment opportunities
			Disease Reporting
			Descriptive Studies
Week 2 Jan 25-29	3		Analytical Studies I-Case -control & Cohort studies
			Analytical Studies II -Clinical trials Qualitative Studies & Action research
		Assessment 1: Quiz 1 Tues Jan 26-Tues Feb 2	
Week 3 Feb 1-5	3	Quiz 1 Ends Tues Feb 2	
			Screening Tests
			Epidemiology of Infectious Diseases
Week 4 Feb 8-12	3		Herd Immunity
			Outbreak Investigation
		Assessment 2: Forum Tue Feb 9-16	
Week 5 Feb 15-19	3	Assessment 2: Forum Ends Tue Feb 16	

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 posting to a minimum of 100 words and a maximum of 200 words, and then reply to at least 1 of your peers. References and citation will NOT be included in the word count.

Please refer to the rubric within your syllabus as it pertains to grading. A model answer framework is provided for you on the forum site.

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 Jan 26-Feb 2	15
Graded forum	Tue Feb 9-16	15
Total		30

XIV. Recommended study strategies

Active participation in the forum 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 on Thursdays.

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 be available during the standard 8-5pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

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.

ZOOM sessions - ZOOM will be used for Office Hours – These will be optional. 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.

Discussion Forum -Participation in the Graded forum assignment is mandatory in order to receive grade points for this assessment.

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. 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](#)

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Appendix:
N/A



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Pathobiology Department

Veterinary Immunology

PTHB 512 – 2 credits

Spring 2021

I. Course Faculty and Staff Information

Course Director:

Mercedes María Abeyá, DVM, PhD. mabeya@sgu.edu

Office: SVM trailer

Office hours: Zoom sessions Wednesday 12:00 pm

Tel#1 (473) 444 –ext.3805

Visiting Professor:

Diana Stone, MPH, DVM, PhD, Diplomate ACVPM. dstone@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 location—Sakai resources being used: Panopto, Lessons

III. Prerequisite and/or co-requisite courses

Current 2nd term SVM student.

IV. Required resources

Lessons on Saki

V. Recommended resources

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: Clinical Immunology of the Dog and Cat, Michael J. Day, 2nd Ed. 2011.

VI. 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 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 encounter immunology in the DVM curriculum! 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. This course will provide the foundation in immunology for these courses.

IX. Course Learning Outcomes

Course Goals:

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

- Understand and incorporate the immunological concepts presented in 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.
- Recognize, describe and 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.
- Apply problem solving skills. Students will be expected to apply immunology concepts to novel situations on exams.
- To 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.

X. Lesson 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.)

Principles of Immunity Lectures: Lectures 1-11

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 Th1 and Th2.

11cAB: Relate T cell subsets to effector arms of the immune system: CTLs and Antibody.

Humoral Immunity Lectures: Lectures 12, 13, 14:

12aA: Identify/describe the activation/clonal expansion of B lymphocytes

12bA: Recognize/differentiate the Fab and Fc regions of antibody, polyclonal vs monoclonal antibody

12cA: Recognize normal/abnormal protein electrophoresis results and interpret the basic significance of low/high globulin fractions.

13aA: Recognize the different antibody classes and their different functions

13bA: Recognize antibody class switching and affinity maturation and its importance to an antibody response to antigen.

13cA: Given a description or scenario, identify the class of antibody involved

14aC: Recognize/interpret the terminology and use of antibodies against antibodies in diagnostic tests

14bC: Define the concepts of antibody titers, seroconversion, acute vs convalescent antibody titers, T-dependent/T-independent antibody responses, protective and sterile immunity.

14aC: Recognize/interpret primary and secondary antibody responses, the classes and relative amounts of each class of antibody involved, and given a scenario, predict the kind of antibody response expected

Immunodiagnostic Lectures: Lectures 15, 16, 17, 18, 19, 20

15aA: Describe the immunology used to develop immunodiagnostic tests, including antigen-antibody interactions; the development and use of polyclonal/monoclonal antibodies and antibodies against other antibodies; primary/anamnestic antibody responses.

15bC: Describe the uses of immunodiagnostic tests, the samples and reagents used, controls needed and recognize whether the test is designed to detect antigen or antibody.

15cC: describe titration, how titers are used in diagnostics and be able to interpret antibody titers.

16aC: Describe the immunologic concepts, advantages/limitation and procedures (samples and reagents needed) for Direct and Indirect Immunofluorescent (IF) assays and recognize examples.

16bC: Describe the immunologic concepts, advantages/limitation and procedures (samples and reagents needed) for the various types of ELISA tests and recognize examples of each: Direct, Indirect, Antigen Capture, Competitive.

16bC: Given a scenario and results from IF assays and ELISAs, be able to interpret the results in terms of: Primary/Secondary exposure to a pathogen, Infection, Vaccination status, Disease status.

17aC: Describe the immunologic concepts, advantages/limitations and procedures (samples and reagents needed) for Western Blot assays and recognize examples.

17bC: Describe the immunologic concepts, advantages/limitations and procedures (samples and reagents needed) for Immunohistochemistry assays and recognize examples.

17cC: Given a scenario and results from Western Blot and Immunohistochemistry assays, be able to interpret the results in terms of: Primary/Secondary exposure to a pathogen, Infection, Vaccination status, Disease status.

18aC: Describe the immunologic concepts, need for zone of equivalence, advantages/limitations and procedures (samples and reagents needed) for Precipitation tests and recognize the following types: Single Immunodiffusion tests (Coggins), Radial Immunodiffusion tests.

18bC: Describe the immunologic concepts, need for zone of equivalence, advantages/limitations and procedures (samples and reagents needed) for Agglutination tests and recognize the following types: Hemagglutination tests (Coombs an important example), Hemagglutination inhibition test, latex bead agglutination tests, bacterial agglutination tests.

18cC: Given a scenario and results from Precipitation and Agglutination assays, be able to interpret the results in terms of: Primary/Secondary exposure to a pathogen, Infection, Vaccination status, Disease status.

19aC: Describe the immunologic concepts, advantages/limitations and procedures (samples and reagents needed) for Neutralization tests and recognize examples such as serum neutralization test used for rabies serology (RFFIT and FAVN).

19bC: Describe the immunologic concepts, advantages/limitations and procedures (samples and reagents needed) for Complement Fixation tests and recognize examples

19cC: Given a scenario and results from Neutralization and Complement Fixation assays, be able to interpret the results in terms of: Primary/Secondary exposure to a pathogen, Infection, Vaccination status, Disease status.

20aC: Describe the concepts of sensitivity and specificity of a diagnostic test

20bC: Given appropriate data, be able to identify/calculate the sensitivity, specificity of the test or the expected TP/TN/FP/FN.

20cC: Given the sensitivity/specificity of specific diagnostic tests, identify which test is most useful to use in a given scenario.

Clinical Immunology Lectures: Lectures 21-26

21aC: Differentiate between colostrum and milk immunoglobulin composition and species differences

21bC: Describe the importance and the mechanism for maternal immunoglobulin absorption into the neonatal circulation and how maternal immunoglobulin protects the gut of the neonate.

21cC: 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.

22aC: Recognize the different types of classical vaccines, how they differ and the pros and cons of each.

22bC: Identify the type of immune response the different classical vaccines will generate.

22cC: Describe the methods used to attenuate organisms for MLV and to kill "inactivated" vaccines

22aC: Describe the functions of adjuvants and what types of vaccines need them

22bC: Recognize the concept of core and noncore vaccines.

23aC: Recognize the different types of "new generation" vaccines, how they differ and the pros and cons of each.

23bC: Identify the type of immune response the different "new generation" vaccines will generate.

23cC: Describe the potential adverse reactions to vaccines and when certain kinds of vaccines can and cannot be use.

24aD: Describe the events that occur with sensitization (priming) and second exposure to an allergen

24bD: Describe the mechanisms of Type I hypersensitivity and timing of clinical signs.

24cD: Describe the antibody classes and cellular infiltrates involved in Type I hypersensitivity.

24dD: Recognize the clinical signs commonly associated with Type 1 hypersensitivities

25aD: Describe the mechanisms of Type II hypersensitivity and timing of clinical signs.

25bD: 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

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Included in Items: IX and X.

XII. Course Schedule

See appendix.

XIII. 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, MCQ, and students will have two hours to complete.
 - Students will have access to the exams the day of the exam.
 - 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. 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. (Must comply with SGU and SVM assessment guidelines)

- **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. Percent's are carried out to TWO decimal points. **There is no provision in this course to obtain additional points.**

XIV. Recommended study strategies

Combine provided notes and lectures. All assessment will be derived from information in the Lecture PPTs.

XV. **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 are encouraged to participate 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.

XVI. Professionalism statement

Professional behavior is expected at all times regardless of online format.

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

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have

registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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 "O" 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) 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 30 mins](#)
 - c. [The Examsoft/ExamID FAQ](#)
 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

XX. Copyright policy

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Appendices

Course Schedule and weekly topics

Lecture Week	Date	Lectures	Topic	Each week will have one synchronous Zoom office hour
1	18 Jan - 22 Jan	1	Introduction to Immunology	Abeyá
		2	Innate Immunity	Abeyá
2	25 Jan - 28 Jan	3	Innate Immunity	Abeyá
		4	The Complement System	Abeyá
3	1 Feb - 5 Feb	5	Adaptive Immune Response/ Antigen	Abeyá
		6	Adaptive Immune Response/ Antigen	Abeyá
4	8 Feb - 12 Feb	7	Adaptive Immune Response/ APC and Ag processing	Abeyá
		8	MHC	Abeyá
5	15 Feb - 19 Feb	9	Lymphoid Organs; B and T lymphocytes	Abeyá
		10	T helper 1 and T helper 2 cells	Abeyá
6	22 Feb - 26 Feb	11	Cell-Mediated Immunity	Abeyá
		12	B lymphocytes and humoral immunity	Stone
7	1 Mar - 5 Mar	13	Primary/Secondary antibody responses	Stone
		14	More on humoral immune responses	Stone

8	8 Mar - 12 Mar	Midterm (45 questions) - Covers lectures 1-14		
9	15 Mar - 19 Mar	15	Immunodiagnosics	Stone
		16	Immunodiagnosics	Stone
10	22 Mar - 26 Mar	17	Immunodiagnosics	Stone
		18	Immunodiagnosics	Stone
11	29 Mar - 2 Apr	19	Immunodiagnosics	Stone
		20	Immunodiagnosics	Stone
12	5 Apr - 9 Apr	21	Neonatal Immunity	Abeyá
		22	Vaccines	Abeyá
13	12 Apr - 16 Apr	23	Vaccines	Abeyá
		24	Hypersensitivities I	Abeyá
14	19 Apr - 23 Apr	25	Hypersensitivities II	Abeyá
		26	Hypersensitivities III and IV	Abeyá
15	26 Apr - 30 Apr	Review		Abeyá/Stone
		Optional Review	Immunity to Bacteria and Fungi	Abeyá
		Optional Review	Immunity to Viruses and Parasites	Abeyá
16	3 May - 7 May	Finals (45 questions) - Comprehensive.		
17	10 May - 14 May	Finals		
18	17 May - 21 May	Finals		



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

Pathobiology department

Veterinary Virology Syllabus -3 credits

PTHB 515 Term 3

Spring 2021

I. Course Faculty and Staff Information

Course Director: Sonia Cheetham, DVM PhD, Professor Pathobiology.

Email: scheetha@sgu.edu

Tel#1 (473) 444 –ext.3681

Office: SVM trailer

Office hours: 1 hour weekly schedule Zoom sessions (additional office hours can be requested through the class rep or by email to the course director)

II. Course location

Online location—Sakai resources being used: Panopto, Lessons, Assignments, Zoom

III. Prerequisite and/or co-requisite courses

Current 3rd term SVM student, good base on biochemistry and immunology

IV. Required resources . Fenner's Veterinary Virology 5th edition. Course long notes, online access to Sakai

V. Recommended resources

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; links are provided in lessons.

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

Provided in lessons as checklists

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, 8) B. Core Professional Attributes C. Core Clinical Competencies (Skills)

XII. Course Schedule

Dates	Week	Vet Viro asynchronous learning	Office hrs
Jan 18-22	week 1	Lessons a. Introduction b. Replication (3 hrs)	zoom
Jan 25-29	2	Lessons a. Diagnoses b. Pathogenesis (4hrs)	zoom
Feb 1-4	3	Lessons a. Oncogenesis and Immuno b. Evolution (3hrs)	zoom
Feb 8-12	4	Lessons a. Vaccines b. Epidemiology (3hrs)	zoom
Feb 15-19	5	Lessons a. DNA viruses b. RNA viruses (3hrs) c. QUIZ	zoom
Feb 22-26	6	Lesson Viruses of dogs (rabies, distemper, hepatitis, parvo, herpes, kennel cough viruses, papilloma) (3 hrs)	zoom
Mar 1-5	7	Lesson Viruses of cats (FELV, FIV, FIP, herpes, Calici, F panleukopenia) (3hrs)	zoom
Mar 8-12	8	Midterm Viro March 9th (examsoft)	
Mar 15-19	9	COVID discussion (not tested) (2hrs)	zoom
Mar 22-26	10	Lesson Viruses of cattle: FMD, Leukosis, BVD, MCF, IBR & other present, rota Corona in calves (5hrs)	zoom
Mar 29-Apr 2	11	cattle continue (3hrs) shipping fever, Prions	zoom
Apr 5-9	12	Lesson Viruses of small ruminants (3hrs) BT, CAE, OPP, OPA, Orf	zoom
Apr 12-16	13	Lesson Viruses of horses (4hrs) EIA, EVA, E. encephalities, Influenza, rhinopneumonitis, E abortion, Coital exanthema, papilloma sarcoid, vesic stomatitis	zoom
Apr19-23	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
Apr26-30	15	Review	
	16	Final Viro (examsoft)	

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 in lessons 1-9	7	
	Formative Quiz MCQ	5	
	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	6	
	Total	100	

The forum is an important and significant part of an online course. While class discussion is limited on an online asynchronous course and face to face time is limited, the forum can assist with a free flowing conversation. There are identifiable characteristics that distinguish exemplary contributions to the forums from those of lesser quality. The criteria found on the forum rubric will be used to assess the quality of your postings and responses to the postings and comments of peers.

Poor quality postings will be deleted to prevent overcrowding of the forum which facilitates following the threads of enriching topics. Please remember to label your post so that the content is clear for others to follow.

Criteria	Unsatisfactory	Limited	Proficient	Exemplary
Posting quality	Postings show little or no evidence that readings were completed or understood. Postings are largely personal opinions or feelings, or "I agree" or "Great idea," without supporting statements with concepts from the readings, outside resources, relevant research, or specific real-life application. Points=0	Postings repeat basic information, but do not add value OR are outside the scope of the course Points=1	At least 50% of postings display questions that initiate productive discussions OR respond to other students questions thoughtfully OR share a relevant personal experiences that would benefit the forum participants by demonstrating real life cases or scenarios of applying what is being addressed by this course.Points=2	Postings display excellent questions that initiate productive discussions OR respond to other students questions thoughtfully OR share a relevant personal experiences that would benefit the forum participants by demonstrating real life cases or scenarios of applying what is being addressed by this course. Points=3
Participation in the Learning Community	No participation (postings or reading of others postings) OR contributions are only posted on the last day of the course. Points=0	Forum participation calculated by gradebook is 0%-1 but the student has made at least a couple of entries and has read at least 10% of others postings OR postings are placed later, after 2 weeks of that module being covered. Points=1	The student has made sufficient entries so that the forum participation calculated by gradebook is 2-5% and has read at least 30% of peers postings. Points=2	Student has posted significantly. Forum participation calculated by grade book is above 5% and has read at least 40% of peers postings. Points=3
	Points =0	Points=2	Points=4	Points=6

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. Further questions can be asked during the weekly office hour.

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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 session attendance policy: not required but recommended

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

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

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 - 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](#)
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 - d. Examsoft information page
 - e. [The general Reminders/Guidelines](#)

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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

drdan@avianandexotic.com

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"> 2. List avian species and age groups affected. 3. Describe clinical signs and pathology in various age groups. 4. Describe methods of diagnosis and prevention of fowl pox, IB and EDS 76.
20	Commercial Birds	<ol style="list-style-type: none"> 1. Describe economic importance of fungal diseases. 2. Describe etiology, clinical signs and pathology of fungal diseases. 3. Describe methods of diagnosis, prevention and control of fungal diseases. 4. Name various deficiency diseases and their economic impact. 5. 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"> 1. Identify the medical, physical, husbandry and dietary needs of reptile and amphibians species. 2. Apply proper examination, diagnostic, and treatment techniques. 3. Identify and comprehend major diseases of concern for captive and wild species.
26-35	Small Mammals	<ol style="list-style-type: none"> 1. Identify the medical, physical, husbandry and dietary needs of rabbits, rodents, ferrets, mice and other small mammals. 2. Apply proper examination and diagnostic techniques. 3. Identify and comprehend major diseases of concern for captive and wild species.
36	Fish	<ol style="list-style-type: none"> 1. Describe the various ways in which the veterinary profession are and can become increasingly involved with fish 2. Identify unique anatomy and physiology of fish as it applies to disease response and recognition of clinical signs. 3. Distinguish conditions that predispose fish to infection and disease.
37	Fish	<ol style="list-style-type: none"> 1. Discuss the important water quality parameters and their impact on fish health 2. Demonstrate how to measure water quality parameters 3. Determine when and how to alter water quality to improve fish health
38	Fish	<ol style="list-style-type: none"> 1. Distinguish important bacterial diseases of fish and their zoonotic potential 2. Recognize the clinical signs and pathogenic impact that these diseases can have on fish health 3. Identify how to diagnose and treat bacterial diseases of fish
39	Fish	<ol style="list-style-type: none"> 1. Compare and contrast the important parasitic pathogens of fish including location of infection and disease 2. Describe the methodology used to diagnose and treat parasites of fish
40	Fish	<ol style="list-style-type: none"> 1. 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
Spring 2021**

I. Course Faculty and Staff Information

Course instructors

Melinda Wilkerson, DVM, MS, PhD, ACVP (Anatomic/Clinical pathology)
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Richard M. Kabuusu, DVM, MPH, CPH, PhD
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Ms. Lucinda Ogilvie
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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 <http://www.slidehosting.com/Login.php>
Username = SGUGUEST
Password= Leic@2020

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. Students with Accommodations

- a. Students who require 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, pyknotocytes, keratocytes
- c. Identify hemoparasites and species they target: *Anaplasma marginale*, *A. centralie*, *Cytauxzoon*, *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 Observe video and describe how to perform a plasma total protein by refractometer
 - 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: Overview of 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. Outline the main goal of secondary hemostasis
- g. Outline the main regulatory proteins of the secondary hemostasis
- h. Describe the main steps of the cell-based model of thrombin generation
- i. Compare and contrast cell-based model and coagulation cascade
- j. List the role (and factors) of the contact pathway
- k. Outline the main goal of tertiary hemostasis (fibrinolysis)
- l. Outline the main regulatory proteins of the tertiary hemostasis
- m. List the anticoagulant properties of thrombin

17: Disorders of hemostasis

- a. List hemorrhagic patterns associated with primary hemostatic disorders
- b. List hemorrhagic patterns associated with secondary hemostatic disorders
- c. Describe the main clinical pathology abnormalities of primary hemostatic disorders
- d. List key differential diagnoses for extrinsic pathway disorders
- e. List major differential diagnoses for intrinsic pathway disorders
- f. List some differential diagnoses for primary hemostatic disorders
- g. Outline the major causes of thrombosis
- h. Describe the relationship between hemostasis and inflammation

18: Laboratory evaluation of hemostasis disorders

- a. Interpret tests used to assess thrombi formation and/ or antithrombotic processes
- b. Interpret CBC and coagulation test results in clinically healthy animals
- c. Interpret qualitative test results used to assess primary hemostatic disorders
- d. Interpret quantitative test results used to assess primary hemostatic disorders
- e. Interpret tests used to assess intrinsic and common pathway disorders
- f. Interpret tests used to assess extrinsic and common pathway disorders

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
- j. Recognize round cell neoplasms in images and cytology preparations

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. Recognize the major features of neoplastic or inflammatory lesions
- c. Stage estrus in a dog based on cytologic findings
- d. Recognize the major cytologic findings in the prostatic diseases
- e. List common cytologic findings in major hepatopathies
- f. List the sampling techniques for the respiratory tract
- g. Recognize oro-pharyngeal contamination of samples
- h. Classify respiratory samples as neoplastic or inflammatory based on images

23: Body cavity effusions

- a. Outline the major mechanisms 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: Body cavity effusions

- a. List several causes and features of exudates
- b. List major causes and features of septic exudates
- c. Differentiate between neoplastic and inflammatory effusions
- d. Differentiate iatrogenic from pathologic hemorrhage
- e. Differentiate chyle from pseudo-chyle
- f. Classify equine peritonitis based on cytological findings

- g. Describe cytologic features of FIP
- h. Describe cytologic features in uroperitoneum
- i. 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

26: Concentrating ability of the Nephron (Specific Gravity & Osmolality)

- a. Describe or explain the physiologic processes of nephron regarding: GFR, resorption/excretion of water and solutes, osmolality of nephron segments
- b. Describe analytical principles of Urine Specific Gravity & Osmolality and their relationship
- c. Describe mechanisms of polyuria in various disorders (i. e Chronic renal failure, diabetes mellitus, diabetes insipidus, hypercalcemia, hyperadrenocorticism)

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, water, osmolality

- Recognize, list, and explain causes of hypernatremia, hyponatremia, and normonatremia.
- Interpret Na and CL- data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
- Calculate and interpret osmolality
- 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

- Interpret Na and CL- data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
- 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).
- As for d above

32. Electrolytes K & Anion gap

- Recognize, list, and explain causes of hyperkalemia and hypokalemia.
- Be able to interpret K 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
- As for c above

33a, b. Blood gases / Acid Base

- a. Define Acidemia, Alkalemia, Acidosis, Alkalosis, Hypercapnia, Hypocapnia, Hypoxemia, Hypoxia
- b. Interpret blood gas data including:
 - Increases and decreases in plasma pH values
 - Increases and decreases in plasma P_{aCO_2}
 - Increases and decreases in plasma P_{aO_2}
 - Increases and decreases in plasma HCO_3^- concentrations
 - Increases and decreases in plasma total CO_2 concentrations
- c. 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
- d. Explain, list, or recognize the reasons for:
 - Decreased serum HCO_3^- concentration due to poor sample handling
 - Decreased P_{aCO_2} due to sample being exposed to air or when collected with excess heparin
 - Increased P_{aO_2} due to sample being exposed to air or when collected with excess heparin
 - Decreased P_{aO_2} and decreased pH when there is delayed analysis of a heparinized blood sample
 - Increased P_{aCO_2} due to respiratory disease or disorders that restrict respiration or as a compensation to alkalemia
 - Decreased P_{aCO_2} 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 P_{aO_2} due to pulmonary disease
 - Increased P_{aO_2} during gas anesthesia
 - P_{aO_2} is within reference intervals when anemia is causing hypoxia
 - Tissue hypoxia when there is not hypoxemia

34, 35. Calcium, magnesium, Vit D, PTH, PTHrp,

- a. Recognize typical total calcium and phosphorus concentrations, and their regulatory hormone [iPTH, PTHrp, vit. D] data that suggest or indicate:
 - Primary hyper & hypo -parathyroidism
 - Humoral hypercalcemia of malignancy
 - Secondary hyperparathyroidism
 - Hypervitaminosis D
 - Renal insufficiency/failure in dogs, cats, cattle, and horses

- Milk fever
 - a. Interpret Ca, fCa Vit D3, and their regulatory hormone data including:
 - Hypercalcemia and calcemia
 - b. Explain the difference in the regulation of [fCa⁺⁺] in horses compared to other species.
 - c. 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
 - 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
 - Explain, list, or recognize the reasons for hypocalcemia due to hypoproteinemia and/or hypoalbuminemia
 - 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

36. Phosphorus & Magnesium

- a. Interpret phosphorus, magnesium, and their regulatory hormone data including:
 - Hyperphosphatemia and hypophosphatemia
 - Hypermagnesemia and hypomagnesemia
- b. Hyperphosphatemia due to dehydration, renal failure, uroperitoneum, urinary tract obstruction, hypoparathyroidism, and myopathies
- c. Hyperphosphatemia due to in vitro hemolysis or delayed blood sample handling
- d. Hypophosphatemia due to anorexia, hyperparathyroidism, hyperinsulinism, and milk fever
- e. Explain, list, or recognize the reasons for hypomagnesemia due to hypoproteinemia and/or hypoalbuminemia
- f. Hypomagnesemia due to renal failure
- g. 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. Different enzyme data when assays are performed at different temperatures or with different substrates
- a. Interpret serum enzyme data including increased activities of ALP, ALT, AMS, AST, CK, GGT, GMD, ID, LD, and LPS

38. Muscle

- a. Explain, list, or recognize the reasons for:
- Alterations in AST, LD, or CK activities due to in vitro hemolysis or delayed blood sample handling
 - Increased activities of AST, LD, CK, or ALT due to muscular disorders
- b. Interpret serum enzyme data that indicate or suggest:
- Muscle damage

39a. Liver

- a. 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
- c. Interpret serum enzyme data that indicate or suggest:
- Hepatocellular damage
 - Cholestasis
 - Hepatic lipidosis
 - Muscle damage
 - Changes associated with glucocorticoids
 - Decreased glomerular filtration rate

39 b 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
 - Hypercholelism (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) pancreatitis

- a. Explain, list, or recognize the physiologic or pathologic processes or mechanisms that cause the following:
 - Hyperamylasemia, hyperlipasemia, increased PLI concentration in acute pancreatitis
 - Increased TLI concentration, amylase and lipase in azotemic dogs
- b. Interpret
 - increased serum AMS & LPS activities
 - increased PLI concentration
 - Increased activities of AMS or LPS due to pancreatic disease, dehydration, or renal disease
 - Increases in PLI concentration due to pancreatic disease

42. Pancreas (exocrine) - Intestinal disorders

- a. Interpret laboratory test results related to exocrine pancreas and intestine that suggest or indicate:
 - Exocrine pancreatic insufficiency / Pancreatic acinar cell damage
 - Azotemic disorders (decr GFR)
 - Diffuse or segmental disease of intestinal mucosa
 - Protein-losing enteropathy
- b. 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
- Decreased TLI concentration in chronic pancreatitis or pancreatic acinar cell atrophy (exocrine pancreatic insufficiency)
- Decreased cobalamin or folate concentrations due to pancreatic or intestinal disorders
- Increased fecal α 1-PI concentration in dogs and cats with intestinal diseases
- decreased serum TLI concentration
- decreased cobalamin concentration
- decreased and increased folate concentration
- Flat glucose absorption curves in horses with intestinal diseases
- Microbial dysbiosis

43. Endocrine pancreas - hyperglycemia

- 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
 - Increased fructosamine concentration in persistent hyperglycemic states
 - Decreased fructosamine concentration in persistent hypoglycemic states, hypoproteinemic states, or hyperthyroidism
 - Hypoinsulinemia due to β -cell damage or hypoglycemic disorders

44. Endocrine pancreas – hypoglycemia

- Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
 - 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
 - Hyperinsulinemia (inappropriate) relative to glucose in functional β -cell neoplasm and insulin in hypoglycemic disorders
- Interpret serum (blood, plasma) glucose, ketoamine, and insulin concentrations including:
 - Hypoglycemia
 - decreased fructosamine concentration
 - Hyperinsulinemia
- 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 - Hyperadrenocorticism

- a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
 - Typical hematology and Chemistry changes seen in hyperadrenocorticism
 - 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 hyperadrenocorticism
 - Decreased ACTH concentration in hyperadrenocorticism
- b. 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
- b. Interpret serum or plasma cortisol in the following
 - 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
 - Interpret serum or plasma cortisol and ACTH concentrations and urine cortisol:creatinine ratios including:
 - Hypercortisolemia
- c. Differentiate between tests and be able to apply to disease syndromes associated with hyperadrenocorticism
- d. Describe the sensitivity and specificity of tests used for diagnosis of hyperadrenocorticism

46. Adrenal hormones - Hypoadrenocorticism (Addison's disease)

- a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
 - Typical hematology and Chemistry changes seen in hypoadrenocorticism
 - The common presentation in terms of organ involved – ie primary, secondary and tertiary organ
 - Poor cortisol response to ACTH in hypoadrenocorticism

- Increased ACTH concentration in hypoadrenocorticism
- b. Differentiate between tests and be able to apply to disease syndromes associated with hypoadrenocorticism
- c. Describe the sensitivity and specificity of tests used for diagnosis of hypoadrenocorticism

47. Endocrine Hypothyroidism (dogs)

- 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. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
- d. The most common organ involved – i. e. primary, secondary or tertiary organ
- e. Important changes in hematology and chemistry associated with hypothyroidism
- f. Understand euthyroid sick syndrome and list the factors that cause this
- g. Hypothyroxemia or decreased free [T4] due to lymphocytic thyroiditis (or other causes of thyroid gland damage), nonthyroidal disease, and some drug treatments
- h. Increased TSH concentrations due to lymphocytic thyroiditis (or other causes of thyroid gland damage)
- i. Increased anti T4AA concentration due to lymphocytic thyroiditis
- j. List the main breeds of dogs which have lower RIs for T4
- k. Explain, list, or recognize the reasons for:
 - Positive interference by thyroxine autoantibodies on measurement of thyroxine concentration
- l. Interpret serum thyroxine, free thyroxine (by equilibrium dialysis), TSH, and TgAA concentrations including:
 - Hypothyroxemia
 - Hypothyroxemia with concurrent free thyroxine concentrations
 - Increased TSH concentration
 - Increased TgAA concentration

48. Endocrine Hyperthyroidism (cats)

- 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. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
- d. The most common organ involved – i. e. primary, secondary or tertiary organ
- e. Important changes in hematology and chemistry associated with hyperthyroidism
- f. Hyperthyroxemia due to thyroid neoplasm or administration of TSH
- g. Absence of hyperthyroxemia in feline hyperthyroidism due to thyroid adenoma
- h. Failure to suppress [T4] with T3 treatments in a cat
- i. Interpret serum thyroxine, free thyroxine (by equilibrium dialysis), (TSH) concentrations including:
 - Hyperthyroxemia
 - Hyperthyroxemia with concurrent free thyroxine concentrations
 - Decreased TSH concentration

Learning objectives for the laboratory sessions

Lab 1. Part 1. Online Videos and online activities presented in Sakai (~10 min – do on your own)

- 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)
- 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

Lab 1. Part 2. Blood film evaluation of healthy animals (dog, cat, and horse) (~50 min)

Leica online Slide hosting site and prior PowerPoint lectures

Slide hosting site and log in information

<https://SlideHosting.com>

Username = SGUGUEST, password Leic@2020

Select Lessons, choose Lab 1

- 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 2. Blood film evaluation of Anemia cases (3 dog films, information posted in Sakai Lessons and on Leica online slide hosting site) –See log in above, Select Lessons and Lab 2

- 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 3. Instructor will model how to approach Hematology case data interpretations

- Instructor will introduce the Team Cases and expectations for participation via the forum in Sakai and presentations by Zoom for Lab 4. Students will have an opportunity to discuss cases in breakout rooms by TEAMS

Lab 4. TEAM Hematology case presentations

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 summarize 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 5 Leica online slide hosting site (See Aperio log in above, Select Lessons then Cytology Slides Lab 5)

- 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 6

- Cytology case TEAM discussions including on cytology using digital images that emphasize cytological findings suggestive of malignant and benign neoplasms, acute, septic, or chronic inflammation

Lab 7. UA

Online activities (19 mins)

- Distinguish artifacts from significant findings
- Interpret urinalysis, CBC and serum chemistry results
- Urinalysis – chemistry & Sediment “how to” videos
<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)

Lab 8, 9

- Case discussions including interpretation abnormal laboratory findings and describe
- pathogenesis of the laboratory abnormalities (Chemistry and Endocrine analytes)

Lab 10

TEAM case presentations 3-4 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. Cases 1 – 14 will be discussed by Teams 1 – 14 during the lab session. Each zoom will be recorded.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
<p>CLO1. Identify and explain pre-analytical and analytical aspects of laboratory analytes</p> <p>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</p> <p>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)</p> <p>CLO4. Identify healthy 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, and in urine examination.</p>	<p>A. Core Medical Knowledge</p>
<p>Being professional in forum/participation/assignments</p>	<p>B. Core Professional Attributes</p>
<p>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.</p>	<p>C. Core Clinical Competencies (Skills)</p>

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XII. Course Schedule

Wk.	Lecture topic and lecture hour equivalents	Lab Assign	Assessment (f = formative) S= Summative	~minutes effort for the week
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)	200
2	5. Regenerative anemias Lab 1 Online videos of manual HCT blood film preparation & staining Brief Panopto recording of Hematology analyzer principles Lab 1: Blood film evaluation via Zoom 6. Causes of Hemolytic anemias 7. Fe testing/Erythrocytosis	Lab 1 – MCQ	(4 f Q - 0 pt) Polling Q 1.0 point (S) Lab 1. 1.0 points (S)	180
3	8. Leukocytes (left shift) 9. Leukocytosis Lab 2: Interpretation of Anemic blood films via Zoom (Aperio digital microscopy – Teams 1 – 7, 3-4 pm, Teams 8 – 14, 4:05 – 5:05 pm) 10. Leukopenia 11. Leukocyte morphology and parasites	Lab 2 – Question	Erythrocyte Quiz 2.5 points (S) Lab 2. 1 points (S) (1 f Q- 0 points)	200
4	12. Platelets 13. Proteins part 1 and 2 Lab 3: Dr. Wilkerson demonstrates Hematology data interpretation 14. Overview of hemostasis	View Sakai video of refractometry measurement of plasma proteins Zoom – all students	 Leukocytes, Platelets, Proteins Quiz 5.0 points (S)	200
5	15. Disorders of hemostasis 16. Laboratory evaluation of hemostasis Lab 4: Teams Hematology/hemostasis Case Presentations	Zoom – Oral presentations All students	Polling qn 1 point (hemostasis) 2 points for individual, 5 points for forum (S) 14 MCQs (S) Hematology Total = 34	150
6	17. Principles of cytology 18. Inflammatory & neoplastic processes Lab 5. Cytology Digital Microscopy 19. Benign neoplasms and internal organs	Zoom /Aperio Digital slides 1 session 3- 4 pm	Hemostasis qz 5 points (S)	180
7	20. Cavitory effusions 21. Synovial fluids and CSF cytology		Lab-based Q&A	170

	Lab 6: Cytology Team Case discussions using zoom	Zoom – Oral presentation	1 points (S) Cytology qz 10 points (S) Hemostasis/cytology Total = 17	
8	MIDTERMS – NO EXAM IN CLIN PATH			
9	22. Physiologic processes of the Nephron 23. Urinary system 24. Interpret urinalysis data 25. Mechanisms of polyuria	Urinalysis Online Questions	4.0 points (S)	238.29
10	26. Na, K, H ₂ O, osmolality 27. Cl, HCO ₃ , Anion Gap Lab 7: Renal/UA/Electrolytes 28. Blood gases & acid base 29. Ca, Vit D, PTH, PTHrp, Phos	Zoom cases Q&A case discussion 3 – 4 pm	6.0 points (S) (4MCQ cases)	198.1
11	30. Ca, Vit D, PTH, PTHrp, Phos 31. Ca, Vit D, PTH, PTHrp, Phos 32. Ca, Vit D, PTH, PTHrp, Phos 33. Enzymes: muscle, liver, pancreas	Zoom Q&A case discussion 3 – 4 pm	4.0 points (S) (4MCQ cases) 2.0 points (S) (Images lab MQC)	147.
12	34. Enzymes: muscle, liver, pancreas 35. Liver function Lab 8. Ca, Phos, Mag, Hormones 36. Lipids	Zoom Q&A case discussion 3 – 4 pm	4.0 points (S) (4MCQ cases)	220.9
13	37. Exocrine pancreas 38. GI disorders 39. Endocrine pancreas 40. Glucose		4.0 points (S) (4MCQ cases)	193.
14	41. Adrenal hormones 42. Adrenal hormone Lab 9. Liver, Muscle, Lipids/Exo/Endocrine pancreas 43. Thyroid hormones 44. Thyroid hormones		4.0 points (S) (4MCQ cases)	215.5
15.	50. Mandatory Office hours to discuss endocrine cases Lab 10: chemistry case presentations by TEAMS		6 points for Team work 2 points for individual on Chem / endo cases (S) Chem Total 36	
16	Final Exam May 5. Comprehensive Exam 25 points (15 qns over Chem & Endocrinology; 6 qns over hematology, 2 qns on Hemostasis and 2 qns on Cytology) Total Points for the Course = 112			

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, and Dates)

CLO	Assessment	Learning Activity	Points	Avail Date/ Due Date
Hematology (14 Lectures)				
CLO1. Explain pre-analytic and analytical concepts of lab data	Sakai Intro Quiz	2 Matching Q on Lecture 1 part 1	0.25	Jan. 18/ Jan 25
		6 MCQ on Lecture 1 part 2	0.75	
CLO2. Interpret laboratory data using classifications (Classify anemia)	Sakai Quiz	2 - MCQ Lecture 2 Classifying Anemias	0.5	Jan.18/ Jan 25
CLO4. Identify abnormal erythrocyte morphology	Sakai Quiz	2 - Matching Q Lecture 3 Erythrocyte Morph	1	Jan 18/ Jan 25

CLO4. Identify abnormal erythrocyte morphology and explain significance	Sakai Quiz	6-MCQ Lectures 4-8 (Erythrocyte section)	2.5	Jan. 25/ Feb. 1
CLO4. Identify leukocyte subsets in blood films of equine, canine and feline	Sakai Short answer polling question on Poppy data of Lab 1	Lab 1. Digital Microscopy viewing healthy blood films	2	Jan. 25/ Feb. 1.
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis CLO4. Identify Abnormal cells in a blood film	Sakai Lab 2 Quiz	Lab 2. Digital Microscopy viewing abnormal blood films in 3 dogs	1	Feb. 1/ Feb. 9
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Sakai quiz	8- MCQ on Leukocytes, Platelets, thrombocyte Lectures 9-15	5	Feb. 8/ Feb. 15
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Written Forum	Lab 4 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	5	Feb. 9/ Feb. 15
CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data	Rubric (see below)	Lab 4. 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	Feb. 9/ Feb. 17
CLO2. Interpret laboratory data	Sakai Quiz over Lab 5	Lab 4. 14- MCQ	14 Total	Feb. 9/

using classifications CLO3. Describe pathogenesis of abnormal lab. data	cases		points for Hematology 34	Feb. 17.
Hemostasis (3 lectures)	Sakai lessons	Hemostasis	1	Feb 11/ Feb 16
	Sakai Quiz	Hemostasis lectures MCQ	5	Feb 25/ March 1
Cytology (5 lectures) CLO2. Interpret laboratory data CLO3. Describe pathogenesis of abnormal lab. data CLO4. Identify cells in cyto preps	Sakai Quiz	Cytology lectures and lab sessions	10	March 16/ March 20
CLO3. Describe pathogenesis CLO4. Identify cells in cyto preps	Q&A (oral)	Lab 5. Digital Microscopy on cytologic images or	1	
CLO3. Describe pathogenesis of lab data CLO4. Identify cells in cyto preps	Q&A (oral)	A randomly selected team member answers the question		Total 17
Chemistry (26 lectures)	Assessment	Learning Activity	Points	Avail Date/ Due Date
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis CLO4. Identify structures / cells in urine	Week 9 (15-19 Mar) Sakai Quiz	Case based MCQ Renal system & urinalysis	4	15 Mar Due 22 Mar
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis CLO4. Identify	Week 10 (22 – 26 Mar) Sakai Quiz	Zoom Lab 7 Q&A case discussion 3 – 4 pm Renal / UA, Electrol & Acid base Quiz Images for UA Lab	2	22 Mar Due 29 Mar

structures / cells in urine		MCQ Cases Electrol & Acid base	4	
Chem / cont	Assessment	Learning Activity	Points	Avail Date/ Due Date
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Week 11 (29 Mar - 2 Apr) Sakai Quiz	Case based MCQ on Ca, Vit D, PTH/ PTHrP, Mg and Phos	4	29 Mar Due 5 Apr
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Week 12 (5 – 9 Apr) Sakai Quiz	Lab 8 Q&A case discussions 3 – 4 pm Case based MCQ on Enzymes: muscle, liver, pancreas, lipids	2	5 Apr Lab 7th Apr Due 12 Apr
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Week 13 (12 – 16 Apr) Sakai Quiz	Case based MCQ on Exocrine pancreas – pancreatitis , GI, Endocrine pancreas – Hyper & Hypoglycemia	4	12 Apr 19 Apr
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Week 14 (19 – 23 Apr)	Lab 9 Q&A case discussions 3 – 4 pm Liver, Muscle, Lipids, Exo/Endocrine pancreas, Endocrine - Adrenal (hypo/ Hyper-adrenocorticism) and Thyroid (Hypo/ hyperthyroidism) Case based MCQ Adrenal (hypo/ Hyper-adrenocorticism) and Thyroid (Hypo/ hyperthyroidism)	4	19 Apr Lab 21 Apr Due 26 Apr
CLO2. Interpret Lab. Data CLO3. Describe pathogenesis	Week 15 (26 – 30 Apr)	Lab 10 TEAM Case presentations - (1 session 3:00-5:00) Team work - Forum Verbal response to Instructors questions regarding the case via Zoom. Each member of the team will be selected	6 points 2 points partici	19 Apr Zoom 28 Apr

		randomly by instructor to explain a part of the case Teams need to collaborate on their responses so all members agree on all responses for each question	pation Subtotal for chem 36	
Final Exam	Week 16	MCQ in Exam Soft Using Cases	25 pts	
Hematology		Classify anemias and leukograms, interpret thrombogram and proteins	6 qns	
Hemostasis		Hemostasis	2 qns	
Cytology		Cytology	2 qns	
Chemistry		Exocrine pancreas & GI disorders	15qns	
		Endocrine pancreas and glucose, Adrenal & Thyroid		
Total			112	

Rubric for oral participation

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 written response to the instructor.

Team # _____	Criteria of Standards of Performance including evidence of Professionalism		
Answers a question asked by the Instructor in Zoom and is engaged	Thorough and complete Provides a complete thorough explanation to the question 2 points	Somewhat complete Student provides an explanation to the question that partially applies concepts or deviates from their specific question 1 points	Inadequate Student did not participate and did not provide an explanation of their absence or lack of preparation 0 points
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 chats 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

IX. 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

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

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 pathogenesises, 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 Small Animal Medicine and Surgery (SAMS)
RADIOLOGY I SYLLABUS (1 credit)

SAMS 501, TERM I

Fall 2020 Spring 2021

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 ([pdf](#)) lectures and Panopto recordings of lectures in My Courses

Labs: [Powerpoint \(pdf\) self-study questions. Powerpoint \(pdf\) and Panopto Powerpoint \(pdf\) self-study questions. Powerpoint \(pdf\) and Panopto recording with study question answers and explanations.](#)

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

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London Royal Veterinary College website on normal radiographic anatomy:
<http://www.onlineveterinaryanatomy.net/>

VI. 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 powerpoint (pdf) 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:**

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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/ **recognize** 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 **review** 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 **harmonize** 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', ' 2021-01-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
- **recognizing** common artifacts

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- 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
- **recognizing** normal radiological anatomy in juvenile and adult cats and dogs and **recognizing** 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 2:00 pm. 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

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- 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>

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Discuss image quality, radiographic technique, sources of potential artefacts and their prevention	<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>
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>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>
Demonstrate proficiency in the correct use of medical terminology when verbally describing and reporting diagnostic radiographic studies of cats and dogs.	<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 89% 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.

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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 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

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Examination details: SAMS 501, Radiology I

Examination/quizzes

<u>Quiz/Exam</u>	<u>Date</u>	<u>Number of MCQs</u>	<u>Maximum Points</u>	<u>Lecture Content</u>	<u>Lab Content</u>
<u>Quiz 1</u> <u>In</u> <u>MyCourses/Test&Quizzes</u>	<u>Week 5-</u> <u>Week of</u> <u>Feb 15</u>	<u>10</u>	<u>5 points</u> <u>(0,5/question)</u>	<u>Lectures</u> <u>1A & 1B</u>	<u>Lab 1</u>
<u>Final Exam</u> <u>In ExamSoft</u>	<u>Week 16-</u> <u>May 5</u>	<u>40</u>	<u>40</u> <u>(1/question)</u>	<u>Lectures</u> <u>2-7</u>	<u>Labs</u> <u>2-7</u>
<u>Total</u>			<u>45 points</u>		

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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

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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 Carena website):

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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**

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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.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) (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.

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- 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

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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 public 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
<p>Week 2</p> <p>Week of August January 25, 2021-24th</p>	<p>Lecture 1A: Physics of radiology: X-ray generator, interaction of the x-ray with patient/ matter, image formation and interpretation, image contrast</p>	<p>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 6 explain radiographic image quality: film blackening, image contrast</p>
<p>Week 3</p> <p>Week of</p>	<p>Lecture 1B2: Artefacts and Radiation safety: Time, shielding, technique, monitoring,</p>	<p>1 Explain definition, causes, examples and prevention of typical artefacts 2 Explain causes, advantages and disadvantages of image distortion and magnification</p>

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<u>February 1, 2021</u>	methods of radiation protection (ALARA)	3 explain the sources of radiation hazard in using X-rays in veterinary medicine and list how radiation hazards can be controlled/ minimized 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 <u>September 7thFebruary 8, 2021</u>	LAB 1	
Week 5 Week of <u>September 14th February 15, 2021</u>	Quiz	Quiz is based on Lectures <u>1A & 1B, and 2, and AND</u> lab 1 10 MCQ questions with/without images Total points 5
Week 6 Week of <u>September 21stFebruary 22, 2021</u>	Lecture 23: Radiographic technique and anatomy of the canine and feline thoracic limbforelimb	1 list and identify the standard projections for radiographing the thoracic limbforelimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the forelimb-thoracic limb of dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal forelimbthoracic limb 4 demonstrate an understanding of principles of radiation safety
Week 7 Week of <u>September 28thMarch 1, 2021</u>	Lecture 34: Radiographic technique and anatomy of the canine and feline hindlimb and pelvispelvis and pelvic limb	1 list and identify the standard projections for radiographing the hindlimb and pelvis and pelvic limb in dogs and cats 2 identify and interpret the normal and comparative radio-graphic anatomy of the hindlimb and pelvispelvis and pelvic limb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal hindlimb and pelvispelvis and pelvic limb 4 demonstrate an understanding of principles of radiation safety
Week 8 Week of <u>March 8, 2021</u>		

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Week 9 Week of October <u>12thMarch 15,</u> <u>2021</u>	Lecture 45: Radiographic technique and anatomy of the canine and feline vertebral column	1 list and identify the standard projections for radiographing 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 Week of October <u>19thMarch 22,</u> <u>2021</u>	Lecture 56: 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 <u>26thMarch 29,</u> <u>2021</u>	Lecture 67: 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 <u>2ndApril 5,</u> <u>2021</u>	Lecture 78: 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– <u>23rdApril 12,</u> <u>19. 26</u>	Revision for final exam	Review lectures <u>3,4,5,6,7 and 8-7</u> AND labs <u>2,3,4,5,6 and 7-7</u>
Week 16	Final exam	<u>December 2ndMay 5th</u>
Quiz 1 -Week of September 14th – week 5Week 5, week of February 15		

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Final Week 16, May 5th

XXII. Radiology Labs:

Week number	Lab No & content	Lab learning outcome
Week 4 <u>Week of February 8, 2021</u>	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 5 identify examples of artefacts and their prevention 6 explain causes, advantages and disadvantages of image distortion and magnification 7 explain the sources of radiation hazards in using X-rays in veterinary medicine and list how radiation hazards can be controlled
Week 5 <u>Week of September 14th February 15, 2021</u>	Quiz	Review lectures 1 and 2 and Lab 1
Week 6 <u>Week of February 22, 2021</u>	2 Forelimb Thoracic Limb Radiographic technique and anatomy of the canine and feline forelimb thoracic limb	1 list and identify the standard projections for radiographing the thoracic limb forelimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the forelimb thoracic limb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal thoracic limb forelimb 4 demonstrate an understanding of principles of radiation safety
Week 7 <u>Week of March 1, 2021</u>	3	1 list and identify the standard projections for radiographing the pelvis and hindlimb pelvic limb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the pelvis and pelvic limb hindlimb in dogs and cats

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	Pelvis and Pelvic Limb Radiographic technique and anatomy of the canine and feline pelvis and pelvic limb	3 demonstrate an understanding of radiographic technique relevant to the small animal pelvis and pelvic limb 4 demonstrate an understanding of principles of radiation safety
Week 8 Week of March 8, 2021		
Week 9 Week of March 15, 2021	4 Vertebral Column Radiographic technique and anatomy of the canine and feline vertebral column	1 list and identify the standard projections for radiographing the hindlimb-vertebral column in dogs and cats 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 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 Week of March 22, 2021	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 March 29, 2021	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 April 5, 2021	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

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Weeks 13-15 <u>Weeks of April</u> <u>12, 19, 26, 2021</u>	Reviewse lectures 3,4 5,6,7 and 8 AND labs 2,3 4,5,6 and 7	
Week 16	Final Exam	

Point Allocation SAMs 501:	45
Total points = 45	Explanation of point allocation:
<i>Total points breakdown:</i>	
1 Quiz:	Lectures 1 and 2 are both on physics and content is covered in Lab 1, 10 9 Questions 0.5 pts each
Final	Final is on 6 lectures and 6 labs =40 questions @ 1 point each

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XXIII

SVM Course Code: **SAMS 501**

Course Director: Dr T Hanson

~~Fall 2020~~ Spring 2021 Online Student Coursework schedule

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Course Lectures/Labs:	Course Format:	Weekly Learning Schedule:	Expected Hours:
<p>Week 2 During the week: August 24th January 25, 2021</p> <p>Lecture 1A Physics of radiology: X-ray generator, interaction of the x-ray with patient/ matter, image formation and interpretation, image contrast</p>	<p>Lecture 1A in MyCourses/ Resources</p>	<p>During the week: August 24th</p> <p>ZOOM introduction to the course Monday August 24th January 25 at 2:30 pm with Dr. Hanson</p> <ol style="list-style-type: none"> 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 February 1, 2021</p> <p>Lecture 1B2: Artifacts and Radiation safety: Time, shielding, technique, monitoring, methods of radiation protection (ALARA)</p>	<p>Lecture 1B2 in MyCourses/ Resources</p>	<p>During the week: August 31st</p> <p>ZOOM office hours/ Q & A Monday August 31st February 1st at 2:30 pm with 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 	N/A
<p>Week 4 During the week: September 7th February 8, 2021</p> <p>Monday Feb. 8, Independence day- Grenada</p> <p>Lab 1 Physics of radiology/ Artifacts/ Radiation safety/ Radiographic technique</p>	<p>Lab 1 Physics and radiation safety questions on MyCourses/ Resources</p> <p>Questions for Lab 1 in MyCourses/ Resources</p> <p>Key for Lab 1 questions in MyCourses/ Resources and Panopto</p> <p>Key for self study questions in MyCourses/ Resources</p>	<p>During the week: September 7th</p> <p>ZOOM office hours/ Q & A Wednesday September 7th February 10 at 2:30 pm with Dr. Hanson (optional)</p> <p>On Friday Check answer key of the Lab 1 self study questions on MyCourses/ Resources</p> <ol style="list-style-type: none"> 1. Work through Lab 1 questions 2. Work through Lab 1 self study questions <p>On Friday check Lab 1 answer key and Panopto recording in My Courses/panopto</p>	

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		<p>On Friday Check answer key of the Lab 1 and self study questions in MyCourses/ Resources</p> <p>Prepare for Quiz 1 Week 5</p> <p>Lectures 1A & 1B and Lab 1</p>	
<p>Week 5 During the week: September 14th <u>February 15, 2021</u></p> <p>QUIZ</p>	<p>Quiz- 10 questions= 3 points</p> <p>Lectures 1A and 1B and Lab 1</p>	<p>During the week: September 14th<u>February 15</u></p> <p>ZOOM office hours/ Q & A Monday February 15th at 2:30 pm with Dr. Hanson (optional)</p>	
<p>Week 6 During the week: September 21st<u>February 22, 2021</u></p> <p>Lecture 23 and Lab 2:</p> <p>Radiographic technique and anatomy of the canine and feline forelimbthoracic limb</p>	<p>Lecture 23 canine and feline forelimb<u>thoracic limb</u> 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</p>	<p>During the week: September 21st</p> <p>ZOOM office hours/ Q & A Monday September 21st<u>February 22</u> at 2:30 pm with 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>Work through Lab 2 self study questions</p> <p>On Friday check Lab 2 answer answer key and Panopto recording on My Courses/panopto</p>	

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	MyCourses/ Resources	On Friday check answer key of the self study questions on MyCourses/ Resources	
Week 7 During the week: September 28th March 1, 2021 Lecture 34 and Lab 3: Radiographic technique and anatomy of the canine and feline hindlimb and pelvis & pelvic limb	Lecture 34 Canine and forelimb hindlimb and pelvis feline pelvis & pelvic limb on MyCourses/ Resources Lab 3 Canine and feline pelvis & pelvic limb hindlimb and pelvis on MyCourses/ Resources Self study questions for Lab 3 on MyCourses/ Resources Key for Lab 3 questions on MyCourses/ Resources and panopto Key for Lab 3 self study questions on My Courses/Resources Key for Lab 3 self study questions on My Courses/Resources	During the week: September 28th ZOOM office hours/ Q & A Monday September 28th March 1 at 2:30 pm with Dr. Hanson (optional) <ol style="list-style-type: none"> Review Lecture 34 powerpoint Listen to lecture 34 panopto recording Work through Lab 3 questions Work through Lab 3 self study questions Work through Lab 3 self study questions On Friday check Lab 3 answer key and Panopto recording on My Courses/panopto On Friday check Lab 3 answer key and Panopto recording on My Courses/panopto On Friday check answer key of the Lab 3 self study questions on MyCourses/ Resources On Friday check answer key of the Lab 3 self study questions on MyCourses/ Resources	N/A
Week 8	MIDTERMS WEEK		

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Week of March 8, 2021			
Week 9 During the week: October 12th <u>March 15, 2021</u> Lecture 45- and Lab 4 Radiographic technique and anatomy of the Canine and feline vertebral column	Lecture 45 Vertebral column on MyCourses/ Resources Lab 4 : Canine and feline vertebral column on MyCourses/ Resources Self-study questions to Lab 4 on MyCourses/ Resources Key for Lab 4 on MyCourses/ Resources and Panopto Key for Lab 4 self study questions on My Courses/Resources Key for Lab 4 self study questions on My Courses/Resources	During the week: October 12th ZOOM office hours/ Q & A Monday October 12th <u>March 15</u> at 2:30 pm with Dr. Hanson (optional) 1. Review Lecture 4 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 On Friday check answer key and Panopto recording on My Courses/panopto On Friday check answer key of the self study questions on MyCourses/ Resources On Friday check answer key of the self study questions on MyCourses/ Resources	N/A
Week 10 During the week: October 19th <u>March 22, 2021</u> Lecture 56 and Lab 5: Radiographic technique and anatomy of the Canine and feline thorax	Lecture 56 Canine and feline thorax on MyCourses/ Resources Self-study questions for Lab 5 on MyCourses/ Resources Answer Keys to Lab 5 questions on MyCourses/	During the week: October 19th ZOOM office hours/ Q & A Monday October 19th <u>March 22^h</u> at 2:30 pm with Dr. Hanson (optional) 1 Review Lecture 5 Powerpoint pdf 2 listen to lecture 6 Panopto recording 3 Work through Lab 5 questions 4 Work through the self-study questions to Lab 5	NA

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	<p>Resources and Panopto</p> <p>Answer key to lab 5 self study questions on My Courses/Resources</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</p> <p>During the week: October 26th <u>March 29, 2021</u></p> <p>Friday April 2, Good Friday</p> <p>Lecture 67 and Lab 6:</p> <p>Radiographic technique and anatomy of the Canine and feline abdomen</p>	<p>Lecture 67 Canine and feline Abdomen: Powerpoint pdf on MyCourses/Resources</p> <p>Lab 66 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>Answer key to self study questions on My Courses/Resources</p> <p>Answer Keys to Lab 6 and panopto recording on</p>	<p>During the week: October 26th</p> <p>ZOOM office hours/ Q & A Monday October 26th <u>March 29</u> at 2:30 pm with Dr. Hanson (optional)</p> <ol style="list-style-type: none"> 1. Review Lecture 6 Powerpoint pdf 2. listen to the Panopto recording Lecture 6 3. Work through Lab 6 3. Work through the self study questions to Lab 6 <p>On Friday check <u>Lab 6</u> 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>On Friday check answer key of the self study questions on MyCourses/ Resources</p>	N/A

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<p>Week 12 <u>During the week:</u> <u>April 5, 2021</u></p> <p>Monday April 5, Easter Monday</p> <p>Week of November 2nd-8th</p> <p>Lecture 7 and Lab 7:8 Radiographic technique and anatomy of the Canine and feline skull</p>	<p>Lecture 7 Canine and feline Skull Powerpoint pdf on MyCourses/ Resources</p> <p>Lab 7 Questions on MyCourses/ Resources</p> <p>Self-study questions for Lab 7 on MyCourses/ Resources</p> <p>Answer Keys to Lab 7 and self-study questions on MyCourses/ Resources</p> <p>Panopto recording of answer key for lab questions questions</p> <p>Panopto recording of answer key for lab questions questions</p>	<p>During the week: November 2nd</p> <p>ZOOM office hours/ Q & A Friday April 9 at 2:30 pm with Dr. Hanson (optional)</p> <ol style="list-style-type: none"> Review Lecture 7 Powerpoint pdf listen to the Panopto recording of lecture 8 Work through Lab 7 Work through the self-study questions to Lab 7 <p>On Friday check Lab 7 and self study answer keys on My Courses/resources</p> <p>O Friday check Panopto recording of the Lab 7 questions on MyCourses/ Panopto</p> <p>Work through the self study questions to Lab 7 O Friday check Panopto recording of the Lab 7 questions on MyCourses/ Panopto</p>	<p>NA</p>
<p>Week 13-15 During the weeks: November 9th TO November 23rd April 12, 19, 26</p>	<p>Review lectures 3-8-7 Review Labs 2-7</p>	<p>During the weeks: November 9th TO November 23rd</p> <p>ZOOM office hours/ Q & A Mondays at 2:30 pm with Dr. Hanson (optional)</p>	

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Review for FINAL EXAM		Study all material related to Lectures <u>2-7</u> AND Labs <u>2-7</u> for the FINAL exam	
Week 16 DECEMBER 2ND <u>On MAY 5th, 2021</u>	Final EXAM	During the week: December 2nd	Final Lectures 3 ^{Formatted: Superscript} 82-7 Labs 2-7 40 points
Final EXAM	Lectures 3 to <u>82-7</u> Labs 2 to 7 40 questions, MCQ, / 40 points		

Dear Students of Radiology!:-
 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 2:30 pm

Assessment Summary:

Point Allocation for course:	Point Allocation On line
Total lectures: 8	Total points = 45
Total Radiology Labs: 7	<i>Total points breakdown:</i>
	Quiz- 5 points
	Final exam 40 points- Lectures 2-7, Labs 2-7

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ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT
RADIOLOGY II SYLLABUS (1 credit)
SAMS 502, TERM II
Spring-Spring 2021

I. Course Faculty and Staff Information

Course Director: ~~Thomas~~ M. 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, self study questions, answer keys and Panopto recordings of lab answers 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.onlineveterinaryanatomy.net/>

VI. 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 available on the online video Panopto system in My Courses, as well as Powerpoint (pdf):- (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.

Labs are provided according to the schedule. These will be provided as Powerpoint(pdf) with a series of self study questions. Subsequently the answer key to the lab questions will be released as a Powerpoint (pdf) as well as a panopto video presentation in 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 review 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', '2021-01-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 at the beginning of term.

The Panopto recordings will be available at the beginning of the term.

The Lab questions will be available on MyCourses as a Powerpoint pdf at the beginning of the term

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 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
- Recognize the standard *projections* used in equine and bovine radiology
- Recognize 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.

Apply the principles of image interpretation and discuss image quality, radiographic technique, sources of potential artefacts and their prevention.	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.
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.	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.
Apply imaging terminology correctly when writing or verbally describing and reporting diagnostic radiographic studies of horses, cattle and birds.	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.

XII. Course Schedule

Appended as a table under ‘*Appendices*’.

XIII. Grading and assessment policy

Types of assessment: There will one quiz 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 Examsoft 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 scale applies:

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/Quiz details: SAMS 502 / Radiology II

Examination	Spring 2021	MCQs	Total points	Content
Quiz 1 Via My courses Test and Quizzes tab	Week 6, Week of February 22	10	5 0.5 pts per question	Lectures 1 & 2 Labs 1 t& 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 (refer student to the student manual page if applicable)

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

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

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

Lecture or Zoom session attendance policy:

Laboratory session attendance policy:

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 (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) 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.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. 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 public pages on the internet, e.g. *facebook*.

XXI Appendices:

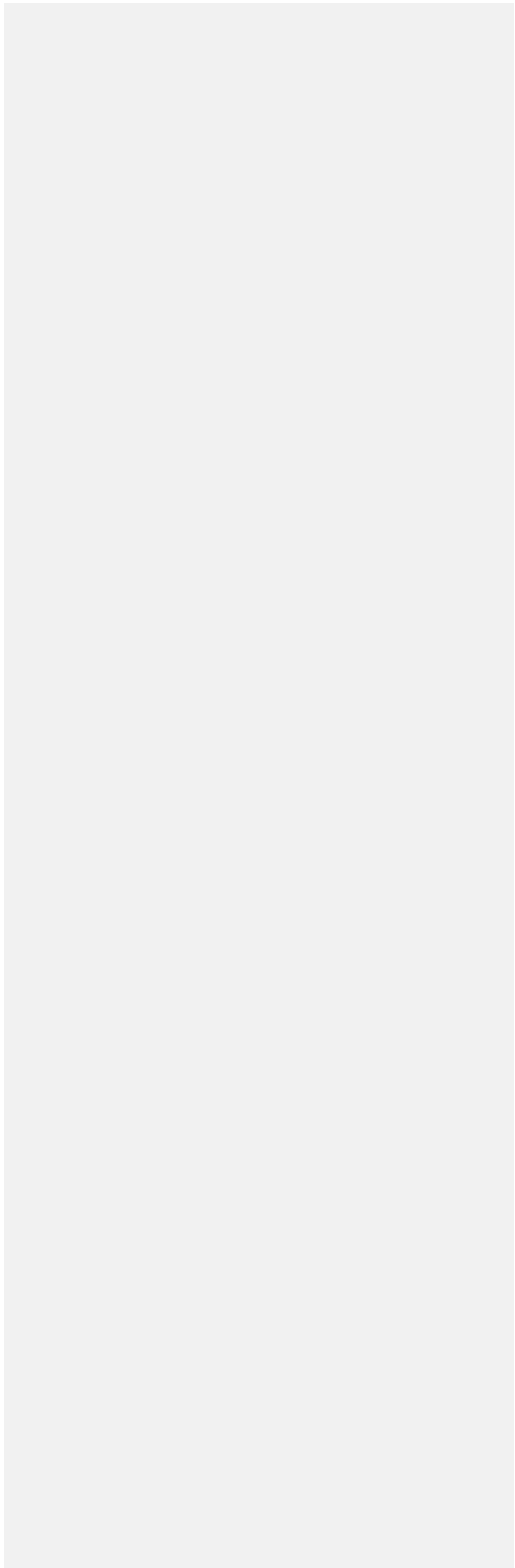
Appended are the lecture and radiology lab schedules, lecture learning outcomes

SAMS 502 / Radiology II Lecture schedule

Week	Lecture content	Lecture learning outcome
Week 2	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
Week of January 25		
Lecture 1		

Bovine radiography,		
Week 3 Week of February 1 Lecture 2 The equine and bovine thorax	The equine and bovine thorax: Technique, projections, normal radiological anatomy, variations, labeling	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. List and identify the standard radiographic projections for the bovine and equine thoracic vertebral column- adult and juvenile. Identify the normal radiographic anatomy of the adult and juvenile equine and bovine vertebral column and the anatomical variations
Week 4 Week of February 8 Lecture 3 The equine foot and fetlock	The equine foot and fetlock: Projections, technique, radiological anatomy, variations, labeling.	Explain how the equine foot, phalanges and fetlock are radiographed. List and identify the standard and common oblique radiographic projections, using correct descriptive terminology, for the equine foot and phalanges and metacarpal/metatarsal joints. Be aware of the reasons for the use of standard oblique projections. Identify the normal radiographic anatomy of the adult and juvenile equine foot, phalanges and fetlock joint and the anatomical variations.
Week 5 Week of February 15 Review	Review week of lectures 1 and 2 And labs 1 and 2	REVIEW ALL CONTENT RELATING TO LECTURES 1 and 2 AND LABS 1 and 2

Week 6 Week of February 22 QUIZ	Quiz 1	ALL CONTENT RELATING TO LECTURES 1 and 2 AND LABS 1 and 2
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<p>Week 7</p> <p>Week of March 1</p> <p>Lecture 4</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>Week 8</p> <p>Week of March 8</p> <p>Week 9</p> <p>Week of March 15</p>	<p>Midterm weeks</p>	
<p>Week 10</p> <p>Week of March 22</p> <p>Lecture 5</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>

Week 11 Week of March 29 Lecture 6 Equine radiology: Skull	The equine skull: Technique, standard projections, radiological anatomy, variations, labeling.	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.
Week 12 Week of April 5 Lecture 7 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 13-15 April 12- May 2	Review of Lectures 3, 4,5,6 and 7	Review all material related to lectures 3, 4, 5,6 and 7
Week 16-17 Final Exams		

Radiology II Lab Contents and Learning Outcomes:

Lab location: On line

Lab No	Lab groups Date & time	Lab content	Lab learning outcome
Week 2 Lab 1 Bovine radiography	Week of January 25	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

Week 3 Lab 2 Equine and bovine thorax	Week of February 1	The equine and bovine thorax: Technique, projections, normal radiological anatomy, variations, labeling	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
Week 4 Lab 3 Equine foot and fetlock	Week of February 8	The equine foot and fetlock: Projections, technique, radiological anatomy, variations, labeling.	Explain how the equine foot, phalanges and fetlock radiographed. List and identify the standard and oblique projections of the foot, phalanges and fetlock Identify the normal radiographic anatomy of the equine foot and fetlock; juvenile and adult
Week 5	Week of February 15	Review week	Review all material related to lectures 1 & 2 and Labs 1 & 2
Week 6	Week of February 22	QUIZ 1	

Week 7 Lab 4 Equine radiology Forelimb	Week of March 1	The equine forelimb; shoulder, elbow, carpus and meta-carpus. Projections, radiological anatomy, variations, labeling	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. List and identify the standard projections Identify the normal radiographic anatomy of the equine forelimb
Week 8	Week of March 8	MID-TERMS WEEK	
Week 9 Lab 5 Equine radiology Hindlimb	Week of March 15	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 10 Lab 6 Equine radiology Skull	Week of March 22	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

SVM Course Code: **SAMS 502**

Course Director: Dr T Hanson

Spring 2021 Online Course Work Schedule

Course content Lectures/Labs:	Resources provided:	Weekly Learning Schedule:	Hours
<p>Week 2</p> <p>During the week: January 25</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: January 25</p> <ol style="list-style-type: none"> 1. ZOOM introduction to course 4:00pm 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>	Lecture:1 Lab:2
<p>Week 3</p> <p>During the week: February 1</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>During the week: February 1</p> <ol style="list-style-type: none"> 1. ZOOM office hours/ Q and A 4:00pm 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 	Lecture:1 Lab:2

	<p>Key for Lab 2 self study questions on MyCourses/</p> <p>Panopto recording of the lab 2 key</p>	<p>On Friday check answer keys to the Lab 2 questions and the self study questions</p> <p>On Friday check panopto recording of the lab answer key</p>	
<p>Week 4 During the week: February 8</p> <p>Monday Feb. 8, Independence Day- Grenada</p> <p>Lecture 3</p> <p>The equine foot and fetlock: Projections, technique, radiological anatomy, variations, labeling.</p>	<p>Lecture 3 on MyCourses/ Resources</p> <p>Lab 3 power point pdf questions on My Courses/resources</p> <p>Self study questions for Lab 3 on MyCourses/ Resources</p> <p>Key for Lab 3 questions on MyCourses/ Resources</p> <p>Key for Lab 3 self study questions on MyCourses/ Resources</p> <p>Panopto recording of the lab 3 answer key</p>	<p>During the week: February 8</p> <ol style="list-style-type: none"> 1. ZOOM Q and A/ OFFICE HOURS 4:00pm Friday 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 <p>On Friday check answer keys to the Lab 3 questions and the self study questions.</p> <p>On Friday listen to the Panopto recording of the lab answer key</p>	<p>Lecture:1 Lab:2</p>

<p>Week 5</p> <p>During the week: February 15</p> <p>Review week for quiz</p>	<p>Review lectures 1 and 2 Labs 1 and 2</p>	<p>During the week: February 15</p> <p>ZOOM office hours/Q and A 4:00pm Monday Dr Hanson (optional)</p> <p>REVIEW ALL CONTENT RELATING TO LECTURES 1 and 2 AND LABS 1 and 2</p>	
<p>Week 6</p> <p>During the week of February 22</p>	<p>QUIZ</p>	<p>ZOOM office hours/Q and A 4:00pm Monday Dr Hanson (optional)</p> <p>Quiz week of February 10 questions/ 5 points</p>	

<p>Week 7 During the week: March 1</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: March 1</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 4:00pm 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>Lecture:1 Lab:2</p>
<p>Week 8 Week of March 8</p> <p>Week 9 Week of March 15</p>	<p>MIDTERM WEEK</p>		
<p>Week 10 During the week of March 22</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 March 22</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 4:00pm 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>Lecture:1 Lab:2</p>

		On Friday review answer key to lab5 self study questios	
<p>Week 11</p> <p>During the week of March 29</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 March 29</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 4:00pm 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>	Lecture:1 Lab:2
<p>Week 12</p> <p>During the week of April 5 (Mon Apr 5 is Easter Monday)</p> <p>Lecture 7 Avian Radiology</p> <p>Practical aspects of avian radiography</p>	<p>Lecture 7 On MyCourses/ Resources</p> <p>Answer key to Lab 7 powerpoint questions</p>	<p>During the week of March 29</p> <ol style="list-style-type: none"> 1. ZOOM office hours/Q and A 4:00pm Friday Dr Hanson (optional) 2. Review Lecture 7 Powerpoint pdf 3. listen to the Panopto recording of Lecture 7 	Lecture: 1

including positioning and the standard projections and radiation safety issues. Identify the normal radiographic anatomy of the avian species.			
Weeks 13-15 April 12- May2 Review weeks	Prepare for Final exam:	During the week of November 2nd - 23rd 1. ZOOM office hours/Q & A 4:00pm Monday Dr Hanson (optional) 1. Review all course material for Lectures 3, 4, 5,6,7 and 2. Review all labs 3, 4, 5,6, 3. Review Lab keys for 3,4,5,6 the self -study questions keys 4. Review all panopto recordings of labs 3,4,5, 6	
Week 17 May 12th 12:00 – 1:00 pm Final exam	Final exam 40 questions/ 40 points	Week of December 7th course content of Lectures 3, 4, 5, 6 and 7 Labs 3,4,5 and 6 Self-study questions	Total: Lecture: 7 Labs: 12

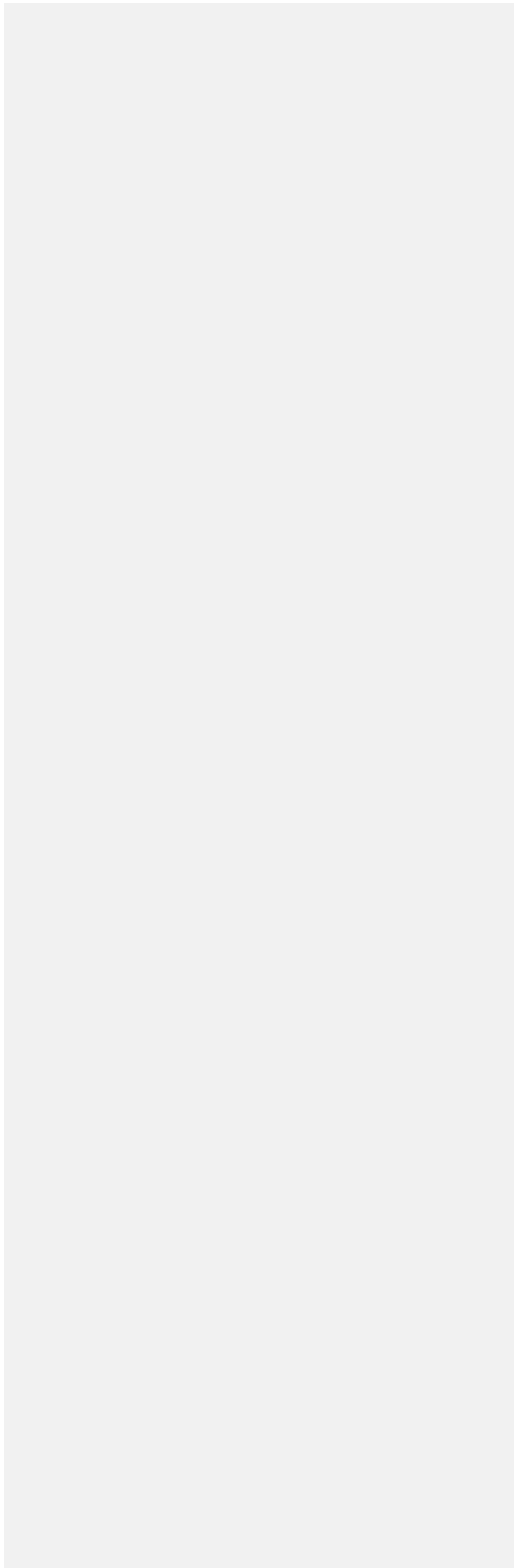
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Assessment Summary:

Point Allocation:	
Total points = 45	
One quiz =5 questions	
Final exam=40 questions	
<i>Total points breakdown:</i>	
Quiz: 5	

Final exam: 40

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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~~ **Spring 2021**

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Course Director

Thomas Hanson, -DVM, -MS

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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

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↳ Visiting Professor

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Hester McAllister, MVB, DVR, DipECVDI

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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

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/ 2021-01-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.

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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. **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.

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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 horses and bovines to image the body systems	PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.

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including axial and appendicular skeleton, skull, thorax and abdomen.	<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>
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>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>
Recognise and correctly interpret radiological signs associated with commonly recognized pathology of the abdominal parenchymal organs detected by abdominal ultrasound.	<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>
Appraise the normal heart and great vessels and the common abnormalities/ pathologies thereof on both radiographs and echocardiograms.	<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</p>

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	<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>
Explain the basic principles of image formation in radiology, ultrasound, CT, MRI and Scintigraphy.	<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>
Recognise the best use of advanced diagnostic imaging modalities (CT, MRI, Scintigraphy) and in which cases to recommend what modality.	<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>
List the commonly used types of contrast media used in diagnostic imaging, the method of administration the most common types of studies	<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</p>

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performed and the risks and contraindications of their use.	<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>
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>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>
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>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</p>

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	<p>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

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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 <u>Spring 2021</u>	Number of MCQs	Maximum points	Lecture content	Lab content
Midterm Examsoft	October <u>March 8th</u> 12-1.30pm	69	69	Lectures 1 - 17	Labs 1+2+3
Quiz On MyCourses	Week of October 26th <u>March 29</u>	14	14	Lectures 18- 22	Lab 4
Final exam Examsoft	December 7th <u>May 10</u> 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.

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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 2021-01-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.

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XVII. Attendance policy

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

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

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

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

Lecture or Zoom session attendance policy:

Laboratory session attendance policy:

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.

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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.

IX. 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 [Thomas Hanson](mailto:Thomas3@sgu.edu) at Thomas3@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.

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 ~~Thomas~~ Hanson at ~~on~~ Thomas3@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

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score of “0” points for the examination.

X. 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 (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 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.

XI. 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 513 Fall Spring 2021 and LLOs

Lecture No Lecturer	Week and date	Lecture content/ aim	Lecture Learning Outcomes
1 HMCA	Week 1 Jan 18-24 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 Jan 18-24 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 Jan 18-24	Radiology of the diaphragm and ribs	Acquire the basic concepts of the radiology and disorders of the diaphragm and ribs.
4 HMCA	Week 2 Aug 24 to 30th Jan 25-31	Small animal pulmonary disease (lung patterns, pattern recognition for the evaluation of inflammatory, cardiac, allergic, parasitic and neoplastic disorders)	To learn the classic features of pulmonary patterns and their typical distribution in various diseases.
5 HMCA	Week 2 Jan 25-31 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 Jan 25-31 Aug 24 to 30th	Small animal cardiac radiology and ultrasonography 1: (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 Feb 1-7	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.

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8 HMCA	Week 3 <u>Feb 1-7Aug</u> <u>31—Sep 6th</u>	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 <u>Feb 1-7Aug</u> <u>31—Sep 6th</u>	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 <u>Sep 7—</u> <u>13thFeb 8-14</u>	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 <u>Feb 8-14Sep 7</u> <u>—13th</u>	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 RHAPT H	Week 4 <u>Feb 8-14Sep 7</u> <u>—13th</u>	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. <u>Apply radiological principles when assessing kidneys.</u>
13 THRHA P	Week 5 <u>Sep 14—</u> <u>20thFeb 15-21</u>	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 THRHA P	Week 5 <u>Feb 15-21Sep</u> <u>14—20th</u>	Small animal abdomen 6: Ultrasound of the urinary bladder, Diagnostic imaging of the urethra, female and male urogenital apparatus	Recognise and interpret normal and abnormal sonographic appearance of the urinary bladder. Explain the imaging techniques, their advantages and dis-advantages. Explain and assess diagnostic imaging of the normal and abnormal female and male urogenital apparatus including the urethra, ovaries, uterus, vagina, prostate and testicles. <u>Assess normal and abnormal pregnancy in cats and dogs.</u>
15 THRHA P	Week 6 <u>Feb 22-28Sep</u> <u>21—27th</u>	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 THRHA P	Week 6 <u>Feb 22-28Sep</u> <u>21—27th</u>	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 THRHA P	-Week 6 <u>Feb 22-28Sep</u> <u>21—27th</u>	Small animal skeleton 3: Radiology of bone: Fractures and fracture healing, normal and abnormal fracture healing, complications of fracture	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.

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		healing and asynchronous bone growth	
18 THRHA P	Week 7 Sep28—Oet 4th Mar 1-7	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 2020Spring 2021 : Week 8:Thursday March 11,October 8th 12-1.30pm			
Lectures 1 to 17 and including Labs 1, 2 and 3; Midterm exam points: 69 / 138			
19 THRHA P	Week 9 Oet 12th-18th Mar 15-21	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 THRHA P	Week 9 Mar 15-21 Oet 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-arthritis/ degenerative joint disease; developmental joint disease: OC/ OCD, elbow dysplasia, hip dysplasia; patella luxation, immune mediated joint disease, polyarthropathies.
21 HMcA	Week 10 Oet 19th-24th Mar 22-28	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)	Explain how and be able to recognise equine foot projections and radiological technique with particular consideration of personnel safety. Be able to identify/ recognise common radiological abnormalities of the distal phalanx, navicular bone and phalanges.
22 HMcA	Week 10 Mar 22-28 Oet 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 Oet 26thMarch 29th-Submission by November 1stApril 4 Lectures 18 to 22 (5 lectures) ; Lab 4 Quiz points: 14 / 14 points			

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23 HMCA	Week 11 Oct26—Nov 1st Mar 29- Apr 4	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 Mar 29-Apr 4 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 Apr 5-Apr 11	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
THRHA P	Week 12 Apr 5-Apr 11 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.
THRHA P	Week 12 Apr 5-Apr 11 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
THRHA P	Week 13 Nov 9th- 13th Apr 12- 18	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
THRHA P	Week 13 Apr 12-18 Nov 9th-13th	Diagnostic Imaging of the canine and feline skull; 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.	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.
THRHA P	Week 13 Apr 12-18 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.

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31 <u>THRHA</u> P	Week 14 Nov 16th-20th <u>Apr 19-25</u>	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 <u>THRHA</u> P	Week 14 <u>Apr 19-25</u> 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 <u>THRHA</u> P	Week 15 <u>Apr 19-25</u> 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
Monday, December 7 May 10th 12-1.30pm SAMS 513 Final Exam Fall-Spring 2021 Lectures 22 to 33 (12 lectures) , Labs 5 and 6 Total final exam points : 55 / 138			

Lab Schedule SAMS 513 ~~Fall 2020~~ Spring 2021 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

<u>DATE/TIME</u>	<u>Lab No., Content</u>	<u>Lab Learning Objectives</u>	<u>Instructor</u>
<u>Week 3</u> <u>Monday Feb. 1</u> <u>Lab 1</u> <u>Zoom- optional</u>	<u>Lab 1</u> <u>Thorax: Pleura,</u> <u>Mediastinum</u> <u>Diaphragm, Ribs</u>	<u>Revise normal thoracic radiological anatomy and interpretational pitfalls.</u> <u>Identify and interpret the common radiological conditions of the thoracic cavity of small animals including the pleura and mediastinum</u>	<u>HM</u>
<u>Week 4 Lab 2</u> <u>Monday Feb. 8</u> <u>Lab 2</u> <u>Zoom (optional)</u>	<u>Lab 2</u> <u>Thorax:</u> <u>Pulmonary disease,</u> <u>Lung patterns,</u> <u>Cardiac radiology and</u> <u>ultrasound</u>	<u>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.</u> <u>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.</u>	<u>HM</u>
<u>Week 6</u> <u>Monday Feb. 22</u> <u>Lab 3</u> <u>Zoom (optional)</u>	<u>Lab 3</u> <u>Abdomen</u>	<u>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.</u>	<u>HM/TH</u>
<u>Week 10</u> <u>Monday Mar 22</u> <u>Lab 4</u> <u>Zoom (optional)</u>	<u>Lab 4</u> <u>Bones</u> <u>Aggr vs non-aggr</u> <u>Fractures,</u> <u>Developmental skeletal</u> <u>lesions, joints</u>	<u>Identify and interpret the common radiological appearance of developmental skeletal and joint conditions in small animals using case examples with instructor discussions</u> <u>Identify and differentiate aggressive vs non-aggressive bone lesions. Identify, characterize and classify case examples of fractures and assess fracture healing.</u> <u>Practice review of case examples with question and answer discussions with instructors.</u>	<u>TH</u>
<u>Week 13</u> <u>Monday Apr. 2</u> <u>Lab 5</u> <u>Zoom (optional)</u>	<u>Lab 5</u> <u>Equine radiology</u> <u>Limbs and Skull</u>	<u>Identify and interpret the common radiological conditions of the appendicular skeleton of the horse</u> <u>Identify and interpret the common radiological conditions of the equine skull.</u> <u>Practice review of case examples with question and answer discussions with instructors</u>	<u>TH</u>

<p><u>Week 15</u> <u>Monday Apr. 26</u></p> <p><u>Lab 6</u> <u>Zoom (optional)</u></p>	<p><u>Lab 6</u> <u>CT, MRI Endocrine</u> <u>Vertebral column</u> <u>Myelography</u> <u>Skull</u></p>	<p><u>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.</u></p>	<p><u>TH</u></p>
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Group A=Surnames A - L Group B Surnames M - W. Group List at end of this Syllabus

DATE	TIME	Lab No; Content	Lab Learning Outcomes	Instructor
Week 2		Lab 1	Revise normal thoracic radiological anatomy and interpretational pitfalls.	

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		Thorax: Pleura, Mediastinum Diaphragm, Ribs	Identify and interpret the common radiological conditions of the thoracic cavity of small animals including the pleura and mediastinum	
Week 3 Lab 1 Zoom (optional)	Monday Aug 31st 10:30 am			HMeA
Monday August 31st	Monday August 31st 10:30 am			RHAP
		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.	
Week 4 Lab 2 Zoom (optional)	Monday Sept 7th 10:30 am			RHAP
Monday September 7th	Monday Sept 7th 10:30 am			HMeA
		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.	
Week 6 Lab 3 Zoom (optional)	Monday Sept 21st 10:30 am			HMeA
Monday September 21st	Monday Sept 21st 10:30 am			RHAP
		Lab 4 Bones Aggr vs non-aggr Fractures, Developmental skeletal lesions, Joints	Identify and interpret the common radiological appearance of developmental skeletal and joint conditions in small animals using case examples with instructor discussions 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.	
Week 10 Lab 4 Zoom (optional)	Monday Oct 19th 10:30 am			RHAP
Monday October 19th	Monday Oct 19th 10:30 am			HMA

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Week 13 Lab 5 Zoom (optional)	Monday Nov 9 th 10:30 am	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	HMA
Monday November 9 th	Monday Nov 9 th 10:30 am			RHAP
Week 15 Lab 6 Zoom (optional)	Monday Nov 23 rd 10:30 am	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.	RHAP
Monday November 23 rd	Monday Nov 23 rd 10:30 am			HMA

SVM Course Code: SAMS 513

Course Director: Dr. ~~Thomas~~ Hanson

Fall 2020/Spring 2021 Online Course Working/Study schedule

Week number and date	Course Content:	Weekly Learning Schedule:	<u>Office Hours:5</u>	<u>Assessment Schedule Hours:</u>
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<p>Week 1 August 17th- August 21st<u>January</u> <u>18</u></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 Jan. 18</p> <p>10.30 amNoon -entire whole class RH and HMAHMA & TH</p>	<p><u>Lecture:</u> 3N/A</p>
<p>Week 2 August 24th- August 29th<u>January</u> <u>25</u></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</p>	<p>1. Lecture 4: Read lecture notes, Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 5: Read lecture notes</p>		<p><u>Lecture:</u> 3N/A</p>

<p>Week 2 continued January 25 January 25 January 25</p>	<p>Principles of ultrasound (artefacts and practical issues)</p> <p>Lecture 6 Small animal cardiac radiology and ultrasonography1: (normal cardiac radiology and echocardiography).</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>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>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 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>		
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<p>Week 3 August 31st- September 4thFebruary <u>1</u></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 ultrasonography 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>1.- ZOOM office hours/Q & A on Lab 1 Monday Aug 31st 10.30am (optional)</p> <p>2.1. Lecture 7: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3.2. Lecture 8: Read lecture notes Review Lecture pdf Listen to Panopto</p>	<p>ZOOM office hours/Q & A on Lab 1 Monday Feb 1, Noon (optional) HMA - A RHAP - B</p>	<p>Lecture: 3N/A Lab: 2</p>
<p>Week 3 continued August 31st- September 4thFebruary <u>1</u></p>	<p>Lecture notes supplied in MyCourses/Resources for Lectures 7,8 and 9</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 1: Thorax: Pleura,</p>	<p>4.3. Lecture 9: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>5.4. Work through the lab questions: Lab 2: Work through questions once you have worked through the relevant lectures 1-8</p>		

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	<p><u>Mediastinum</u> <u>Diaphragm, Ribs</u></p> <p>Lab <u>1</u> Questions will be supplied as Powerpoint pdf on MyCourses/Resources</p> <p>Term 1 material is supplied in MyCourses/Resources in folder <i>SAMS501 Lectures</i></p>	<p>6.5. Check the answers to lab 2 on Friday</p> <p>7.6. 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 February 8 (Mon. Feb 8, Independence Day in Grenada)</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 ultrasonography of the kidneys</p> <p>Lecture notes supplied in MyCourses/Resources for Lectures 10,11 and 12</p> <p>Lecture Powerpoint pdfs and lecture notes to go</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</p>	<p>ZOOM office hours/Q & A on lab 2 Monday Feb 8, Noon (will re-schedule)</p> <p>RHAP-A HMA-B</p>	<p><u>Lecture:</u> 3N/A <u>Lab: 2</u></p>

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<p>Week 4 continued <u>February 8</u> <u>February 8</u> <u>February 8</u></p>	<p>with lectures 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 Lab2: Thorax: Pulmonary disease, Lung patterns,</p> <p>Cardiac radiology and ultrasound</p> <p>Lab 2 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>Review Lecture pdf Listen to Panopto</p> <p>4. Work through the lab questions: Lab 3 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 <u>February 15</u></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</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><u>Lecture:</u> <u>2N/A</u></p>

<p>Week 5 continued February 15 February 15 February 15 y 15</p>	<p>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>Term 1 material is supplied in MyCourses/Resources in folder <i>SAMS501 Lectures</i></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>		
<p>Week 6 September 21st-25th February 22</p>	<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:</p>	<p>ZOOM office hours/Q and A on Lab 3 10.30am on Monday Sept 21st (optional)</p> <p>1. Lecture 15: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 16: Read lecture notes</p>	<p>ZOOM office hours/ Q and A on Lab 3 Monday Feb 22, Noon (optional)HM AA RHAP B</p>	<p><u>Lecture: 3N/A</u> <u>Lab: 2</u></p>

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	<p>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><u>Radiology Lab 3: Abdomen</u> <u>Lab 3 questions supplied as Powerpoint pdf in My Courses/Resources</u></p> <p>Term 1 material is supplied in MyCourses/ Resources in folder <i>SAMS501 Lectures</i></p>	<p>Review Lecture pdf Listen to Panopto</p> <p>3. Lecture17: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>4. Revision: Revise Term 1 Lectures on the normal hindlimb, pelvis and forelimb,</p>		
<p>Week 7 September 29th - October 2nd March 1</p>	<p>Small animal Skeleton</p> <p>Lectures: Lecture 18: SA skeleton 4: Congenital and Developmental Disorders of the immature skeleton</p>	<p>1. Lecture 18: Read lecture notes Review Lecture pdf Listen to Panopto</p>		<p>N/ALecture :1</p>

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	<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>Review lectures 1-17 and Labs 1, 2 and 3 for midterm exam on March 8</p>		
<p>Week 8 October 5th-9th <u>March 8</u></p> <p>Thursday October <u>8th March 11</u> MIDTERM EXAM 12-1.30pm</p>	<p>Lectures 1- 17 and Labs 1,2 and 3</p> <p>Midterm exam on Thursday October <u>8th March 11</u> 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 <u>March 15</u></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>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</p>		<u>Lecture: 2N/A</u>

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<p>Week 9 continued March 15 March 15</p>	<p>Lecture notes supplied in MyCourses/Resources for Lectures 19 and 20 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>Questions in ppt pdf in My courses / Resoucerces</p>	<p>questions of Lab 4</p> <p>4. see below</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 March 22</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:</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:</p>	<p>ZOOM Q and A/office hours on Lab 4 Monday March 22, Noon (optional) RHAP-A HMA-B</p>	<p>Lecture: 2N/A Lab: 2</p>

<p>Week 10 continued March 22 March 22</p>	<p>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>Lectures via Panopto: 21 and 22 supplied on MyCourses/Panopto (online videos)</p> <p>Radiology Lab 4: Bones <u>Aggr vs non-aggr Fractures, Developmental skeletal lesions, joints</u> Lab 4 <u>questions supplied as Powerpoint pdf in My Courses/Resources</u></p> <p>Term 2 (Equine radiography and radiology) material is supplied in MyCourses/Resources in folder: <i>SAMS 502 Lectures</i></p>	<p>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>WEEK 11 QUIZ open from Oct 26th to Nov 1st March 29- April 2</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>Quiz will be available for 1 week via My courses <i>Tests & Quizzes</i></p>	<p>Quiz</p>

		Lecture and Lab course continues; see below	14 questions= 14 points	
<p>Week 11 Oct 26 to Nov 1st March 29</p>	<p><u>Lecture 23</u> 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>	<p>1. Lecture 23: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>2. Lecture 24: Read lecture notes Review Lecture pdf Listen to Panopto</p> <p>3. Revise SAMS 502 ppt</p> <p>4. Lab 5: Work through the equine limbs questions</p>		<p><u>Lecture:</u> 2N/A</p>
<p>Week 11 continued Oct 26 to Nov 1st 1stMarch 29</p>	<p>Term 2 (Equine radiography and radiology) material is supplied in MyCourses/</p>			

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	Resources in folder: <i>SAMS 502 Lectures</i>			
<p>Week 12 Nov 2nd to <u>8th April 5</u></p> <p><u>(Note: Mon</u> <u>April 5 is</u> <u>Easter</u> <u>Monday)</u></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 		<p>Lecture:3M/ A</p>

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		(Term5 Lecture5) 8. List questions for Q&A/office hours zoom session on Monday Nov 9 th		
Week 13 November 9th to 13th April 12	Lecture 28: Principles of CT, MRI and Nuclear medicine	ZOOM Q and A/office hours at 10.30am Lab 5 on Monday 9th (optional)	ZOOM Q and A/office hours at Monday April 12, Noon (optional)	<u>Lecture:</u> 3N/A <u>Lab: 2</u>
Week 13 continued November 9th to 13th	Lecture 29: Diagnostic Imaging of the canine and feline skull; 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.	1. Lecture 28 : Read lecture notes Review Lecture pdf Listen to Panopto	HMA-A RHAP-B	
<u>Week 13</u> <u>continued</u> <u>April 12</u>	Lecture 30: Radiology of the small animal vertebral column, anatomical variants, anomalies acquired diseases	2. Revise Term 1 Lecture on the SA skull		
	Lecture notes supplied on MyCourses/ Resources	3. Revise term 1 lecture on SA vertebral column		
	Lecture Powerpoint pdfs supplied on MyCourses/ Resources	4. Lecture 30: Read lecture notes Review Lecture pdf Listen to Panopto		
	Lectures 28-30 Panopto recordings supplied on	5. Lab 6: Work through the questions and		

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	MyCourses/Panopto (online videos) Lab 5: Equine radiology Limbs and Skull <u>Lab 5 questions supplied as Powerpoint pdf in My Courses/Resources</u>	write down your answers		
Week 14 November 16th to 20th April 19	Lecture 31: Small animal Myelography -Normal and most common abnormal patterns. CT and MRI of the vertebral column; case examples Lecture 32: DI of the Endocrine organs in cats and dogs Lecture 31 and 32: Lecture notes and Lectures as Powerpoint pdfs in MyCourses/Resources and via Panopto in MyCourses/ Panopto	1. Lecture 31: Read lecture notes Review lecture pdf Listen to Panopto 2. Lecture 32 Read lecture notes Review Lecture pdf Listen to Panopto 3. Lab 6: Work through Lab questions		<u>Lecture:</u> <u>2N/A</u>
Week 14 continued November 16th to 20th April 19	Lab 6: SA spine and skull: Questions supplied as Powerpoint pdf on MyCourses/Resources Answers Lab 6 questions supplied in My	4. Lab 6: Compare with the answer key on Friday 5. List questions for Q&A zoom		

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	Courses/Resources on Friday	session on Monday Nov 23 rd		
Week 15 Nov 23rd to 27th <u>April 26</u>	<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><u>Radiology Lab 6: CT, MRI Endocrine Vertebral column Myelography Skull</u></p> <p><u>Lab 6 questions supplied as Powerpoint pdf in My Courses/Resources</u></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>	<p><u>ZOOM Q and A/office hours on Lab 6 Monday April 26, Noon (optional)</u></p> <p><u>RHAP A</u></p> <p><u>HMA B</u></p>	<p><u>Lecture: 1N/A</u></p> <p><u>Lab:2</u></p>
Week 16 Nov 30th- Dec 4th <u>May 3</u>	<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) Monday May 3, Noon</p> <p>Review for final exam:</p> <p>- Lectures 23 to 33</p> <p>- Labs 5 and 6</p>	HMA A RHAP B	<u>N/A</u>

Week 17 December 7th to 11th	Final exam: 55 questions Monday December 7th May 10 12-1.30pm ExamSoft			<u>Total:FINAL</u> <u>Lecture: 33</u> <u>Lab: 12</u>
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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

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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	-Ogden, Camille
-Compta, Jacqueline	-Pensabene, Alexa
-Coppola, Maria	-Popp, Lindsay
-Cragolin, Cody	-Powers, Tara
	-Pratt, Margaret

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<ul style="list-style-type: none"> -Embleton, Haley -Faletti, Tasha -Fearon, Jasmyn -Fleming, Caitlin -Foster, Erica -Frangiosa, Alexandra -Giacomelli, Gina -Godau, Annelise -Goode-Molinaro, Cara -Gore, Kyra -Grenager, Katelyn -Grogg, Kelly -Hammett, Jared -Henriques, Natalie -Hines, Sharymarie -Holl, William -Hovan, Brittany -Johnson, Genevieve -Kelley, Kristina -Kendrot, Adam -Kenly, Abigail -Knott, Patricia -Kurgan, Cullen -Lee, Lianne -Leisz, Collin -Lipari, Vittoria -Loveday, Montana 	<ul style="list-style-type: none"> -Ramos, Kelly -Remillard, Jaimie -Reuter, Jessica -Richards, Alyssa -Ritz, Anna -Rodier, Jaren -Schuchman, Emily -Setzer, Haley -Sheppard, Steven -Shulse, Taylor -Solomon, Jessica -Southerland, Paula -Stensland, Erin -Sweetman, Nakia -Tarpley, Micha -Todorovic, Sofija -Valente, Olivia -Viglietta, Brianna -Wang, Yu -Wilhelm, Cara -Williams, Katherine -Willis, Olivia -Wisti, Amanda -Wolfinbarger, Alexandra -Worley, Erin
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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

INTRODUCTION TO SURGICAL SKILLS SYLLABUS (1 credit)

SAMS 514 (Term 4)

SPRING 2021

I. Course Faculty and Staff Information

Course Director: Keith Kalasi, DVM, Instructor

Email: kkalasi@sgu.edu

Instructors: Marta Lanza Perea, DVM, MRCVS, MSc, Associate Professor

Email: mperea@sgu.edu

Emily Turitto, DVM, Assistant Professor

Email: eturitt1@sgu.edu

Visiting Professors: tbc

Office Hours: Mondays noon to 1pm AST (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 and include:

SAMS514 Suture Pattern Guide

Lecture pdfs & recordings

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. 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 Learning Outcomes

See Appendix 1.

X. Lesson Learning Outcomes

Appendix 2.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

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). Two surgical skills assessments will be assigned during the term in the form of self-recorded skills videos. Any skill that is scored <70% is deemed to be 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 and surgical concepts 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 assignments	10%
Surgical skills assessments	60%
Final written examination	<u>30%</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 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 (kcalasi@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 Learning 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 cannot be met. 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

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.

XVII. Attendance/Participation Policy

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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) 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.

Appendices

Appendix 1. Course Learning Outcomes (CLOs)

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. Lesson Learning Outcomes (LLOs)

Lecture/Surgical Skills Learning Outcomes
LECTURE: Surgical Preparation
Explain the difference between sterilization, disinfection & antisepsis
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
Discuss cold sterilization and list the appropriate chemical agents used for this method of sterilization
Explain the difference between antiseptic & disinfectant
Cite the spectrum of activity for the following antiseptics: povidone iodine, chlorhexidine, hydrogen peroxide, alcohol-based combination antiseptic preparations
Define asepsis
Describe the various procedures used in aseptic technique performed by the surgical team
Describe the ways to decrease a surgical patient risk for SSI
Cite Halsted's surgical principles
Describe the steps taken by the surgical team when preparing a patient for surgery
Describe the procedures for surgical site preparation
Describe the proper technique for quarter drape application
List the surgical apparel worn by the surgical team and describe their function
Describe the following processes involved with pre-surgical preparation of the surgeon: aseptic hand scrub, application of surgical gown, open & closed gloving techniques
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
Classify the suture materials above based on the following characteristics: absorbable versus non-absorbable, strand type (mono- versus multifilament), origin of fibers
Discuss the inherent characteristics of suture material: size, flexibility, memory, surface friction, knot security, tensile strength & tissue reactivity
Describe the systems of suture material sizing
Discuss the purpose of suture material coatings and cite the benefits of triclosan
Explain the difference in the process of absorption between natural and synthetic suture materials
Discuss the factors to consider when selecting a suture material for a given procedure
List the potential complications of suturing
Discuss the biomaterial alternatives to suture & list their applications: tissue adhesive, surgical staples & hemoclips
Identify the parts of a surgical needle
Discuss the factors to be considered when selecting a surgical needle
List the various types of surgical needle point and pair these with the appropriate tissue

LECTURE: Wounds
Describe the different types of wounds
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
Discuss the degrees of contamination and how it relates to the relative risk of surgical infection; give examples of each
Explain the degrees of contamination as it relates to traumatic wounds
Describe methods used for initial management of a traumatic wound: wound cleansing, lavage/irrigation and wound debridement
Cite the applications of various topical medications commonly used in wound management [including spectrum of activity (where applicable) and effect on wound healing]
List the types of wound healing and their associated types of surgical closure (where applicable)
Discuss important aspects of managing degloving wounds
List the benefits of honey/sugar in wound healing
List the functions of drains and indications for their use
Compare the Penrose & Jackson-Pratt drains
Discuss the key principles of drain placement
LECTURE: Principles of bandaging
List the functions of bandages
Cite the three layers of a bandage and their function(s)
Differentiate between adherent & non-adherent dressings and discuss the applications for each type of dressing
Discuss the basic principles of bandage application
Describe how to apply the following types of bandages and list their function(s): Robert Jones, modified Robert Jones (+/- reinforcement), Spica splint, cast
Describe how to apply the following types of orthopedic slings and list their function(s): Velpeau, Ehmer
List the potential complications of a bandage
LECTURE: Surgical instrumentation & techniques
Identify, name & describe the function of the basic surgical instruments
Demonstrate the proper handling of these instruments
List the parts of a ringed instrument
Describe the different methods of making incisions and their applications
Explain the difference between blunt and sharp dissection
SURGICAL SKILLS: Knots & hand ties
Perform a square knot & surgeons knot using the 2-hand tie technique
Perform a square knot & surgeons knot using the 1-hand tie technique
SURGICAL SKILLS: Skin suture patterns - Interrupted patterns
Perform a square knot & surgeons knot using an instrument tie

Demonstrate proficiency in the following interrupted suture patterns & state when each would be appropriately used: simple interrupted, cruciate, vertical mattress, interrupted horizontal mattress, Surgeon's stitch
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
Demonstrate proficiency in the following continuous suture patterns & state when each would be appropriately used: Simple continuous, Ford interlocking, Continuous horizontal mattress
SURGICAL SKILLS: Ligatures & 3-clamp technique
Demonstrate proficiency in the following ligatures: Circumferential, transfixing, modified Miller's knot, strangle knot
Demonstrate proficiency in the 3-clamp technique for pedicle ligation
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
Demonstrate proficiency in performing a Finger trap

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

Week	Date	Lecture	Surgical Skills	Due dates	Hours
1	Jan 18-24	Surgical Prep	Knots & hand ties		1.5
2	Jan 25-31		Interrupted skin patterns		0.5
3	Feb 1-7	Suture material & surgical needles	Intradermal		1.5
4	Feb 8-14	Homework #1 [Due: Sun Feb 14]			1
5	Feb 15-21	Bandaging	Continuous skin patterns		1.5
6	Feb 22-28	Skills assessment #1 [Due: Sun Feb 28]			1
7	March 1-7				
8	March 8-14	MID-TERM WEEK			
9	March 15-21		3-clamp technique & ligatures		0.5
10	March 22-28	Surgical instruments	Homework #2 [Due: Sun March 28]		2
11	March 29-April 4		Hollow organ patterns & Finger trap		0.5
12	April 5-11	Wounds			1
13	April 12-18	Skills assessment #2 [Due: Sun April 18]			1
16	Thursday May 6	FINAL EXAM (Examsoft)			1

*** Zoom office hours:**

Mondays noon-1pm AST → for live assistance with surgical skills

Monday January 18 Office Hours → Course intro & meet the instructors

*** Lectures:** Live via Zoom on select Tuesdays @ 1pm AST, EXCEPT (all lectures to be recorded).

*** EXCEPT LECTURE ON TUESDAY FEB 16TH: Live via Zoom @ NOON AST**



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

SMALL ANIMAL MEDICINE AND SURGERY DEPARTMENT

PHYSICAL DIAGNOSIS I (1 credit)

SAMS 515 TERM 2

SPRING 2021

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

Jill Narak DVM, MS. DACVIM (Neurology)

Tara Paterson DVM MSc, Associate Professor; tpaterson@sgu.edu

Lucian Peters DVM MSc, Assistant Professor; lpeters2@sgu.edu

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. Current Term 2 SGU SVM student

b. Completion of Term 1 Small Animal related courses

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. Laptop or computer with functional camera, microphone and internet connection
- d. It is NOT recommended to study from videos outside of the SAMS 515 SAKAI site

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/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 Learning 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 Learning Outcomes

Lecture /lab	Lecture/Lab Learning Outcome	Course Learning Objective
Physical exam, Handling and restraint	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 Observe application of a gauze and a commercial muzzle Observe proper technique in lifting small animal patients from floor to examination table and back to floor Observe a complete general physical examination, including distant and near examinations Practice proper use of physical examination form Understand temperature measurement techniques for dog or cat Identify signs of dehydration in small animal patient	1,2
Ophthalmology examination	Observe physical examination of the eye Discuss clinical signs of ocular disease Evaluate ocular structures and adnexa for abnormalities, including eyelashes, conjunctiva, nictitating membrane, cornea, anterior chamber, iris, pupil	1

	<p>Evaluate cranial nerve function by examining cranial nerve reflexes and responses, including palpebral, and pupillary light reflex, and menace response</p> <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>	1

	<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> <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	Identify and institute appropriate medical record keeping skills	3
Clinical Reasoning Skills	Observe clinical reasoning to basic veterinary cases	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>	6

	Observe technique of injecting medications	
Literature review assignment	Perform literature review corresponding to course topic	5
Behavior	Understand basic dog and cat behavior and management techniques within the clinical setting	7

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	SGUSVM Program Learning Outcome
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

Appended as a table at the end of the syllabus

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 (80% on OSCE is required for advancement to term 3)
 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. In case of concern contact me before the due date.

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. The importance of clinical skills in this course must be emphasized and recognized. If an unsatisfactory grade is achieved during the OSCE, the student will be required to repeat the OSCE before being permitted to advance, and will receive a grade of 'C' for the course. Failure to remediate an unsuccessful 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

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 strictly prohibited

XXI. Appendices

- a. **Course Schedule and Lecture Hour Equivalencies**

SAMS 515 Physical Diagnosis I Spring 2021

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	January 18-22 Review Lecture 1 pdf, watch associated Panopto Clinical Skills Instructional Videos	Ivaldi	Review Lecture 1 Proceed to take Quiz A 5 points Due Sunday January 24
Week 2	2: Clinical Reasoning	Synchronous Zoom Session	Wed January 27 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	February 1-5 Review Lecture 3 pdf, watch associated Panopto Clinical Skills Instructional Videos	Bain	Review Lecture 3 Proceed to take Quiz B 5 points Due Sunday February 7
Week 4	4: Gastrointestinal/Urogenital	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	February 8-12 Review Lecture 4 pdf, watch associated Panopto Clinical Skills Instructional Videos	Peters	Review Lecture 4 Proceed to take Quiz C 5 points Due Sunday February 14
Week 5	5: Cardio/Resp	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	February 15-19 Review Lecture 5 pdf, watch associated Panopto Clinical Skills Instructional Videos	Corrigan	Review Lecture 5 Proceed to take Quiz D 5 points Due Sunday February 21
Week 6	6: Ophthalmology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	February 22-26 Review Lecture 6 pdf, watch associated Panopto Clinical Skills Instructional Videos	Ivaldi	Review Lecture 6 Proceed to take Quiz E 5 points Due Sunday February 28
Week 7	7: Musculoskeletal	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	March 1-5 Review Lecture 7 pdf, watch associated Panopto Clinical Skills Instructional Videos	Guerrero	Review Lecture 7 Proceed to take Quiz F 5 points Due Sunday March 7
Week 8	NO LECTURE	MIDTERMS WEEK	March 8-12 MIDTERMS WEEK		MIDTERMS WEEK
Week 9	8: Neurology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	March 15-19 Review Lecture 8 pdf, watch associated Panopto Clinical Skills Instructional Videos	Narak	Review Lecture 8 Proceed to take Quiz G 5 points Due Sunday March 21
Week 10	9: Dermatology	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	March 22-26 Review Lecture 9 pdf, watch associated Panopto Clinical Skills Instructional Videos	Paterson	Review Lecture 9 Proceed to take Quiz H 5 points Due Sunday March 28
Week 11	10: Medical Records	Synchronous Zoom Session Lecture Powerpoint pdf on MyCourses/Resources	Wed March 31 12:30-2:30 AST/ Grenada Time	Ivaldi	Forum interaction mandatory
Week 12	11: Injection Guidelines	All Lectures and Lab Videos On Panopto Lecture Powerpoint pdf on MyCourses/Resources	April 5-9 Review Lecture 11 pdf, watch associated Panopto Clinical Skills Instructional Videos	Miccio	Review Lecture 11 Proceed to take Quiz I 5 points QUIZ Due Sunday April 11
	Assignment Due			Ivaldi	ASSIGNMENT Due Sunday April 11
Week 13	FINAL OSCE EXAMINATION	All skills are listed in the syllabus, on lab objectives sheets and associated instructional videos/resources	Wed April 14 Individual Synchronous Zoom session	Multiple	Exam Schedule will be emailed to you separately and placed on SAKA 11

Lecture topic	Lecture / Zoom	Instructional Videos	Assignment	Assessment
1: Course Intro, PE, Handling and Restraint	1 hour	10 minutes		8 minutes
2: Clinical Reasoning	1 hour			8 minutes
3: Behavior	1 hour			8 minutes
4: GI/UG	1 hour	15 minutes		8 minutes
5: Cardio/Resp	1 hour	3 minutes		8 minutes
6: Ophthalmology	1 hour	27 minutes		8 minutes
7: Musculoskeletal	1 hour	26 minutes		8 minutes
8: Neurology	1 hour	13 minutes		8 minutes
9: Dermatology	1 hour	7 minutes		8 minutes
10: Medical Records	1 hour			8 minutes
11: Injection Guidelines	1 hour	3 minutes		8 minutes
Homework Assignment			1 hour	
FINAL OSCE EXAMINATION				30 minutes
Total	11 hours	1.7 hours	1 hour	2 hours
Total Lecture Hour Equivalents	11	1	1	2



ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

Small Animal Medicine and Surgery

Small Animal Surgery SYLLABUS (5 credits)

SAMS 518 TERM 5

SPRING 2021

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. Zoom appointments available by request.

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

Emily Turitto, DVM.; Instructor; eturitt1@sgu.edu

VP's:

Dr. Peter Bedford, DVM, MRCVS, DECVO (Ophthalmology); prof1@btinternet.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, asynchronously, using Sakai tools Lessons, Panopto, Assignments, and Quizzes.

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. 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 3 quizzes worth 30 points each, 1 quiz worth 20 points and 1 final examination worth 30 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), is provided. If you do not 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.

This is a completely asynchronous course devised with your flexibility in mind. You may work ahead, and this is recommended. Quiz due dates are fixed, but if you fall ill, or have a justified absence, please submit excuses via the Dean of Students Office. Please note that only excuses validated by Dr. Bhaiyat will be accepted and he will notify the course director.

XIV. Recommended study strategies

-Prior to class, or after class, reading the corresponding chapters in the recommended textbooks

-Office hours and zoom consultation on demand, or channeled through the class reps.

-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

- Refer to the selected course surgery textbooks

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.

Students are expected to adhere strictly to the honor code. Quizzes will have feedback provided, and students are expected to keep this feedback and answers to the questions to themselves. If you share feedback or answers on Sakai 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.

Turn cell phones off while "attending" online 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 be available during the standard 8am-5pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 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 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.
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 - a. [A ExamSoft/ExamID quick guide for students](#)
 - b. [The ExamSoft student perspective video 30 mins](#)
 - 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:

NB: Even though each lecture is 50 minutes long, some lectures will be presented in a continued recorded mode in order to maintain the lecture objective. Nevertheless, there will be a timed separation in the video, thus allowing the student to stop before going over the 50-minute established period.

Week	Hours	Topics and materials covered	Scheduled activities	Time commitment
1	5	Small animal surgery: 1. Surgical approaches to the abdomen and incision closure 2. Exploratory celiotomy & biopsy techniques Male reproductive tract: 3. Castration dog 4. Castration cat 5. Prostate surgery	Read pdfs lectures 1-5 Listen to Panopto lectures 1-5	Panopto – 5 hours
2	5	Surgery of the digestive tract: 6. Gastric Surgery 7. Gastric and Pyloric Surgery 8. GDV, pathophysiology and diagnosis 9. GDV Gastropexy techniques 10. Esophageal surgery	Read pdfs lectures 6-10 Listen to Panopto lectures 6-10	Panopto – 5 hours
3	5	Surgery of the digestive tract: 11. Intestinal surgery, principles, intestinal obstruction.	Read pdfs lectures 11-15 Listen to Panopto lectures 11-15	Panopto – 5 hours

		<p>12. Intestinal surgery. Small bowel, linear foreign bodies, intussusception, mesenteric torsion</p> <p>13. Intestinal surgery. Enterotomy, resection and anastomosis</p> <p>14. Intestinal surgery. Cat megacolon</p> <p>15. Intestinal surgery. Large bowel. Neoplasia.</p>		
4	5	<p>Surgery of the urinary tract:</p> <p>16. Kidney surgery 17. Ureteral surgery 18. Bladder surgery 19. Urethra</p>	<p>Read pdfs lectures 16-19</p> <p>Listen to Panopto lectures 16-19</p> <p>Quiz A: lectures 1-15 due February 12 (30 points)</p>	<p>Panopto – 4 hours</p> <p>Quiz A - 45 minutes</p> <p>due</p> <p>February 12</p>
5	5	<p>Surgery of the urinary tract:</p> <p>20. Feline urethral surgery</p> <p>Reproductive tract (female)</p> <p>21. Spay, dog and cat</p> <p>Surgery of the Thorax:</p> <p>22. Surgical Approaches to the Thorax and Incision Closure.</p> <p>23. Thoracic surgery: PDA, Vascular ring anomalies (PRAA).</p> <p>24. Pneumothorax, thoracocentesis</p>	<p>Read pdfs lectures 20-24</p> <p>Listen to Panopto lectures 20-24</p>	<p>Panopto – 5 hours</p>

		techniques		
6	5	<p>Surgery of the Thorax (cont.):</p> <p>25. Pulmonary surgery</p> <p>Surgery of the Head and Neck:</p> <p>26. Upper Respiratory Tract. Brachycephalic Airway Syndrome</p> <p>27. Upper Respiratory Tract. Laryngeal paralysis</p> <p>28. Lower Respiratory Tract. Trachea</p> <p>29. Ear Surgery</p>	<p>Read pdfs lectures 25-29</p> <p>Listen to Panopto lectures 25-29</p>	Panopto – 5 hours
7	5	<p>Surgery of the Head and Neck (cont.):</p> <p>30. Salivary glands surgery</p> <p>Hernias:</p> <p>31. Abdominal hernias</p> <p>32. Diaphragmatic hernia</p> <p>33. Perineal hernia</p>	<p>Read pdfs lectures 30-33</p> <p>Listen to Panopto lectures 30-33</p> <p>Quiz B: lectures 16-30 due March 5 (30 points)</p>	<p>Panopto - 4 hours</p> <p>Quiz B - 45 minutes</p> <p>due March 5</p>
8		MIDTERMS WEEK		
9	5	<p>Other abdominal organs</p> <p>34. Spleen</p> <p>35. Pancreas</p> <p>36. Liver</p> <p>37. Portosystemic shunts</p> <p>Dentistry:</p> <p>38. Nomenclature,</p>	<p>Read pdfs lectures 34-38</p> <p>Listen to Panopto lectures 34-38</p>	Panopto 5 hours

		Anatomy, Periodontal Disease		
10	5	Dentistry (cont.): 39. COHAT/ATP, Radiography, Radiographic Interpretation 40. COHAT/ATP, Scale, Polish, Closed and Open Root Planning 41. Extraction: Indications 42. Extraction: Methods 43. Nerve Blocks. Dental prevention and maintenance,	Read pdfs lectures 39-43 Listen to Panopto lectures 39-43	Panopto – 5 lectures
11	5	Dentistry (cont.): 44. Oral Dental Conditions. Case examples. Ophthalmology: 45. Ophthalmology examination 46. Ocular Pharmacology and Therapeutics 47. Eyelid surgery. Third eyelid and conjunctiva 48. Orbit and globe. Lachrymal system	Read pdfs lectures 44- 48 Listen to Panopto lectures 44-48	Panopto – 5 hours
12	5	Ophthalmology (cont.): 49. Cornea and sclera 50. Lens and vitreous 51. Retina 52. Glaucoma, Neuro- Ophthalmology	Read pdfs lectures 49-52 Listen to Panopto lectures 49-52 Quiz C: lectures 31-44 due April 9 (30 points)	Panopto – 4 hours Quiz C - 45 minutes due April 9

13	5	<p>Orthopedics:</p> <p>53. Fracture biomechanics and classification- Bone healing- Bone infection</p> <p>54. Fractures - Conservative treatment</p> <p>55. Fractures- Pins and wires</p> <p>56. Fractures -External Skeletal Fixation</p> <p>57. Fractures- Plates and screws</p>	<p>Read pdfs lectures 53-57</p> <p>Listen to Panopto lectures 53-57</p>	<p>Panopto – 5 hours</p>
14	5	<p>Orthopedics (cont.):</p> <p>58. Fractures- Decision making</p> <p>59. Fractures- Complications</p> <p>60. Fractures in growing animals</p> <p>61. Articular fractures</p>	<p>Read pdfs lectures 58-61</p> <p>Listen to Panopto lectures 58-61</p> <p>Quiz D: lectures 45-52 due April 23 (20 points)</p>	<p>Panopto – 4 hours</p> <p>Quiz D - 30 minutes</p> <p>due April 23</p>
15	5	<p>Orthopedics (cont.):</p> <p>62. Osteomyelitis</p> <p>63. Bone diseases</p> <p>64. OCD</p> <p>65. Conditions of the Elbow</p> <p>66. Conditions of the Pelvis</p>	<p>Read pdfs lectures 62-66</p> <p>Listen to Panopto lectures 62-66</p>	<p>Panopto – 5 hours</p>
16	5	<p>Orthopedics (cont.):</p> <p>67. Conditions of the Hip</p> <p>68. Conditions of the Stifle</p> <p>69. Muscular and tendon disorders</p> <p>70. Mandibular and</p>	<p>Read pdfs lectures 67-71</p> <p>Listen to Panopto lectures 67-71</p> <p>Final examination: lectures 53-71 (Orthopedics) due May 7 (30 points) ExamSoft</p>	<p>Panopto – 5 hours</p> <p>FINAL due</p> <p>May 7</p>

		maxillary fractures 71. Spinal surgery	TBA	
17		FINALS WEEK		
18		May 21 – official end of term		Total points: 140

Assessment Summary:

Examination Blueprint

A total of 140 points will be awarded.

Point Allocation / Professor
Quiz A 30 points Brühl-Day
Quiz B 30 points Brühl-Day
Quiz C 30 points Brühl-Day, Lanza-Perea, Turitto, Ivaldi
Quiz D 20 points Bedford
FINAL 30 points Guerrero
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

<p>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</p>	<p>1, 2, 3, 4, 6, 7, 20, 23, 24, 25</p>
<p>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.</p>	<p>1, 3, 4, 6, 7, 20, 22, 23, 24, 25</p>
<p>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.</p>	<p>1, 7, 12, 13, 14, 16, 19, 20, 21, 22, 23, 24,25, 26, 27,</p>
<p>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</p>	<p>3, 4, 6, 7, 17, 18, 20, 21, 22, 23, 24, 25, 26</p>
<p>5. Apply knowledge of suture materials, techniques, and surgical anatomy to select appropriate surgical procedures and accurate use of suture patterns. Understand and</p>	<p>1, 2, 5, 11, 14, 17</p>

properly apply Halsted principles related to gentle tissue handling

Lecture name and number:	Lecture Learning Outcomes:	Course learning outcome Number/s
1. Surgical Approaches to the Abdomen and Incision Closure	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	1. Know the approaches, techniques and complications for exploratory celiotomy and abdominal organ biopsy	1, 4, 5
3. Castration Dog	1. Understand the indications for castration in the dog 2. Apply the different techniques for castration	1, 2, 3, 4, 5
4. Castration Cat	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	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	1. Understand the following aspects of GDV: pathogenesis, pathophysiology, and stabilization of the patient. 2. Understand the surgical	1, 2, 3, 4, 5

	techniques to prevent the recurrence of GDV.	
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 2. Know the clinical features of small bowel obstruction, diagnostic, and surgical techniques to correct this condition. 	1, 2, 3, 4
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 	1, 2, 3, 4, 5

	<p>common urethral conditions. FLUTD/FISC</p> <p>6. Know which of these pathologies can be corrected by surgery and the techniques available for surgical correction.</p>	
11. Spay, dog and cat	1. Be familiar with the surgical conditions of the ovaries and uterus.	1, 2, 3, 4, 5
12. Prostate surgery	1. Be able to diagnose and treat prostatic diseases applying new surgical techniques.	1, 2, 3, 4
<p>13. Surgical Approaches to the Thorax and Incision Closure.</p> <p>Thoracic surgery, PDA, Vascular ring anomalies (PRAA), other conditions.</p> <p>Lung surgery</p>	<p>1. Know the different surgical approaches to the thorax. Thoracocentesis</p> <p>2. Recognize the tissue planes involved in gaining access to the thoracic cavity.</p> <p>3. Know different closure methods.</p> <p>4. Understand the various surgical and drainage techniques applied to the thorax.</p> <p>5. Recognize the typical features of these common vascular diseases. Surgical treatment options</p> <p>6. Recognize the typical features of these common cardiac conditions. Surgical treatment options</p> <p>7. Recognize the typical features of other cardiac and thoracic/lung conditions. Surgical treatment options</p>	1, 2, 3, 4, 5
14. Upper Respiratory Tract. Brachycephalic Airway Syndrome	1. Understand the pathophysiological consequences of upper airway obstruction	1, 2, 3, 4, 5

	<ol style="list-style-type: none"> 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 	1, 2, 3, 4

	<p>management of the different abdominal hernias</p> <ol style="list-style-type: none"> 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. 	
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 2. Know the management and surgical techniques used to correct these problems 	1, 2, 3, 4
24. Surgery of the liver	<ol style="list-style-type: none"> 1. Be able to diagnose and correct conditions affecting the liver. 	1, 2, 3, 4

	2. Be able to diagnose and correct conditions affecting the extra hepatic biliary system.	
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	1. Understand how to choose	1, 2, 3, 4, 5

making. Complications	<p>the correct method of treatment.</p> <ol style="list-style-type: none"> 2. Know the common causes of complications of fracture repair. 3. Know how to avoid and treat complications of fracture repair 	
32. Fractures in growing animals	<ol style="list-style-type: none"> 1. Understand the classification of growth plate fractures, and its principles of treatment 	1, 2, 3, 4, 5
33. Articular diseases	<ol style="list-style-type: none"> 1. Recognize articular disease 2. Discuss clinical and surgical management 	1, 2, 3, 4, 5
34. Bone diseases	<ol style="list-style-type: none"> 1. Understand the general principles of bone pathology 2. Be able to discuss common examples. 	1, 2, 3, 4, 5
35. Growth abnormalities	<ol style="list-style-type: none"> 1. Growth abnormalities. OCD 	1, 2, 3, 4, 5
36. Conditions of the elbow	<ol style="list-style-type: none"> 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 	1, 2, 3, 4, 5

	approaches and surgical treatment for the listed conditions.	
39. Soft tissue orthopedic diseases	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.	1. Be able to recognize mandibular and maxillary conditions 2. Know their management techniques.	1, 2, 3, 4, 5
41. Spinal surgery	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	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	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	1. Understand the indications, techniques, and interpretation for intra oral radiology in companion animals	1, 3, 4
45. Dental concept driven therapy	1. Understand dental treatment concepts and how they relate to the different case presentations	1, 3, 4, 5
46. Creating the five-star	1. Know how to recognize and	1, 2, 3, 4, 5

dental practice	practice poor, adequate, and superlative dental care and patient management.	
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 	1, 3, 4, 5

	2. Know surgical and medical treatments for the disease.	
52. Neuro Ophthalmology	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

Grenada, West Indies

Small Animal Medicine and Surgery

Veterinary Anesthesiology SYLLABUS (3 credits)

SAMS 520 TERM 4

Spring 2021

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).
 - Office Zoom sessions will be held on Mondays 2:30-
3:30pm. Every session will be recorded and posted
on Panopto.
- 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

Most of the tools to be used will be centralized under the “Lessons” tab.

Other tools might eventually be used during the term. In such circumstances it will be announced accordingly.

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 need 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

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 access 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

VI. 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/tablet with functional microphone and camera are an asset for the Zoom sessions

VIII. 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

IX. Course Learning 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.

x. Lesson Learning Outcomes

See appendix I

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGU SVM program level outcome
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<p>CLO 1 Formulate a sedation and/or anesthetic plan in domestic and exotic animals according to their physical status.</p>	<p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare</p>
<p>CLO 2 Design an analgesic plan in domestic animals</p>	<p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare</p>
<p>CLO 3 Clinically interpret the information provided by the monitoring equipment</p>	<p>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</p>
<p>CLO 4 Assess the anesthetic depth of a patient of the different species</p>	<p>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</p>
<p>CLO 5 Formulate an euthanasia protocol for domestic animals</p>	<p>PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare</p>

	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

XII. Course Schedule

See Appendix II

XIII. 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

a. Assessment policy

This course is 140 points, divided in 8 weekly or biweekly Sakai Quizzes (80 points - ~57% of the final grade); one assignment (2 points - ~3% of the final grade) and one Final exam (**Cummulative** - 40% of the final grade)

SAKAI quizzes will consist of MCQ questions and/or hotspot questions. Each question is 1 point. Quizzes will be **open book and will not be timed**).

The contents of each quiz, availability date and deadline are detailed on the table below

Assessment	Lectures included	Number of questions (points)	Opening date	Deadline (Always on Sundays 11:55pm)	Feedback and grade release date (Always on Mondays 8am)
Quiz 1	L1-L6	12	Jan 25 (week 2)	Week 3	Week 4
Quiz 2	L7-L11 + DL1	12	Feb 12 (Week 4)	Week 5	Week 6
Quiz 3	L12-L17	12	Feb 26 (Week 6)	Week 7	Week 8

Quiz 4	L18-L22 + DL2	12	Mar 16 (Week 9)	Week 10	Week 11
Quiz 5	L23-L24+ DL3 (Zoom simulation)	6	Mar 26 (Week 10)	Week 11	Week 12
Quiz 6	L25-L30	12	Apr 9 (Week 12)	Week 13	Week 14
Quiz 7	L31-L35	10	Apr 23 (Week 14)	Week 15	Week 16
Quiz 8	L36-L38	6	Apr 30 (Week 15)	Week 16	Week 17
Catheter Assignment		2	Feb 19 (Week 5)	Week 7	Week 8* (tentative)
Final (Examsoft)		56	May 7	N/A	
Total		140			

*As the Catheter Assignment must be manually corrected an attempt to release the grade and feedback on Week 8 will be done, but it cannot be guaranteed. This assignment will consist of watching 2 videos regarding venous catheterizations and pointing the mistakes done during the catheterization in one of these videos

XIV. Recommended study strategies

Appointments to discuss study strategies can be arranged via email with the course director

XV. Instructor's expectations of the student

Students are expected to read the handouts provided for the Zoom discussions.

Although not strictly enforced, students are encouraged to participate on the Zoom sessions having their camera turned on

xvi. 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.

XVII. Attendance/Participation Policy

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with

online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 (Sakai quiz/test or Examsoft) 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) 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.

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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:
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XX. Copyright policy

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Appendices

Appendix I - Lessons and Laboratory outcomes

L: **Lab**

DL: **Didactic lab**

L/DL	Topic	Lesson Learning outcomes
L1	Introduction to the Course	a. Define some important terms used in anesthesiology b. Identify the different phases of anesthesia
L2	Anesthetic Planning	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	a. Reason the importance of premedication
L4	Preanesthetic Medication II	<p>b. Explain the mechanism of action of the effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines</p> <p>c. List the clinical effects and side effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines</p> <p>d. List the most commonly used opioids in veterinary anesthesia</p> <p>e. Understand the importance of using opioids for premedication</p> <p>f. Compare the different opioids regarding time of onset, duration of effect, efficacy and side effects</p> <p>g. Understand the importance of handling controlled substances in veterinary practice</p> <p>h. Compare atropine and glycopyrrolate regarding duration</p>

		of action, effects and side effects
L5	Injectable anesthetic agents I	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 d. Describe the different safety features of the machine and the gas supply e. Differentiate between rebreathing and non-rebreathing systems f. Calculate fresh gas flow rates for each system g. Describe the different waste anesthetic gas disposal systems
L8	Inhalation Anesthesia Equipment II	
L9	Inhalation Anesthesia Equipment III	

		<p>h. List the different modalities to provide inhalational anesthetics to a patient</p> <p>i. Explain the advantages, disadvantages and indications of face masks, supraglottic devices and endotracheal tubes</p>
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	<p>b. Explain the minimal alveolar concentration</p> <p>c. Compare the effects and side effects of the inhalant anesthetics in use (Isoflurane, Sevoflurane, Halothane, Desflurane)</p> <p>d. Explain the indications, effects and side effects of nitrous oxide</p> <p>e. Understand the potential risks of chronic exposure to inhalant anesthetics and nitrous oxide</p>
DL 01	Didactic Lab 1	<p>a. Observe intravenous catheter placement in a dog manikin</p> <p>b. Calculate drug dosages, drug solutions and fluid rate rate for different dripping sets</p>

		<ul style="list-style-type: none"> c. Observe the assembling an anesthesia machine and name its components d. Explain the gas flow through the anesthesia machine e. Observe a leak test of the anesthesia machine and describe the steps to perform it f. Understand the differences of the gas flow among the breathing systems and its implication on the anesthetic procedure g. Observe the intubation of a dog manikin and describe the correct steps for the procedure
L12	Pharmacology of Local Anesthetic Drugs	<ul style="list-style-type: none"> 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

		<p>in small animals: topical anesthesia, infiltration techniques, nerve blocks of head and extremities, intravenous regional anesthesia and epidural anesthesia</p> <p>b. List the indications and possible side effects of the LA techniques mentioned above</p>
L14	Local Anesthesia in Large animals	<p>a. Explain the significance of local anesthesia in large animals</p> <p>b. Describe commonly used local anesthetic techniques in large animals</p> <p>c. Understand the side effects of these LA techniques</p>
L15	Pain Physiology	<p>a. Explain the nociceptive pathway</p> <p>b. Differentiate between physiologic and clinical pain</p> <p>c. Explain the possible consequences of pain</p> <p>d. Justify pain treatment in animals</p>
L16	Pain Assessment	<p>a. Explain the commonly used pain scoring systems in animals: numerical rating scales, visual analogues scales, composite pain scales</p> <p>b. Understand the limitations of pain assessment in animals</p>

		c. Explain the PLATTER approach to pain
L17	Pain Treatment: Pharmacologic Approach	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	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	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	a. Assess the respiratory function in the anesthetized patient

		<ul style="list-style-type: none"> 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	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
L22	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
DL2	Didactic lab 2: 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

		d. Observe the use of an ECG in the clinical instructor and interpret the ECG
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
DL3	Zoom session: Simulation	<ul style="list-style-type: none"> a. Develop an anesthetic plan for a fictional case and observe its monitoring with the means of a monitor simulator
L25	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

L26	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
L27	Small Animal Anesthesia II	
L28	Small Animal Anesthesia III	
L29	Small Animal Anesthesia IV	
L30	Small Animal Anesthesia V	

		<p>animal patients with renal disease</p> <p>j. Design an anesthetic protocol for obstructed small animal patients</p> <p>k. Design an anesthetic and analgesic protocol for small animal patients with diabetes mellitus</p> <p>l. Design an anesthetic and analgesic protocol for a cat with hyperthyroidism</p> <p>m. Anesthesia in ophthalmic patients</p> <p>n. Design an anesthetic protocol in neurological patients</p> <p>o. Understand the physiological changes of pregnancy and the implications for anesthesia</p> <p>p. Design an anesthetic protocol for a patient undergoing C-section</p> <p>q. Design an anesthetic and analgesic protocol for small animal patients with different heart conditions</p> <p>r. Design an anesthetic and analgesic protocol for dogs</p>
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		with gastric-dilatational volvulus (GDV)
DL4	Case simulation (Zoom session)	a. Discuss the anesthetic management of a real case
L31	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
L32	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
L33	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
L34	Equine anesthesia II	
L35	Equine anesthesia III	

		c. Design an anesthetic and analgesic protocol for horses
L36	Anesthesia in Ruminants and Camelids	<p>a. Explain the special considerations in ruminant anesthesia</p> <p>b. Choose an appropriate drug protocol for cattle and small ruminant</p> <p>c. Explain the challenges in camelid anesthesia</p> <p>d. Choose an appropriate anesthetic protocol for camelids</p>
L37	Swine Anesthesia	<p>a. Explain the challenges of anesthesia in pigs</p> <p>b. Design an anesthetic and analgesic drug protocol for pigs</p> <p>a. Define the term malignant hyperthermia</p>
L38	Euthanasia	<p>a. List the different techniques and drugs available for euthanasia in small and large animals</p> <p>b. Explain how to properly euthanize small animals and horses</p> <p>c. Describe how to confirm death in animals after euthanasia</p> <p>d. Appreciate the AVMA guidelines for euthanasia of Animals</p>

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 (Jan 18 2:30- 3:30pm)	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				
	Catheter assignment opens				
7	L18	FR	Anesthesia Monitoring I	Panopto	Q4
	L19	FR	Anesthesia Monitoring II	Panopto	Q4
	L20	FR	Anesthetic Monitoring III	Panopto	Q4
	Quiz 3 deadline				
	Catheter assignment deadline				
8	Midterms (no activities)				
9	L21	All	ECG and Capnograph: An interactive approach	Zoom	Q4
	L22	FR	Anesthetic Monitoring IV	Panopto	Q4
	DL2	All	Lab: Monitoring equipment (Videos on Panopto)	Panopto	Q4
	Quiz 4 opens				
10	L23	FR	Anesthetic Emergencies and Complications	Panopto	Q5
	L24	FR	CPR	Panopto	Q5
	DL3	FR	Zoom - Simulation (2h)	Zoom Group A: Monday	Q5

				Group B: Tuesday Group C: Wednesday	
Quiz 4 deadline					
Quiz 5 opens					
11	L25	FR	Fluid therapy in anesthesia	Panopto	Q6
	L26	FR	Small Animal Anesthesia I	Panopto	Q6
	L27	FR	Small Animal Anesthesia II	Panopto	Q6
	Quiz 5 deadline				
12	L28	FR	Small Animal Anesthesia III	Panopto	Q6
	L29	FR	Small Animal Anesthesia IV	Panopto	Q6
	L30	FR	Small Animal Anesthesia V	Panopto	Q6
	Quiz 6 opens				
13	DL4	All	Zoom: Case discussion (2h)	Zoom Group A: Monday Group B: Tuesday Group C: Wednesday	Not assessed
	L31	FR	Anesthesia in Rabbits, Guinea Pigs and Small Rodents	Panopto	Q7
	L32	FR	Avian and Reptile Anesthesia	Panopto	Q7
	Quiz 6 deadline				
14	L33	FR	Equine Anesthesia I	Panopto	Q7
	L34	FR	Equine Anesthesia II	Panopto	Q7
	L35	All	Equine Anesthesia III	Panopto	Q7
	Quiz 7 opens				
15	L36	FR	Anesthesia in Ruminants and Camelids	Panopto	Q8
	L37	FR	Swine Anesthesia	Panopto	Q8
	L38	FR	Euthanasia	Panopto	Q8
	Quiz 7 deadline				

	Quiz 8 opens
16	Finals: Anesthesia - May 07 (Friday)
	Quiz 8 deadline



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

SPRING 2021

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor

Email: tguttin@sgu.edu; Zoom appointments available by request.

Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

Lecturers in this course:

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

Bob Kennis, DVM, DACVD, Visiting Professor, kennira@auburn.edu;

Melissa Bain, DVM, DACVB, Visiting Professor, mjbain@ucdavis.edu.

Class Office Hours via Zoom: Every Monday 1:30-2:30 pm AST. One-on-one office hours available upon request.

II. Course location

This course will be run completely online, **asynchronously**, using Sakai tools Lessons, 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. 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. 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

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 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 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 Learning 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:

- Assignments x6 (5 points each) = 30 points
 - A rubric will be provided with each assignment
 - If you get a failing grade (<3) on an assignment, you will be allowed to resubmit your assignment, to earn 1 additional point. Failing to resubmit will result in a deduction in the Professionalism grade.
- Sakai Quizzes x5 (5 points each) = 25 points
- Forum discussion CPR = 10 points
- Professionalism = 5 points
 - Please see Professionalism Rubric, Appendix XXI
 - Late assignments/quizzes will be accepted, but points will be deducted per this rubric
- Final Exam (cumulative)= 30 points
- Please note there is no midterm exam in this course

This is a completely asynchronous course devised with your flexibility in mind. You may work ahead and this is recommended. **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.

XIV. Recommended study strategies

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 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.

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XXI. Appendices: LO Mapping, Course Schedule, Rubrics

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

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5. Recognize emergency presentations and considerations for specific organ systems.
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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

SAMS522 Small Animal Medicine 1 Suggested Weekly Schedule

Week	Day/Dates	LECTURE TOPIC	Hours	Instructor
Week 1	Jan 18-24 Note: VEA on Jan 22	Intro to Small Animal Med 1 Mini-Panopto Infectious Diseases lectures 1-3: 1. Clinical Pharmacology and Antibiotic Usage 2. & 3. Tick-Bourne Diseases	3	Guttin Corrigan
Week 2	Jan 25-31	Infectious Diseases lectures 4-6: 4. Systemic Mycoses 5. Canine Viral Diseases 6. Feline Viral Diseases	3	Corrigan
Week 3	Feb 1-7	Infectious Diseases lecture 7: 7. Bacterial and Protozoal Diseases Infectious Diseases DUE DATE Feb 7th Sakai Assignments: ID charts Sakai Quiz: ID quiz Dermatology Lecture 1: 1. Intro to Dermatology and Bacterial Folliculitis	1 1 1	Corrigan Kennis
Week 4	Feb 8-14 Mon holiday	Dermatology Lectures 2-4: 2. Bacterial Folliculitis and Deep Bacterial Infections 3. Dermatophytes and Demodicosis 4. Sarcoptic Mange, Flea Allergy, & Malassezia Dermatitis	3	Kennis
Week 5	Feb 15-21	Dermatology Lectures 5-7: 5. Atopy & Food Allergy 6. Feline Pruritic Skin Disorders 7. Autoimmune Skin Disorders	3	Kennis
Week 6	Feb 22-28	Dermatology Lectures 8-9: 8. Ulcerative & Scaling Disorders 9. Otitis Derm DUE DATE Feb 26th Sakai Assignment: Dermatophyte discharges Sakai Quiz: Dermatology Quiz	2 1	Kennis
Week 7	March 1-7	Emergency Medicine: CPR Read article on your own (no lecture) CPR DUE DATE March 7th Forums Post: Top 10 New Facts You Learned	1 1	Corrigan
Week 8	March 8-14	MIDTERM WEEK No exam for this class		

Week 9	March 15-21	Hematology and Immunology lectures 1-3: 1. Disorders of Hemostasis 2. Immune-Mediated Diseases 3. Approach to Anemia	3	Corrigan Guttin
Week 10	March 22-28	Hematology and Immunology lecture 4: 4. Approach to Thrombocytopenia, Misc. Hematol. Hematology & Immunol DUE DATE Mar 28 Sakai Assignment: Prednisone discharges Sakai Quiz: Hematology and Immunology Quiz	1 1	Guttin
Week 11	March 29-April 4 Fri holiday	Renal and Urinary lectures 1-3: 1. Intro and Review Localization 2. Acute Kidney Injury 3. Chronic Kidney Disease	3	Guttin
Week 12	April 5-April 11 Mon holiday	Renal and Urinary lectures 4-6: 4. Proteinuria and Glomerular Disease 5. Urolithiasis and Canine Urethral Obstruction 6. Feline Urethral Obstruction and Idiopathic Cystitis	3	Guttin
Week 13	April 12-18	Renal and Urinary lectures 7 & 8: 7. Urinary Tract Infections, Prostatic Disease, and Neoplasia 8. Micturition Disorders Renal and Urinary DUE DATE April 18th Sakai Assignment: Acute Kidney Injury Case Sakai Quiz: Renal and Urinary Quiz	2 1	Guttin
Week 14	April 19-25	Behavior lecture: Feline Inappropriate Eliminations Behavior DUE DATE April 25th Sakai Assignment: Ohio St. Indoor Cat Initiative Respiratory lectures 1: 1. Respiratory Disease—Emergency Considerations	1 1 1	Bain Corrigan
Week 15	April 26-May 2	Respiratory lectures 2-4: 2. Nasal Disorders 3. Disorders of the Larynx and Pharynx 4. Disorders of the Trachea and Bronchi	3	Corrigan
Week 16	May 3-9	Respiratory lectures 5-6: 5. Disorders of the Pulmonary Parenchyma 6. Disorders of the Pleural Cavity Respiratory DUE DATE May 9th Sakai Assignment: Respiratory Case Sakai Quiz: Respiratory Quiz FINISH ALL ASSIGNMENTS QUIZZES BY MAY 9TH	2 1	Corrigan
Week 17	May 10-16	FINAL EXAM WEDNESDAY MAY 12th		

Student Professionalism In Online Courses: Small Animal Medicine Courses, Sp 21

Professionalism: 5 points

If a score of 0 or 1 in professionalism is obtained, the student will automatically be brought to CAPPS.

Professionalism Rubric:

Criteria	Did not meet expectations
Punctuality for assignments and quizzes	Failed to submit assignments or quizzes on time unless excused by SVM DOS. Deduction of 1 point for each assignment/quiz that is late.
Appropriate professional communication (example: excused late assignments/quizzes)	If a student did not email a faculty member regarding an excused lateness in a timely manner, or did not respond to a faculty email: Deduction of 1 professionalism points.
Other Professionalism (optional Forums posts, Zoom office hours attendance, completing assignment revisions when asked)	If a student was asked to resubmit an assignment, and the student did not do so: Deduction of 1 professionalism point.



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

SPRING 2021

I. Course Faculty and Staff Information

Course Director: Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor.

Email: acorrigan@sgu.edu; Zoom appointments by request.

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;

Kim Johnson, DVM DACVIM (Onco), Visiting Professor,
petcancerconsulting@gmail.com

Class Office Hours via Zoom: Every Monday 12-1pm AST. One-on-one office hours available upon request.

II. Course location

This course will be run completely online, **asynchronously**, using Sakai tools Lessons, 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. 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. 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

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 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 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 Learning 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 total points:

- Assignments x6 (5 points each, except Onco assignment 10 pts) = 35 points
 - A rubric will be provided with each assignment
 - If you get a failing grade (<3) on an assignment, you will be allowed to resubmit your assignment, to earn 1 additional point. Failing to resubmit will result in a deduction in the Professionalism grade.
- Sakai Quizzes x6 (5 points each) = 30 points
- Professionalism = 5 points
 - Please see Professionalism Rubric, Appendix XXI
 - Late assignments/quizzes will be accepted, but points will be deducted per this rubric
- Final exam (cumulative) = 30 points
- Please note there is no midterm exam in this course

This is a completely asynchronous course devised with your flexibility in mind. You may work ahead and this is recommended. **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.

XIV. Recommended study strategies

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 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. **Employment is not an excusable absence.** Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 examinations MUST inform the Course Director (acorrigan@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

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.

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

SAMS 524 Small Animal Medicine 2 Suggested Weekly Schedule

Week	Day/Dates	LECTURE TOPIC	Hours	Instructor
Week 1	Jan 11-17	<p>Intro to the course 5 min Panopto video</p> <p>Cardio lectures 1-4: 1. Cardiac physiology and CHF 2. Feline Cardiac Diseases 3. & 4. Canine Cardiac Diseases (2)</p>	4	Corrigan
Week 2	Jan 18-24	<p>Cardio lectures 5-7: 5. Systemic and Pulmonary Hypertension 6. ECG Interpretation 7. Arrhythmias</p> <p>Cardio DUE DATE Jan 24th Sakai Assignment: Cardio Discharges Sakai Quiz: ECG Quiz</p>	3 1	Corrigan
Week 3	Jan 25-31	<p>Gastrointestinal lectures 1-4: 1. Intro, Localization and Nutrition Review 2. Oral and Pharyngeal Diseases 3. Esophageal Diseases 4. Acute Abdomen</p>	4	Guttin
Week 4	Feb 1-7	<p>Gastrointestinal lectures 5-8: 5. Diseases that Cause Acute Vomiting 6. Pancreatitis 7. Diseases That Cause Acute Diarrhea 8. Diseases That Cause Chronic GI Signs Part 1</p>	4	Guttin
Week 5	Feb 8-14 Mon holiday	<p>Gastrointestinal lectures 9-10: 9. Diseases That Cause Chronic GI Signs Part 2 10. Colonic, Anal Sac, and Misc. GI Diseases</p> <p>Gastrointestinal DUE DATE Feb 14th Sakai Assignment: Gastrointestinal Case Sakai Quiz: Gastrointestinal Quiz</p> <p>ECC lecture 1: 1. SIRS and Sepsis</p>	2 1 1	Guttin
Week 6	Feb 15-21	<p>ECC lectures 2-4: 1. SIRS and Sepsis 2. & 3. Environmental Emergencies 4. Transfusion Medicine</p> <p>Behavior lectures 1: 1. Puppies</p>	3 1	Guttin Corrigan Bain
Week 7	Feb 22-28	<p>Behavior lecture 2: 2. Psychopharmacology</p> <p>ECC + Behavior DUE DATE Feb 28th Sakai Quiz: ECC + behavior quiz</p> <p>Onco lectures 1-2: 1. Intro to Oncology 2. Chemotherapy</p>	1 1 2	Bain Johnson

Week 8	March 1-7	Onco lectures 3-6: 3. Radiation Therapy 4. Lymphoma 5. Soft Tissue Sarcomas/Mast Cell Tumors 6. Hemangiosarcoma	4	Johnson
Week 9	March 8-14	Onco lecture 7: 7. Osteosarcoma Onco DUE DATE March 14th Sakai Assignments: Onco chart Neuro lectures 1-3: 1. Localization, and Cerebrum 2. Seizures, Brainstem 3. Cerebellar and Vestibular Syndromes	1 1 3	Johnson Narak
Week 10	March 15-21	Neuro lectures 4-6: 4. Myelopathies/IVDD 5. CNS Trauma 6. Neuromuscular Diseases Neuro DUE DATE March 21th Sakai Assessments: Neuro referral letter Sakai Quiz: Neuro quiz	3 1	Narak
Week 11	March 22-28	Endocrine lectures 1-4: 1. Thyroid Diseases 2. Adrenal Diseases 3 & 4. Diabetes/Acromegaly and Additional Endocrinopathies	4	
Week 12	March 29-April 4 Fri holiday	Endocrine reading + lecture 5: On your own read Cooper article first 5. DKA Case Panopto Endocrine DUE DATE April 4th Sakai Assignment: Diabetes Case Lecture Qs Sakai quizzes: Endocrine Quiz	2 1	Corrigan
Week 13	April 5-11 Mon holiday	Liver lectures 1-4: 1. Patient Presentations 2. Biliary Diseases 3. Feline Hepatic Lipidosis 4. Toxic and Infectious Liver Diseases	4	Guttin
Week 14	April 12-18	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 DUE DATE April 25th Liver Assignment: Liver treatment sheet Sakai Quiz: Liver Quiz	3 1	Guttin
Week 15	April 19-25	LAST ZOOM: Tinkerbelle Monday April 19 SUBMIT ALL INCOMPLETE ASSIGNMENTS/QUIZZES BY APRIL 23rd		
Week 16	April 26-May 2	FINALS WEEK		
Week 17	May 3-9	FINAL EXAM THURSDAY MAY 8th		

Student Professionalism In Online Courses: Small Animal Medicine Courses, Sp 21

Professionalism: 5 points

If a score of 0 or 1 in professionalism is obtained, the student will automatically be brought to CAPPS.

Professionalism Rubric:

Criteria	Did not meet expectations
Punctuality for assignments and quizzes	Failed to submit assignments or quizzes on time unless excused by SVM DOS. Deduction of 1 point for each assignment/quiz that is late.
Appropriate professional communication (example: excused late assignments/quizzes)	If a student did not email a faculty member regarding an excused lateness in a timely manner, or did not respond to a faculty email: Deduction of 1 professionalism points.
Other Professionalism (optional Forums posts, Zoom office hours attendance, completing assignment revisions when asked)	If a student was asked to resubmit an assignment, and the student did not do so: Deduction of 1 professionalism point.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT: Small Animal Medicine and Surgery

COURSE NAME: *Introduction to Clinical Practice SYLLABUS* (1 credit)

COURSE NUMBER: SAMS 526 TERM 5

Term: Spring 2021

I. Course Faculty and Staff Information

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: lwise1@sgu.edu & kjohn5@sgu.edu

II. Course location

Online using Sakai resources such as Zoom, Panopto, Lessons, and Assignments

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. 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 as well as camera recording capabilities.

VIII. Course rationale

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, differential diagnoses, diagnostic plans and therapeutic plans 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 Learning 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 Learning 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.

Lecture 3.

Review and discuss small animal modules.

Online Clinical Rotations

Review simulated cases

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

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

X. Course Schedule

Week 1	Zoom Introduction lecture (all students) Wednesday 1:00pm-2:00pm	1 lecture hour
Week 1	Zoom Communication Skills Labs Introduction lecture (all students) Wednesday 12:00pm-1:00pm	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 1:00pm-2:00pm	1 lecture hour
Week 3, Week 5, Week 7	Zoom SOAP Prep sessions with small groups (1/3 rd of the class) on Tuesday from 2:00pm-3:00pm	0.25 lecture

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 online rounds with small groups (1/3 rd of the class) on Friday from 12:00pm-1:30pm	1 lecture
Week 9-15	SOAP Assignments using Online paper clinical cases due on Thursday at 5:00pm via sakai assignment	4 lecture hours
Week 9-15	Zoom online rounds with small groups (1/3 rd of the class) on Friday 12:00pm-1:30pm	1 lecture hours
Week 10, Week 12, Week 14	Zoom SOAP Prep sessions with small groups (1/3 rd of the class) on Tuesday from 2:00pm-3:00pm	0.25 lecture
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

Assignments will be uploaded on the Assignment section of the SAMS 526 Course on sakai by 9:00am on Monday. Students will complete their SOAP assignments before the deadline and then upload the written assignments to the Assignment section on sakai.

Students must participate all scheduled online Zoom sessions.

All grades for online rotations Including SOAP assignments and online Zoom rounds will be posted on Examsoft by supervising faculty and will be released to students 7 days after students submit their assignments.

Students will receive formative feedback/assessments for their first online Zoom rounds which will occur on Friday of Week 2, Week 4, Week 6. All other online Zoom rounds and SOAP assignments are summative assignments.

Please see the appended rubric that will be used for grading online rotations.

Students will submit completed SOAP assignments from clinical online cases including client education.

Assignments will be open on sakai assignments section at or before 9:00am Monday (AST/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 complete their SOAP assignments, then will submit their completed SOAP assignments to sakai assignments section by 5:00pm on the following Thursday of the second week of their rotation.

Online Zoom rounds to discuss clinical cases with 1/3rd of the class will be held on every Friday at 12:00pm-1:30pm.

On the Tuesday afternoon of the second week of each 2 week rotations students will attend mandatory SOAP Prep session.

Additionally, clinicians will also have “Office Hours” available 9:00am-5:00pm to guide individual students via Zoom meeting and/or email.

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 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 at 12:00pm - 1:30 pm. On the Tuesday afternoon of week 3 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

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 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 at 12:00pm - 1:30 pm. On the Tuesday

afternoon of week 5 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

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 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 at 12:00pm - 1:30 pm. On the Tuesday afternoon of week 7 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

Week 8. No assignments because it is mid-term week.

For Week 9 and 10.

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 9 via 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 at 12:00pm - 1:30 pm. On the Tuesday afternoon of week 10 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

For Week 11 and 12.

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 11 via 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 at 12:00pm - 1:30 pm. On the Tuesday afternoon of week 12 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

Week 13 and 14.

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 13 via 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 13 and the Friday of Week 14 at 12:00pm - 1:30 pm. On the Tuesday afternoon of week 14 at 2:00pm - 3:00pm students will attend a mandatory Zoom SOAP Debrief session.

Week 15.

Remediation week for any students who had deficient grades during their online rotations for SOAP assignments and/or online 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.

XI. Grading and assessment policy, and grading rubrics

Grading scale: This course is pass/fail.

Summative Assessments:

Students will receive 50% for pre mid-term online assignments.

Students will receive 50% for post mid-term online assignments.

Formative Assessments:

Participation (answering questions) during their 1st small group Zoom meetings/online rounds.

Successful completion of online communication skills Lab. Communications Labs will be conducted via Zoom from **130p-430p** AST on Wednesdays. Each student must complete the Self assessment "quiz" on sakai, which is due on May 1st, 2021.

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.

All Zoom sessions are mandatory.

XII. 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.

XIII. 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:

- 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

XIV. 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.

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

Students are expected to be available during the standard 8:00 am -5:00pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. Students' lack of attendance, engagement, and participation may adversely affect their academic status as specified in the grading policy.

It is recommended that students attend the 3 lectures in Week 1 and Week 2. These lectures will be recorded for any student who cannot attend.

Students must attend and participate in all online Zoom rounds and SOAP debriefing sessions.

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.

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

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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) 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.

XIV. 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.

XV. 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.

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 Reasoning (oral) (Task review clinical paper or online case and participate in Zoom rounds)	Student attended and actively participated in online rounds on 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.	Student attended and actively participated in online rounds on 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.	Student attended but had limited participation with 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	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>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 interactive Zoom sessions or sakai forums, the student clearly discussed/stated the appropriate knowledge base for this stage of their career. 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,</p>	<p>Student read and interpreted most aspects of the clinical paper/online case. Through written 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. For the most part, the student is able to express in written format (+/- discuss verbally via Zoom) their knowledge of companion animal medicine,</p>	<p>Student read but fail to interpret/understand the clinical paper/online case. Through written assignments and interactive Zoom sessions or sakai forums, the student clearly discussed/stated inadequate knowledge base for this stage of the career. 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>Through written assignments and any interactive Zoom sessions or sakai forums, the student clearly discussed/stated inappropriate knowledge base for this stage of the career. 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. Student develops inappropriate written and/or verbal plans for cases</p>	

	logical and easy to follow format. Student develops appropriate written plans for case discussion and management	shelter medicine, surgery, anesthesia or emergency and critical care in an organized and logical format. For the most part, the student develops appropriate written plans for case discussion and management	Student develops inappropriate written and/or verbal plans for cases. Knowledge base needs to improve		
SOAP assignment s online (written assignment)	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 (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	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. 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. The SOAP contained 75% of appropriate	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 prioritized correctly. 50% of the differential diagnoses for each problem are listed in order of most likely to least likely. The mandatory discussion subsection within the Assessment section in paragraph format was either missing completely or was very brief and vague.	Written SOAP consistently fails to include information in the correct section. The SOAP does not follow a logical order and is disorganized and inaccurate. More than 25% of the total problems are omitted, problems on the Problem List are not prioritized. The discussion subsection with the Assessment is missing or written in bullet point format. Discharge instructions only contains medical terminology which make it impossible for clients to understand or comply with the instructions given.	

	<p>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 and include important client take-aways for medications.</p> <p>The SOAP assignment is organized, accurate and thought processes flows logically.</p>	<p>medical terminology whereas the discharge instructions must be written in layman terms. The SOAP is well organized, accurate and thought processes flows logically for the most part.</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. The SOAP is partially organized, inaccurate and thought processes do not flow in a logical sequence.</p>		
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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 1.5 hour Zoom rounds sessions on Fridays, break-out rooms will be employed on some Fridays. These sessions will be recorded.

Each student will need to participate in a 1 hour Zoom Prep sessions on Tuesdays.

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 1.5 hour Zoom rounds sessions on Fridays, break-out rooms will be employed on some Fridays. These sessions will be recorded.

Each student will need to participate in 1 hour Zoom Prep sessions on Tuesdays.

Week 15 will be dedicated to any make up rotations that students missed due to valid medical excuses or deficient performance.

Course Schedule: Changes in the following schedule may occur at the course director's discretion, students will be notified at the earliest convenience. All times stated are in AST.

Week	Date & Time	Sessions	Group / Student Names
1	Wednesday 20 th January 1:00pm - 2:00pm	Introductory Lecture	Entire Class
2	Monday 25 th January 9:00 am	Access to online Case assignment	Group A
2	Wednesday 27 th January		

	12:00pm - 1:00 pm	Communication Lab Lecture	Entire Class
	1:00pm -2:00 pm	Small Animal Module Lecture	Entire Class
2	Friday 29 th January 12:30pm – 1:30pm	Zoom Online Rounds Session	Group A
3	Tuesday 2 nd February 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group A
3	Thursday 4 th February 5:00pm	Online Case Assignment Due	Group A
3	Friday 5 th February 12:30pm – 1:30pm	Zoom Online Rounds Session	Group A
4	Monday 8 th February 9:00 am	Access to online Case assignment	Group B
4	Friday 12 th February 12:30pm – 1:30pm	Zoom Online Rounds Session	Group B
5	Tuesday 16 th February 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group B
5	Thursday 18 th February 5:00pm	Online Case Assignment Due	Group B
5	Friday 19 th February 12:30pm – 1:30pm	Zoom Online Rounds Session	Group B
6	Monday 22 nd February 9:00 am	Access to online Case assignment	Group C

6	Friday 26 th February 12:30pm – 1:30pm	Zoom Online Rounds Session	Group C
7	Tuesday 2 nd March 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group C
7	Thursday 4 th March 5:00pm	Online Case Assignment Due	Group C
7	Friday 5 th March 12:30pm – 1:30pm	Zoom Online Rounds Session	Group C
8	8 th – 12 th March	MIDTERMS	
9	Monday 15 th March 9:00 am	Access to online Case assignment	Group C
9	Friday 19 th March 12:30pm – 1:30pm	Zoom Online Rounds Session	Group C
10	Tuesday 23 rd March 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group C
10	Thursday 25 th March 5:00pm	Online Case Assignment Due	Group C
10	Friday 26 th March 12:30pm – 1:30pm	Zoom Online Rounds Session	Group C
11	Monday 29 th March 9:00 am	Access to online Case assignment	Group B
11	Friday 2 nd April 12:30pm – 1:30pm	Zoom Online Rounds Session	Group B
12	Tuesday 6 th April 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group B

12	Thursday 8 th April 5:00pm	Online Case Assignment Due	Group B
12	Friday 9 th April 12:30pm – 1:30pm	Zoom Online Rounds Session	Group B
13	Monday 12 th April 9:00 am	Access to online Case assignment	Group A
13	Friday 16 th April 12:30pm – 1:30pm	Zoom Online Rounds Session	Group A
14	Tuesday 20 th April 2:00pm – 3:00pm	Zoom SOAP Debrief Session	Group A
14	Thursday 22 nd April 5:00pm	Online Case Assignment Due	Group A
14	Friday 23 rd April 12:30pm – 1:30pm	Zoom Online Rounds Session	Group A
15	26 th – 30 th April	Remediation Sessions	TBD
16	3 rd – 7 th May	FINALS	

Appendix 3.

SAMS 526 communication skills online schedule.
Time: Wednesdays from 1:30pm-4:30pm 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 4.

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 complete physical examinations on small animals 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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St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

JUNIOR SURGERY AND ANESTHESIA LABORATORY (2 credits)

SAMS 527 (TERM 5)

Spring 2021

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

Assistant Professor (eturitt1@sgu.edu)

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)
 - 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)
VP's (TBA)
- **Anesthesia:**
 - Flavia Restitutti DVM, PhD (frestitu@sgu.edu)
 - Mercedes Miccio, DVM (mmiccio@sgu.edu)
 - Mrs. Naudia Dundas, Demonstrator (ndundas@sgu.edu)

Technicians

- Registered Vet 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 Spring 2021
- 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
- Basic instruments and suture material
- Laptop with webcam and functional microphone

V. Recommended resources

- Stable Internet connection
- 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. 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, behavior, ethical dilemmas, etc.

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 assigned patient, including the writing of surgery and anesthesia reports, postoperative treatment plans, discharge instructions, and will perform pain management assessments.

IX. Course Learning 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 to a team environment

X. Lesson Learning 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. Describe patient care in the postoperative period and how 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, and Discharge Instructions).
<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. Contribute and collaborate in group assignments and provide constructive feedback to peers 4. Demonstrate maturity 5. Demonstrate that is safe to perform procedure

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Level Outcome	SGU SVM Program Level Outcome
1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories including both anesthesia and surgical case rounds.	A. Core Medical Knowledge PLO: 1,2,3,4,5, 6,7,8,9, 10, 11, 12 B. Core Professional Attributes PLO: 14,16,17,19,20 C. Core Clinical Competencies (Skills) PLO: 22,23,24,25,26
2. Describe and perform a Castration and a Spay procedure in a model as a surgeon	A. Core Medical Knowledge PLO: 1,2,12 B. Core Professional Attributes PLO: 14,16,17, C. Core Clinical Competencies (Skills) PLO: 23
3. Describe sedation and or anesthesia in a model patient for Castrations and Spays	A. Core Medical Knowledge PLO: 1,2,3,4,5,6,7,8,9,12 B. Core Professional Attributes PLO: 13,14,16,17,19, 20 C. Core Clinical Competencies (Skills) PLO: 22,25,
4. Demonstrate proficiency in medical record writing and keeping	A. Core Medical Knowledge PLO: 1, 2,3,4,5,6,8,12 B. Core Professional Attributes PLO: 13,14,16,17,19, 20 C. Core Clinical Competencies (Skills) PLO: 24,26,27
5. Professionally perform and contribute in a team environment	A. Core Medical Knowledge PLO: 12 B. Core Professional Attributes PLO: 14,16,17

Please find a detailed description of Course Level Outcomes (CLOs) mapped to Program Level Outcomes (PLOs) at the end of the syllabus in Appendix 1.

XII. Course Schedule

Week	DATE (12pm-1pm GND/AST)	LECTURE/LAB/MODULE	Lecturer	ASSIGNMENT	Student Time Commitment
Week 1	18-22 Jan	Tues 19th : Anesthesia Review (½ Class) Zoom live Thurs 21st : Anesthesia Review (½ Class) Zoom live	Anesthesia Team: Dr. Restitutti, Dr. Miccio, Ms. Dundas		Lecture=1 hr
Week 2	25-29 Jan	Tues 26th : JSAL intro (whole class) Zoom live <ul style="list-style-type: none"> Surgery prep review videos Panopto (whole class) Asynchron Watch Castration Video 	Dr. Lanza Dr. Turitto Dr. Kalasi Anesthesia Team: Dr. Restitutti, Dr. Miccio, Ms. Dundas	Sun 31st : Castration Video Quiz Due	Lecture=1 hr Sx Prep Videos= 1hr 45 min Castration Video + Quiz = 1 hr
Week 3	1-5 Feb	Tues 2nd : Medical Records and Castration Procedure (whole class) Zoom live Thurs 4th : Anesthesia Castration Rounds all class	Dr. Lanza Dr. Turitto Dr. Kalasi	Sun 7th : Draping Video Assessment upload Due	Lecture=1 hr Rounds=1 hr Assessment=15 min
Week 4	8-12 Feb	Tues 9th : Castration Rounds 1 (whole class) Zoom Live Thurs 11th : Mock Castration 1h/ 24Students	Dr. Lanza Dr. Turitto Dr. Kalasi	Sun 14th : Castration Medical Records 1 Due (all groups) Sun 14th : Surgery Reports due for students who completed mock castration this week	Rounds= 1hr Medical Records= 2 hr (group assignment) Mock Castration= 1 hr (24 students) Sx Report (24 students) = 1 hr
Week 5	15-19 Feb	Tues 16th : Castration Rounds 2 (whole class) Zoom Live 1 Thurs 18th : Mock Castration 1h/ 24 Students	Dr. Lanza Dr. Turitto Dr. Kalasi	Sun 21st : Castration Medical Records 2 Due (all groups) Sun 21st : Surgery Reports due for students who completed mock castration this week	Rounds= 1hr Medical Records= 2 hr (group assignment) Mock Castration= 1 hr (24 students) Sx Report (24 students) = 1 hr

Week 6	22-26 Feb	<p>Tues 23rd: Castration Rounds 3: Special Topics (whole class) Zoom Live</p> <p>Thurs 25th: Mock Castration 1h/ 24 Students</p>	Dr. Lanza Dr. Turitto Dr. Kalasi	<p>Sun 28th: Special Topics Quiz 1 Due</p> <p>Sun 28th: Surgery Reports due for students who completed mock castration this week</p>	<p>Rounds= 1hr</p> <p>Special Topics Quiz 1= 15 min</p> <p>Mock Castration= 1 hr (24 students)</p> <p>Sx Report (24 students) = 1 hr</p>
Week 7	1-5 Mar	<p>Tues 2nd: Mock Castration 1h/ 24 Students</p> <p>Thurs 4th: Mock Castration make up</p>	Surgery Instructors	<p>Sun 7th: Surgery Reports due for students who completed mock castration this week</p> <p>Sun 7th: Anesthesia Castration Assignment Due</p>	<p>Mock Castration= 1 hr (24 students)</p> <p>Sx Report (24 students) = 1 hr</p>
Week 8	8-12 Mar	MIDTERMS:		Peer Evaluations	Peer Evaluations= 30min
Week 9	15-19 Mar	<p>Tues 16th: Zoom Spay Procedure (whole class) Live Zoom 1 hr</p> <p>Thurs 18th: Anesthesia Rounds whole Class 1 hr</p>	Dr. Lanza Dr. Turitto Dr. Kalasi Anesthesia Team: Dr. Restitutti, Dr. Miccio, Ms. Dundas	<p>Sun 21st: Spay Video Quiz Due</p> <p>Suspensory Ligament Rupture Assignment Due</p>	<p>Lecture=1 hr</p> <p>Spay Video= 1 hr 30min</p> <p>Suspensory ligament Assignment= 30 min</p> <p>Spay procedure Quiz=30 min</p> <p>Rounds=1 hr</p>
Week 10	22-26 Mar	<p>Tues 23rd: Spay Rounds 1 (whole class) Zoom Live</p> <p>Thurs 25th: Mock Spay 12 students</p>	Dr. Lanza Dr. Turitto Dr. Kalasi	<p>Sun 28th: Spay Medical Records 1 Due (all groups)</p> <p>Sun 28th: Surgery Reports due for students who completed mock spay this week</p>	<p>Rounds= 1hr</p> <p>Medical Records= 2 hr (group assignment)</p> <p>Mock Spay= 1 hr (12 students)</p> <p>Sx Report (12 students) = 1 hr</p>
Week 11	29 Mar- 2 Apr	<p>Tues 30th: Spay Rounds 2 (whole class) Zoom live 1 hr</p> <p>Thurs 1st April: Mock Spay 12 students</p>	Dr. Lanza Dr. Turitto Dr. Kalasi	<p>Sun 4th: Spay Medical Records 2 Due (all groups)</p> <p>Sun 4th: Surgery Reports due for</p>	<p>Rounds= 1hr</p> <p>Medical Records= 2 hr (group assignment)</p> <p>Mock Spay= 1 hr (12 students)</p>

				students who completed mock Spay this week	Sx Report (12students) = 1 hr
Week 12	5-9 Apr	Tues 6th: Spay Rounds: Special Topics (whole class) 1hr Zoom live Thurs 8th: Mock Spay 12 students	Dr. Lanza Dr. Turitto Dr. Kalasi	Sun 11th: Special Topics Quiz 2 Due Sun 11th: Surgery Reports due for students who completed mock spay this week	Rounds= 1hr Special Topics Quiz 2= 15 min Mock Spay= 1 hr (12 students) Sx Report (12 students) = 1 hr
Week 13	12-16 Apr	Tues 13th: Mock Spay 12 students Thurs 15th: Mock Spay 12 students	Surgery Instructors	Sun 18th: Surgery Reports due for students who completed mock spay this week	Mock Spay= 1 hr (24 students) Sx Report (24 students) = 1 hr
Week 14	19-23 Apr	Tues 20th: Mock Spay 12 students Thurs 22nd: Mock Spay 12 students	Surgery Instructors	Sun 25th: Surgery Reports due for students who completed mock spay this week Sun 25th: Anesthesia Spay Case assignment due	Mock Spay= 1 hr (24 students) Sx Report (24 students) = 1 hr
Week 15	26-30 Apr	Tues 27th Mock Spay 12 students Thurs 29th Mock Spay 7 students and make up if needed	Surgery Instructors	Sun 2nd: Surgery Reports due for students who completed mock spay this week	Mock Spay= 1 hr (24 students) Sx Report (24 students) = 1 hr
Week 16	3-7 May	Make up spays Peer Evaluations		Peer Evaluations	Peer Evals= 30 min
Week 17	10-14 May	FINALS WEEK			

XIII. Grading and assessment policy, and grading rubrics

Assignment/Assessment	Grade %
Mock surgeries	35%
Anesthesia	30%
Medical records (SOAPS)	15%
Surgery video assessment	5%
Surgery reports	5%
Special topics perioperative assessment	5%
Peer Evaluations	5%

Below is the detailed description of the grading:

- 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 Assessments (Castration Video and Spay Video) (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 (x4): 15%**
 - SOAPS will be a group submission due Sunday after rounds.
 - There will be 2 for Castrations and 2 for Spays. The first one is meant to be a "training SOAP" 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. Special Topics Perioperative Case Assessments (x2): 5%**
 - Short answer quizzes to be submitted in alignment with special topics rounds. Due date specified in schedule
- 6. 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 (2%) and final (3%) weeks.
 - The final peer evaluation grade will include grades from a rubric completed by all members of one group, when preparing for their mock spay. It is meant to be a learning and growth exercise attempting to give and receive peer feedback.

- 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

>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

- 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
- 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

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.

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 (Sakai quiz/test or Examsoft) 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) 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.
- Make-up assignments/assessments are at the discretion of the course director

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 (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):

Appendices:

1. Alignment of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs)-Detailed Description

Course Level Outcome	SGU SVM Program Level Outcome
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1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories

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.

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.

PLO 4 Explain the relationship between disease processes and clinical signs.

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.

PLO 7 Evaluate and analyze normal versus abnormal animal behavior.

PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.

PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.

PLO 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.

PLO 11 Understand and apply basic principles of research and recognize the contribution of research to all aspects of veterinary medicine.

PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.

B. Core Professional Attributes

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.

PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.

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.

PLO 24 Analyze, design and execute appropriate plans for medical 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, food safety, biosafety and biosecurity.

<p>2. Describe and perform a Castration and a Spay procedure in a model as a surgeon</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>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>B. Core Professional Attributes</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>C. Core Clinical Competencies (Skills)</p> <p>PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management.</p>
<p>3. Describe sedation and or anesthesia in a model patient for Castrations and Spays</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>

PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.

PLO 7 Evaluate and analyze normal versus abnormal animal behavior.

PLO 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.

PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health.

PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.

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 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.

PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.

C. Core Clinical Competencies (Skills)

PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.

PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management.

<p>4. Demonstrate proficiency in medical record writing and keeping</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 8 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>B. Core Professional Attributes</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 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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	<p>PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.</p> <p>C. Core Clinical Competencies (Skills)</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>PLO 27 Demonstrate and model effective client communication and ethical conduct.</p>
<p>5. Professionally perform and contribute in a team environment</p>	<p>A. Core Medical Knowledge</p> <p>PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.</p> <p>B. Core Professional Attributes</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>

Appendix 2: Mock Castration Grading rubric

(To be added at the beginning of term)

Appendix 3: Mock Spay grading rubric

(To be added at the beginning of term)

Appendix 4: Peer assessment Rubric

(To be added at the beginning of term)



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT: Small Animal Medicine and Surgery

Introduction to Clinical Rotations (2 credits)

SAMS 528 (TERM 6)

Spring 2021

I. Course Faculty and Staff Information

Dr. Kerri Nigito, DVM, CPH, MPH, DABVP (Food Animal Practice),
Clinical Instructor

Large Animal Medicine and Surgery Department

Telephone: 444-4175 Ext: 3839

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Office Location: LARF (behind the SAC)

Office hours: by appointment on Zoom

Dr. Wayne Sylvester, DVM, MSc

Associate Professor

Medical Director- Small Animal Clinic

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Office Location: Small Animal Clinic

Office Hours: By appointment

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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

Current 6th 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 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 513, SAMS 514, SAMS 515, SAMS 518, SAMS 520, SAMS 522, SAMS 526, SAMS 527) is considered appropriate material.

V. Recommended resources

Textbook of Veterinary Diagnostic Radiology	D. Thrall	6th ed., 2013
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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 (Elsevier)	Tobias, K., et al.	2 nd ed., 2017
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. 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

camera recording capabilities, scrubs, white coats, surgical instruments,

VIII. Course rationale (catalogue course description)

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 the preceding 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

<p>Clinical Practice Experiences (small and large animal skills)</p>	<ol style="list-style-type: none"> 1. Perform 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, fecal flotations. 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.
<p>Radiology (online)</p>	<ol style="list-style-type: none"> 11. Demonstrates adequate assessment of radiographic quality

	<p>(positioning, centering, exposure, artefacts).</p> <p>12. Appropriately interprets radiographs/sonograms.</p> <p>13. Demonstrates adequate ability to form an appropriate (list of) differential diagnosis(es).</p> <p>14. Recommends the appropriate further investigations / diagnostics.</p> <p>15. Completes an online case presentation; including questions.</p>
Ruminant Preparation Module (online)	<p>16. Identify sites to administer IV and IM injections</p> <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, 12:00pm-1:00pm AST	1 lecture hour
Week 2	Zoom Introduction lecture (all students) Wednesday, 12:00pm-1:00pm 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: 11:00pm AST
Week 1 - 14	Clinical Pathology Module	3.5 lecture hours
Week 1-14	Parasitology Module	3.5 lecture hours
Week 9-13	Radiology Assignment (submit on Sakai)	1 lecture hour Due: 11:00pm AST
Week 1-14	Small and Large Animal Clinical Experiences	16 lecture hours (~ 9-10 days)
Total		30 lecture hours

The course schedule should be made as a weekly schedule, broken down into lessons, assignments, and assessments per week.

By week: list lecture/lab/topic titles, name of lecturer/instructor, and associated assignments/assessments due that week. ****Please include the time students are expected to spend on each assignment, assessment, and length of each lecture (Panopto, Zoom).*

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 = 2-3 lab hours = 2 self-study or assignment hours.
- 1 mandatory Zoom class meeting hour = 1 lecture hour.

- 1 assessment hour = 1 lecture hour.
- Optional Zoom hours are equivalent to office hours = 1 per week maximum, not factored into credit hours as they are optional.

Distribute the course content evenly through the teaching weeks of the term (this applies to courses that run through the whole term, may not apply to all courses/selectives).

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.

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

Grading scale

Types of assessment (include both formative (low-stakes: <10% of overall points) and summative (high-stakes: >10 of overall points) assessment methods such as quizzes, exams, laboratory practical, group discussions/assignments, minute papers, in class short assessments, etc), weights and criteria.

Grading criteria must be stated unequivocally and be as objective as possible and equitable. This is of particular importance where grades/points will be awarded for subjective issues like “professionalism” and/or “participation”, etc. The AVMA COE Standard 9 specifies that the assessment shall be “a fair and equitable assessment of student progress. The grading system for the college must be relevant and applied to all students in a fair and uniform manner.”

If subjective grading is used in whole or in part for the course, a rubric must 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.

The rubric 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.

For courses assessing clinical skills the following statement should be included here:

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).

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 two week experiences by reading the syllabus and resources and completing the preparation modules provided as well as complete all assignments.

XVI. 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.

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

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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: Attendance of lecture is recommended.

Attendance of radiology rotations Zoom sessions is mandatory.

Clinical/Laboratory session attendance policy: Attendance of radiology rotations Zoom sessions is mandatory.

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

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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) 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

Not applicable

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 (if applicable):

Course Schedule

CLOs

LLOs

PLO to CLO mapping

Rubrics

Radiology Assignment Rubric

Radiology Rubric	Meets expectations consistently (4)	Meets expectations most of the time (3)	Occasionally meets expectations (2)	Does not meet expectations (1)
	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
	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
	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
	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
	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
	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.

Content

6 points

1. All relevant information for the case is included:
 - 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



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

SMALL ANIMAL MEDICINE AND SURGERY DEPARTMENT

CLINICAL REASONING IN VETERINARY MEDICINE (2 credits)

SAMS 530 TERM 6

SPRING 2021

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: *Clinical Reasoning in Small Animal Medicine*; Madison, Volk and Church, 2015

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

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
<p>Successfully utilize the clinical reasoning approach when tackling veterinary clinical cases by way off:</p> <ol style="list-style-type: none"> 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 	<p>PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge 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 6Apply 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 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 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.</p> <p>PLO 20 Execute a comprehensive patient diagnostic plan (differential diagnosis list) and demonstrate problem solving skills to arrive at a diagnosis.</p> <p>PLO 21 Create comprehensive treatment plans including prognosis.</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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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 by the due dates.

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 XVIII may result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.

- B. Course Assignments:** Students will be responsible for completing a specific post case discussion task weekly (8 total). In addition, students will complete peer evaluations on the weekly task (8 total). Each weekly task should take the student 45 minutes to one hour to complete. Peer evaluations using a rubric should take approximately 15-30 minutes to complete.

See course schedule for brief description of weekly post discussion assignments.

Open dates for weekly task are Tuesdays after the lecture. The task is due and will close at 11:55pm AST on Friday of that week and the peer assessment is due and will close the following Monday at 11:55pm AST. Please keep this in mind throughout the course.

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 lectures are attended/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 turn 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 asked 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 due to externship participation 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 by Thursday 11:55pm AST to ensure that the assigned task for the week can be completed on time.

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 course director and 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)

Spring 2021 SAMS 530 CRVM Schedule

Week	Dates	Lectures/Content	Assigned Task	Faculty	Modality Zoom 10 Lectures (1 hour)
1	Jan 11-17	No Content	-	-	-
2	Jan 18-24	No Content	-	-	-
3	Jan 25-31	No Content	-	-	-
4	Feb 1-7	The Clinical Reasoning Process and its Importance in Vet Med	None	Dr. Adria Rodriguez	Tuesday 12-1pm AST
5	Feb 8 -14	Giving Productive Feedback/Peer Evaluation Process	None	Dr. Adria Rodriguez	Tuesday 12-1pm AST
6	Feb 15 -21	Small Animal Oncology Case	Communication to the owner re: treatment options	Dr. Annie Corrigan	Tuesday 12-1 pm AST
7	Feb 22-28	Large Animal (Equine) Theriogenology Case	Post-Treatment Complications and their Management	Dr. Firdous Khan	Tuesday 12-1 pm AST
8	Mar 1-7	Anesthesia Case	Anesthetic Plan	Dr. Flavia Restitutti	Tuesday 12-1 pm AST
9	Mar 8-14	Small Animal Dentistry Case	Discharge Instructions	Dr. Francesca Ivaldi	Tuesday 12-1 pm AST
10	Mar 15-21	Small Animal Internal Medicine Case	Discharge Instructions	Dr. Talia Guttin	Tuesday 12-1 pm AST
11	Mar 22-28	Large Animal (Alpaca) Internal Medicine Case	Treatment Plan	Dr. Stacey Byers	Tuesday 12-1 pm AST
12	Mar 29 – Apr 4	Small Animal Neurology Case	Discharge instructions	Dr. Jill Narak	Tuesday 12-1 pm AST
13	Apr 5-11	Large Animal (Goat) Internal Medicine Case (Cardiology/Radiology)	Discharge Instructions and Owner Communication (Prognosis)	Dr. Kerri Nigito	Tuesday 12-1 pm AST
Course Finished on Week 13					



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY
ADVANCED CARDIOLOGY SELECTIVE SYLLABUS (1 credit)
SAMS 531 TERM 6 (Term 1-6)
SPRING 2021

I. **Course Faculty and Staff Information**

Course Director: Anne Corrigan MS DVM MS DACVIM (SAIM), Professor.

Email: acorrigan@sgu.edu

Office Location: Cassia Bldg. 2nd floor, office phone #3441

Executive Secretary: Mrs. Frances Emmanuel, femmanuel@sgu.edu

Class Office hours via Zoom: Tuesdays 12pm AST-2 pm AST, from weeks 8- 12 (March 2nd - March 30th) 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. There will be SYNCHRONOUS Zoom sessions on weeks 8-12. They will be recorded. You must participate in the zoom sessions, If you must miss a synchronous zoom you will have to make up the participation points in the forums. It is highly recommended that you attend the synchronous sessions.

III. **Prerequisite and/or co-requisite courses** Successful completion of the first 5 terms of the DVM curriculum at SGU.

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.

JAVMA ECG's of the Month

V. Recommended resources

Videos and articles will be posted on SAKAI.

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

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 Learning Outcomes

Upon successful completion of the 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 Learning Outcomes

SAMS 531 LLO's

1. Recognize and utilize appropriate terminology, for both veterinary professionals and clients
2. Evaluate a current ACVIM Cardiology research abstract and construct a professional presentation
3. Evaluate a current ECG case report and construct a professional presentation
4. Discuss CPR, crash carts and appropriate teamwork
5. Interpret and discuss advanced ecg's, and be able to calculate the MEA
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
7. Discuss echocardiography skills
8. Understand and use appropriate scientific terms, abbreviations, and echocardiography views
9. Practice auscultation skills
10. Discuss signalment, clinical signs, relevant history, auscultation findings and diagnostic testing to diagnose a variety of cardiac diseases
11. Create a personal statement reflecting on the topics discussed.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course Learning Outcome	SGUSVM Program Learning Outcome
1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for cardiology patients including emergency and critical care considerations.	1 2 3 4 7, 25
2. Use relevant clinical data to create differential diagnosis list for cardiac conditions.	1, 2, 3, 5, 6, 20
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral to diagnose a disease.	1 2 3 5 6, 20, 21, 25
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for	3, 4, 5, 6, 21, 26

diseases, including a consideration of antimicrobial resistance.	
5. Recognize emergency presentations and considerations for cardiology patients.	1, 2, 3, 4, 5, 6, 25
6. Formulate appropriate client communications regarding history, diagnostics, treatment and prognosis.	12, 19, 27
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in workspace, and select patients for isolation.	18, 26
8. Discuss CPR on a model and discuss important patient considerations for appropriate CPR and crash carts.	1,2, 5, 11, 14, 21, 25, 28
9. Calculate the MEA.	1, 2, 4, 6, 11, 23
10. Watch and discuss a cursory cardiac evaluation with the SAC ultrasound machine, be able to discuss the different views and measurements.	1, 2, 3, 4, 6, 11, 20
11. Practice auscultation skills.	1, 2, 3,
12. Practice professional presentations and EBVM	6, 11, 12,15, 28

XII. Course Schedule

Week	ZOOM DAYS	ACTIVITES	Expected time	Assessment
Week 8 1st week	March 2nd 12-2 ZOOM	<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:</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>2 hours</p> <p>1 hour</p> <p>5 min</p> <p>5 min</p> <p>5 min</p> <p>5 min</p> <p>2 hours</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	March 9 12-2 ZOOM	<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 forum discussion.</p> <ul style="list-style-type: none"> • Murmur Forum: Research a murmur and create a forums post about the possible ruleouts. • ASK a question on anothers post. • Arrhythmia Forum: My favorite arrythmia and WHY? 	<p>20 minutes MAX!!</p> <p>30 min</p> <p>15 min</p> <p>5 min</p> <p>15 min</p>	<p>5 Points</p> <p>5 points</p> <p>5 points</p>

		<p>Zoom: Lecture and Laboratory: MEA and Advanced ECG's</p> <p>Discussion:</p> <ul style="list-style-type: none"> Advanced ECG lab participation Forum posts 	<p>2 hours</p>	
<p>Week 10 3rd week</p>	<p>March 16 12-2 ZOOM</p>	<p>Readings: ACVIM Canine and Feline Consensus statements</p> <p>To Do: prepare your abstract presentation, post on Forums, LIVE ZOOM presentation</p> <p>Forums post: ACVIM Consensus statements what I had to look up/interesting points</p> <p>Zoom: Presentations Abstracts (grading rubric)</p> <p>Discussion: you MUST ask a question of each presentation. This is to promote discussion and understanding</p>	<p>2 hours</p> <p>2 hours</p> <p>5 min</p>	<p>5 points</p> <p>Abstract Presentation: 15 points</p> <p>Discussion Question: 5 points</p>
<p>Week 11 4th week</p>	<p>March 23 12-2 ZOOM</p>	<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>Forums post: What I had to look up/Interesting points of the EPIC study</p> <p>Zoom: Presentations ECG of the Month</p> <p>Discussion: ALL must ask a question of the presenter!!!!</p>	<p>1 hour</p> <p>2 hours</p> <p>5 min</p> <p>2 hours</p>	<p>5 points</p> <p>ECG presentation: 15 points</p> <p>Discussion Question: 5 points</p>
<p>Week 12 5th week</p>	<p>March 30 12-2 ZOOM</p>	<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>Lecture: Echo Teaching Video</p>	<p>20 min MAX</p> <p>2 hours</p> <p>1 hour</p>	<p>Crash Cart homework: 10 points</p> <p>Personal Reflection: 5 points</p>

		<p>Zoom: FINAL EXAM questions Discussion!!! last meeting to catch up and talk about clinical year</p> <p>Discussion: crash cart article, Echo chapter, Heart Sounds</p>	2 hours	
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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 total points:

- Presentations: 30 Points
- Discussion Questions: 10 points
- Crash Cart Assignment: 10 points
- Zoom/Forum discussions: 45 points
- Self Reflection: 5 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 medical absence, you will have until the last day of the term to complete assignments, you will lose points for late 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

Please read all assigned readings ahead of time, this course is primarily a discussion course so Zoom participation will be necessary. Zoom sessions will be used for your presentations, be attentive and polite to the other speakers. If you must miss a

zoom you can make up the participation points in the forums. You must deliver your presentations live on zoom.

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, 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/Participation Policy

Students are expected to be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. Employment is not an excusable absence. Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 and active participation in ALL zoom sessions is expected. Attendance, engagement, and participation WILL be recorded at every academic activity,

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

Students who fail to attend an examination (Sakai quiz/test or Examsoft) 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.

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.

No exams using Examsoft will be utilized in this course.

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.

Engagement/Professionalism Rubric:

Criteria	Expected	-5%	-10%	-15%
Panopto/Zoom Lectures Checklist	Attends all Zoom lectures.	Miss one zoom lecture	Miss 2 zoom lectures.	Miss more than 2 Zoom lectures.
Forums Posts	Completes all the forums discussions tasks and follows all directions.	Miss one forums discussions tasks and/or follows most directions.	Misses 2 of the forums discussions tasks and follows most to some directions.	Misses > 2 forums discussions tasks or doesn’t follow directions.
Assignments	Completes all the course Assignments for the term in a timely manner and	Completes most (90%) of the Assignments for the term in a timely manner and	Completes some (70-89%) of the Assignments for the term in a timely manner, and/or shows	Completes less than 70% of the Assignments for the term in a timely manner, or shows little

	shows integration of thought of course material.	shows integration of thought of course material.	partial integration of thought of course material.	integration of thought of course material.
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Presentation Grading 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:				



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

SPRING 2021

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor

Email: tguttin@sgu.edu; Office Hours via Zoom by appointment.

Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.

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. 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. 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

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 Learning 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 Learning 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 out of 100 points, based on:

- Assignments X4 (10 points each) = 40 points
 - o A rubric and/or model answer will be provided for each assignment
- Quizzes X3 (10 points each) = 30 points
- Forum discussion on ethics in critical care = 10 points
- Professionalism and Engagement = 20 points
 - o Please see Professionalism and Engagement Rubric, Appendix XXI
 - o Note that late assignments/quizzes will be accepted, but will be deducted points on the professionalism grade

This is a completely asynchronous course devised with your flexibility in mind. You may work ahead and this is recommended. **Due dates are fixed, and designed for you to work ahead at your own pace. 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.

XIV. Recommended study strategies

The most important aspect to approaching this coursework is pacing yourself and staying on schedule. Make a schedule for yourself at the beginning of the term, and stick to it. The material in this course will be integrating much of what you have learned in other courses, so get out your old course notes and refresh your memory!

XV. Instructor's expectations of the student

Students are expected to create and stick to a schedule on their own. This course is really driven by your 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 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. **Employment is not an excusable absence.** Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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 examinations MUST inform the Course Director (tguttin@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

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 Learning 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 PLOs:

Course Learning Outcomes	SGU-SVM Program Learning Outcomes
Course Learning Outcome 1	6, 11, 15, 16, 20, 26, 28
Course Learning Outcome 2	1, 2, 3, 4, 5, 6, 7, 10, 20, 21, 22, 23, 24, 25, 26, 27
Course Learning Outcome 3	4, 5, 6, 10, 15, 16, 21, 26
Course Learning Outcome 4	6, 7, 8, 12, 13, 14, 15, 16, 17, 19, 27

Lesson Learning Outcomes

Point-of-Care Ultrasound:

1. Define a focused ultrasound exam and describe its utility in the ER setting
2. Describe and practice the AFAST3, TFAST3, and VetBlue exam landmarks
3. Apply the AFS scoring system to a patient and understand the utility of serial AFS scores
4. Compare and contrast the utility and limitations of each type of exam
5. Reinforce basic knowledge of ultrasound with regard to fluid, tissue, and air echogenicity and artifact.

Hemodialysis:

1. Identify the indications for dialysis
2. Discuss dialysis complications and prognosis
3. Describe the function of dialysis and the different methods of performing dialysis

Cardiac versus respiratory case:

1. Apply previous knowledge from core SVM coursework in cardiac and respiratory medicine to emergency scenarios
2. Use evidence-based veterinary medicine resources to create a diagnostic and treatment plan for a respiratory distress case.

Central Venous Catheters:

1. Practice a situation where a medical procedure must be learned from a textbook, article, and/or video resources
2. Identify the indications and complications of central venous catheters in small animal patients
3. Understand the Seldinger technique and the application of this technique in multiple settings

Ethics of Critical Care:

1. Identify the moral and ethical conundrums of emergency and critical care medicine
2. Discuss these moral and ethical issues with classmates, exhibiting professionalism and communication skills
3. Reflect on the discussions

Crash Carts and CPR:

1. Review RECOVER guidelines
2. Utilize evidence-based resources to design a crash cart
3. Practice using the RECOVER guidelines for medical math

Endocrine Emergencies:

1. Identify a patient with an endocrine emergency based on signalment, relevant history, and PE findings
2. Triage and assess affected organ systems for each endocrine emergency, including prioritizing emergency treatment
3. Discuss the prognosis with the owners

Septic Patient Care:

1. Identify a patient with sepsis based on signalment, relevant history, and PE findings
2. Discuss emergency diagnosis, treatment, and monitoring of septic patients.
3. Discuss the prognosis of sepsis with the owners

Neurologic emergencies:

1. Utilize evidence-based resources to answer questions about neurologic emergencies

Advanced Fluid Therapy:

1. Identify patients that may have special fluid therapy considerations (ie. hypoalbuminemia, vasculitis, AKI)
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 Professionalism Rubric:

Professionalism= 20 points

Criteria	Did not meet expectations
Punctuality for assignments, quizzes, forums	Failed to submit assignments or quizzes on time unless excused by SVM DOS. , Deduction of 2 points for each assignment/quiz that is late.
Appropriate professional communication (example: excused late assignments/quizzes)	If a student did not email a faculty member regarding an excused lateness in a timely manner, or did not respond to a faculty email: Deduction of 2 professionalism points.
Other Professionalism (optional Forums posts, Zoom office hours attendance, completing assignment revisions when asked)	If a student was asked to resubmit an assignment, and the student did not do so: Deduction of 2 professionalism point.

Course Schedule SAMS 536 ECC Selective Spring 2020: *This is a RECOMMENDED schedule, but nothing is fixed except for due dates. This course is completely asynchronous, to allow for flexibility with your clinical rotation schedule. You can work ahead, even complete the whole course in the first week (except the forums posts). Please note that only excuses verified by the Dean of Students will be accepted.*

Recommended weekly schedule	Topic	To Do For That Topic	Lecture hour eqivs.
Week 2 Jan 18-24	Intro to the course, Point-of-care ultrasound in the ER	1. Panopto lecture: Point-of-care ultrasound in the ER. 2. YouTube videos embedded in lecture. 3. Sakai Quiz #1	2
Week 3 Jan 25-31	Hemodialysis lecture + quiz	1. Panopto lecture: Hemodialysis. 2. Sakai Quiz #2	2
Week 4 Feb 1-7	Respiratory distress case	1. Respiratory Case Article: https://todaysveterinarypractice.com/approach-to-respiratory-distress-in-dogs-and-cats/ 2. Sakai Assignments #1: use the article to make an emergency triage treatment plan and a diagnostic plan to differentiate respiratory from cardiac causes of respiratory distress.	1
Week 5 Feb 8-14	Crash Cart Homework	1 & 2. Sakai Assignments #2: Crash Cart Homework with article + assignment	1
Week 6: Due dates for Sakai quiz 1 & 2, and Sakai assignments 1 & 2 is Saturday February 20th			
Week 7 Feb 22-28	Central Venous Catheters	1 & 2. Sakai Resources: Central Venous Catheter folder: Video & article. 3. Sakai quiz #3.	1
Week 8 March 1-7	Critical Care Ethics Discussion on FORUMS, part 1	1. Mini-Panopto lecture: Critical Care Ethics. 2. Sakai Resources: Read 1 of the 2 articles posted. 3. First Forums Post: Answer 3 questions on Sakai Forums by March 6th (or earlier).	2
Week 9 March 8-14	Advanced fluid therapy: Fluid conundrums and CRI calculations.	1. Panopto Lecture: AKI and Fluid Conundrums. 2. 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: 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:	2

		https://www.atdove.org/video/constant-rate-infusion-cri-preparation	
Week 10 & 11 March 15-27	Neurologic Emergencies Critical Care Ethics Discussion on FORUMS, part 2	1. Sakai Assignments #3: Neurologic Emergencies article + assignment 2. Second Forums Post: Read and reply to 2 classmates' posts by March 27th.	1
Week 11: Due dates for Sakai Quiz 3, Sakai Assignment 3, and Forums Posts is Saturday March 27th			
Week 12 March 29- April 4	Septic Cat	Panopto lecture: Septic Cat Sakai Assignments #4 (pick this OR endocrine ER treatment sheet)- submit treatment sheet.	1 (or 2)
Week 13 April 5-11	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 14 April 12-18	WEEK 14: Due dates for Sakai Assignment 4 is Saturday April 17th		
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

Grenada, West Indies

Small Animal Medicine & Surgery Department

SMALL ANIMAL CLINICAL NUTRITION (1 credit)

SAMS 537 TERM 6

SPRING 2021

I. Course Faculty and Staff Information

Course Director: Catherine Werners-Butler, DVM, PhD, DECEIM, MRCVS

Professor (Chair LAMS)

Email: cwerners@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. **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 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 Learning Outcomes**

See Appendix 1.

X. **Lesson Learning 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
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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

Course assessment:

Topic quizzes (2% per quiz)	18%
Topic assignments (10% each)	20%
Nutrition case assignment	17%
Course participation	10%
Final exam	<u>35%</u>
	100%

Topic quizzes (18 pts): Students will be asked to complete one post-topic quiz consisting of 3 MCQs per lecture topic. There will be a total of 9 quizzes. These will be posted on Sakai on Mondays in Quizzes & Tests and must be completed by Sunday of that week.

Topic assignments (20 pts): 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 of 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 (17 pts): Students will select a specific condition/disease where nutrition plays a role in its management *that was not covered in the course*. Based on the selected condition/disease, the student will complete a nutritional recommendation (using the template provided).

The assignment will consist of:

- Research selected topic and discussion of the role of nutrition in the given disease/condition
- Development of a fictitious case including patient signalment, history and diagnostic work-up that is appropriate for the selected disease/condition
- Preparation of a nutritional recommendation including selection of an appropriate therapeutic diet, calculation of DER and daily feeding recommendation (as well as any other nutritional recommendations/strategies that may be relevant).

Course participation (10 pts): Student engagement and participation in selective courses is important to maximize the student's educational experience. Attendance to virtual lectures is *mandatory*. Students encountering scheduling conflicts should communicate with the Course Director via email prior to the anticipated lecture. Student participation will be based on:

Attendance **5 pts**

Participation in forums **5 pts**

Final exam (35 pts): The final exam will consist of multiple choice questions and is based on all material presented in the course.

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. All topics discussed are examinable material.

XV. Instructor's expectations of the student

Student attendance and participation in all live lectures is expected based on the nature of the course and relatively small class size. The live interactive nature of these sessions is designed to enhance the student learning experience. It is expected that assessments and assignments will be completed within the given time frame. Students should 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 both of 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 be available during the standard 8-5am AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered. *Employment is not an excusable absence.* Although attendance, engagement, and participation may not be recorded at every academic activity, attendance, engagement, and participation is graded for mandatory sessions. 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.

In SAMS537 attendance to all live lectures is mandatory and participation in other class activities such as discussions within Forums is required. Please see Section XII for course participation grading policy.

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. Catherine Werners-Butler, cwerners@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

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)
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
Discuss the limitations of the Guaranteed Analysis including potential issues with the way that nutrients are measured

Convert nutrient concentrations in foods to a calorie basis and compare between different products
Explain what makes a veterinary therapeutic diet different from an over-the-counter diet in terms of both regulatory and practical aspects
Alternative Diets
Discuss the pros and cons of homecooked diets
Perform a basic evaluation of a homecooked pet food recipe
Discuss pros and cons of raw diets
Myths & Client Communication
Discuss with clients why therapeutic diets are necessary in specific cases
Describe where to obtain reliable and science-based nutrition information regarding diet and nutrition
Critical Care Nutrition
Identify cases where nutritional support is appropriate
List pros and cons of various forms of assisted feeding including common types of feeding tubes
Select a diet and calculate feeding amounts for a specific patient
GI Disease
Describe the nutritional approach to pets with chronic GI disease
Explain the purpose of and outline the steps of a diet elimination trial for adverse food reaction
Obesity Management & Prevention
Select an appropriate diet for weight loss for a specific pet
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
Body condition scoring
Describe how to assign body condition scores and muscle condition scores
Estimate ideal body weight based on body condition scoring and morphometric measurements
Urolithiasis
Outline the critical nutrients and strategies for calcium oxalate, struvite, and urate stones

Select an appropriate diet for a patient with a history of uroliths
Diabetes mellitus
Explain general nutritional strategies for management of diabetes
Contrast the nutritional management of diabetes in cats vs dogs

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

SGU Week #	Date*	Topic	Assignment	Course hours
8	March 2nd 1-3pm AST	Introduction & Pet food math Alternative diets		2.5
9	March 9th 1-3pm AST	Nutritional myths Critical care		2.5
10	March 16th 1-3pm AST	Obesity & body condition scoring	Obesity assignment (Due: Sunday March 21st)	2.25
11	March 23rd 1-2pm AST	Diabetes mellitus		1.25
12	March 30th 1-3pm AST	Intestinal disease	Intestinal disease assignment (Due: Sunday April 4th)	2.25
13	April 6th 1-2pm AST	Urolithiasis: Intro & struvite uroliths		1.25
14	April 13th 1-3pm AST	Urolithiasis: Other urolith types	Final course assignment (Due: Sunday April 18th)	2.25
15 (April 20th)	1-2pm AST	FINAL EXAM		1

* All lectures will be live streamed on Zoom at 1pm AST. Recordings will be posted thereafter on Sakai.



St. George's University

SCHOOL OF VETERINARY MEDICINE

Grenada, West Indies

SMALL ANIMAL MEDICINE AND SURGERY

SHELTER MEDICINE SELECTIVE (1.0 Credit)

SAMS 539 (TERM 6)

SPRING 2021

I. Course Faculty and Staff Information

Course Directors:

Ms. Elizabeth Peach
LVT/CVT, Demonstrator IV
epeach@sgu.edu

and

Dr. Marta Lanza-Perea
DVM, MsC, Associate Professor
mperea@sgu.edu

Office: Ray and Sis Hall, Ground Floor, VSL

Office: Cassia building, 2nd Floor

Office Hours/Communication:

- General course communication will occur within Sakai Email or Sakai Announcements.
- Please utilize the Weekly Lessons tool in Sakai for a detailed plan of the week, including lectures, assignments/assessments, and due dates., and student time commitment guidelines.
- Course Directors are available via email, response time within 24-48 hours.
- Zoom Open Office Hours will be held every Monday from 2 PM-3 PM AST or by appointment.

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, Weekly Lessons, Calendar, Resources, Assignments, Tests and Quizzes, and Forums

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.
- Fear Free Shelter Program Website <https://fearfreeshelters.com/>
- 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. These additional resources are meant as supplemental material or additional information for students particularly interested in that module. These “Additional Resources/References Recommended” are not required readings.

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.asPCA.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. 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

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 Learning 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 Learning Outcomes

Lecture/Lab	Lesson Learning Outcomes
1. Shelter Animal Physical Health and Management	<ul 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.

	<ol style="list-style-type: none"> 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. 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. 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 Fear 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>3. Disaster Preparedness</p>	<ol style="list-style-type: none"> 1. Name different types of disasters, including natural and man-made. 2. Define the term co-location shelter and explain the concept. 3. Recognize the importance of disaster preparedness.

	<ol style="list-style-type: none"> 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>4. 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>5. 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. 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>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.

	<ol style="list-style-type: none"> 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. 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, owned dogs, community cats, and free roaming dogs, based on current resources/evidence.

	<ol style="list-style-type: none"> 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. 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 management of surgical complications in a HQHV Spay and Neuter clinic setting, pre-operatively, intra-operatively, and post-operatively. 6. Discuss AFAST Abdominal Ultrasound Techniques for Hemoabdomens. 7. Discuss autotransfusion protocols and practical application of the technique. 8. Discuss anesthetic protocol considerations in HQHV Spay and Neuter clinics. 9. Review CPR/Emergency Protocols. 10. Discuss identification techniques for spayed/neutered patients. 11. 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

<p>XII. Course Level Outcome (CLOs)</p>	<p>SGU SVM Program Level Outcome (PLOs)</p>
<p>CLO 1. Discuss current topics and emerging trends in the field of shelter medicine.</p>	<p>A. Core Medical Knowledge PLOs 1,2,3,4,5,6,7,8,9,10,11</p> <p>B. Core Professional Attributes PLOs 12,13,15,17,18,19</p> <p>C. Core Clinical Competencies (Skills) PLOs 22,23,24,25,26,27,28</p>
<p>CLO 2. Utilize resources to provide appropriate and humane care for shelter animals and communities.</p>	<p>A. Core Medical Knowledge PLOs 1,2,3,4,5,6,7,8, 9,10,11</p> <p>B. Core Professional Attributes PLOs 12,13,14,15,17,18,19</p> <p>C. Core Clinical Competencies (Skills) PLOs 20,21,22,23,24,25,26,27,28</p>
<p>CLO 3. Illustrate the variety of career paths associated with shelter medicine.</p>	<p>A. Core Medical Knowledge PLOs 7,8,9,11</p>

	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
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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

- **All Live Sessions will be held on Mondays from 1-2 PM AST via Zoom. All lectures will be recorded, and attendance is not mandatory.**
- **All Assignments will be due on Fridays by 5 PM AST. Please see the schedule below or calendar in Sakai for dates.**

SAMS 539 Spring 2021 Course Schedule

WEEK	DATE	LECTURE/LAB/MODULE	LECTURER/INSTRUCTOR	ASSIGNMENT/ASSESSMENT	STUDENT TIME COMMITMENT
Week #1	Jan. 11- Jan. 15 (Monday Live 1-2 PM AST)	Shelter Animal Physical Health and Management	Dr. Marta Lanza and Ms. Liz Peach	None	Lecture=1.0 Hour
Week #2	Jan. 18- Jan. 22 (Monday Live 1-2 PM AST)	Shelter Animal Behavioral Health	Dr. Melissa Bain	1. Forum Post (Due Jan. 22) 2. Fear Free Shelters Module 1 (Due Jan. 22)	1. Lecture=1.0 Hour 2. Forum Post=30.0 Minutes 3. Fear Free Shelters Module 1=1.0 Hour
Week #3	Jan.25- Jan. 29 (Monday Live 1-2 PM AST)	Disaster Preparedness	Ms. Consie von Gontard	Fear Free Shelters Module 2 (Due Jan. 29)	1. Lecture=1.0 Hour 2. Fear Free Shelter Module 2=1.0 Hour

Week #4	Feb. 1- Feb. 5 (Monday Live 1-2 PM AST)	Models of Sheltering and Population Statistics	Dr. Jennifer Bolser	Short Answer Assignment for Lectures from Weeks 2, 3, and 4 (Due Feb. 5)	1. Lecture=1.0 Hour 2. Short Answer Assignment=30.0 Minutes
Week #5	Feb. 8- Feb. 12	Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics	Dr. JoEllen Bruinooge	Fear Free Shelters Module 3 (Due Feb. 12)	1. Lecture=1.0 Hour 2. Fear Free Shelters Module 3=1.0 Hour
Week #6	Feb. 15- Feb. 19	Management of Feline Overpopulation in Communities	Dr. Katherine Polak	Short Answer Assignment for Lectures from Weeks 5 and 6 (Due Feb. 19)	1. Lecture=1.0 Hour 2. Short Answer Assignment=30.0 Minutes
Week #7	Feb. 22- Feb. 26	No Lecture	NA	Fear Free Shelters Module 4 (Due Feb. 26)	1. Fear Free Shelters Module 4=1.0 Hour
Week #8	March 1- March 5 (Monday Live 1-2 PM AST)	Shelter, Community, and Public Health	Dr. Elise Gingrich	Fear Free Shelter Program Certificate Upload/Course Completion (Due March 5)	1. Lecture=1.0 Hour 2. Fear Free Shelter Program Certificate Upload=5.0 Minutes
Week #9	March 8- March 12	No Lecture	NA	SOP/ASV Group Presentation Assignment (Due March 12)	SOP/ASV Group Presentation Assignment=1.0 Hour

Week#10	March 15- March 19 (Monday Live 1-2 PM AST)	Spay and Neuter Programs	Dr. Marta Lanza and Ms. Liz Peach	None	Lecture=1.0 Hour
Week #11	March 22- March 26 (Monday Live 1-2 PM AST)	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 March 26)	1. Lecture=1.0 Hour 2. Multiple Choice Quiz=30.0 Minutes
Week #12	March 29- April 2 (Monday Live 1-2 PM AST)	Euthanasia and Emotional Well- Being in the Shelter Environment	Dr. Elise Gingrich	Wellness Assignment (Due April 2)	1. Lecture=1.0 Hour 2. Wellness Assignment=30.0 Minutes
Week #13	April 5- April 9	No Lecture	NA	None	None
Week #14	April 12- April 16	No Lecture	NA	None	None
Week #15	April 19- April 23	No Lecture	NA	Short Answer Final Exam (Due April 23)	Short Answer Final Exam=1.0 Hour
Week #16	April 26- April 30	No Lecture	NA	Finals	None
Week #17	May3- May 7	No Lecture	NA	Finals	None
Week #18	May 10- May 14	No Lecture	NA	CAPPS	None

XIII. Grading and assessment policy, and grading rubrics

➤ Grading Scale:

This course is graded with letter grade in accordance with 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 (Total Point Value =100.0 Points):

Assignment/Assessment	Point Value
1. Short Answer Final Exam	30.0
2. Fear Free Shelter Program Certification	20.0
3. Standard Operating Procedure (SOP) Protocols for Shelters	15.0
4. Multiple Choice Quiz	10.0
5. Forum Post	10.0
6. Short Answer Assignments x 2	10.0 (5.0 Each x 2)
7. Wellness Assignment	5.0

➤ Detailed Description of Assignments/Assessments:

1. Short Answer Final Exam= 30 Points (30%)

- 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.
- The Exam Questions will be posted in Sakai 3 weeks prior to the submission date to allow students adequate time to complete the assignment.
- The Short Answer Final Exam will be posted and submitted in Sakai under Tests and Quizzes, “Short Answer Final Exam.”
- See Grading Rubric at the end of the Syllabus in the Appendix

2. Fear Free Shelter Program Certification=20 Points (20%)

- Information and a link for the Fear Free Shelter Program can be found at: <https://fearfreeshelters.com/>
- Registration for the course is free with proof of veterinary student status.
- The course is related to the Fear Free Veterinary Professional Program, but more shelter specific.

- The skills you will learn will help reinforce many of the things we learn in class as well as assist you in clinics. Many clinics and shelters are encouraging/requiring their employees and volunteers to have completed this course.
- The Fear Free Shelter Program consists of 4 online modules, each approximately 1.0 hours in length, followed by a short quiz.
- You have been given weekly guidelines in the course schedule for the completion of each module and to help you manage your time efficiently.
- You will receive a certificate upon the completion of the course. Please upload the certificate to Sakai under Assignments, “Fear Free Shelter Program Certification,” by the due date.
- Please also feel free to add this certification to your resume/CV.

3. **Standard Operating Procedure (SOP) Protocols for Shelters=15 Points (15%)**

- 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:
 1. The GSPCA *
 2. A shelter/rescue of your own choosing.
 3. Improvements can also be drafted for an existing Standard Operating Procedure (SOP) at a shelter/rescue facility.
- *The GSPCA has specifically requested SOPs for the following topics:
 - Appropriate design, utilization, patient selection/criteria, and disinfection for an Isolation Ward
 - Methods to decrease routes of transmission among common infectious disease pathogens (identify and specify diseases discussed) in a Shelter Environment
- Please reach out to shelters/rescues in your communities that students of the group are affiliated with for ideas to write SOPs.
- This assignment will be a Group Project. Students will be randomly assigned to their respective groups.
- Each group will be 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 of the current situation and summary of your recommendations.
- The assignment will be submitted in Sakai under Assignments, “Standard Operating Procedure (SOP) Protocols for Shelters.”
- See Grading Rubric at the end of the Syllabus in the Appendix

4. **Multiple Choice Quiz= 10 Points (10%)**

- **Multiple Choice Quiz for Lectures (Spay and Neuter Programs AND High-Quality High-Volume (HQHV) Spay and Neuter Surgical Techniques and Medical protocols)**
- The quiz consists of 15 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 Multiple Choice Quiz will be posted and graded within Sakai Test and Quizzes, “Multiple Choice Quiz for Spay and Neuter Modules.”
- 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.

5. Forum Post = 10 Points (10%)

- **Personal Introduction Post**

Please provide an introduction about yourself. Your response should include the following:

- 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.
- Your Forum Posts will be shared with the entire class and course directors.
- You are required to:
 1. Post your own personal response to this question(s).
 2. Reply to one post made by your fellow classmates/course directors in an effort to encourage class engagement and discussions.
- Your Forum Post should be made to Forums in Sakai, “Personal Introductions.”
- See Grading Rubric at the end of the Syllabus in the Appendix

6. Short Answer Assignment x 2 Assignments=10 Points (5 Points Each) (10%)

- **Short Answer Assignment for Lectures from Weeks 2, 3,4**

Please identify and describe 3 main concepts in total 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 and 6**

Please identify and describe 3 main concepts in total you learned or were impacted by from the lectures. Please refer to the lecture learning outcomes for assistance.

- The assignment will be submitted in Sakai under Assignments, “Short Answer Assignment for Weeks 2, 3, and 4” and “Short Answer Assignment for Weeks 5 and 6.”
- See Grading Rubric at end of the Syllabus in the Appendix

7. Wellness Assignment=5 Points (5%)

Assignment and Rubric Description to be added.

Same Groups as for SOPs.

➤ **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 Assignments, Tests and Quizzes, and Forums as described above.
- Feedback on all assignments and assessments will be provided within a week after submission via Sakai.
- Students are required to sign and adhere to the honor code for all assignments and assessments.
- There is no clinical skills grade component for this course.
- Class participation is included in your final grade as part of your Forum Post and Group Assignments in Sakai.
- Attendance is not mandatory and there are no points in your final grade for attendance.
- Final grades will be posted in Sakai Gradebook and released within one week of submission of the Short Answer Final Exam.

XIV. Recommended study strategies

- Please utilize the Weekly Lessons tool in Sakai to assist you in time management and developing an effective plan for your coursework for the week.
- 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.
- Students will be provided with a list of “Additional Resources/References Recommended” for each lecture/lab in Sakai. These additional resources are meant as supplemental material or additional information for students particularly interested in that module. These “Additional Resources/References Recommended” are not required readings.

- 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 or group assignments. 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 (synchronous) sessions.
- Please arrive on time for lectures and labs if the session is live (synchronous) and dress appropriately.

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

- Students are expected to be available during the standard 8-5 pm AST school day, to virtually attend, engage with online content, and participate in all classes and clinical rotations for which they have registered.
- Employment is not an excusable absence.
- 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 Post and Group Assignments in Sakai.
- Attendance is not mandatory and there are no points in your final grade for attendance.
- **Live Lecture/Lab Zoom Sessions Policy:**
 - 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.
 - Live Sessions are not mandatory. All Live Sessions will be recorded.
- 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 (Sakai quiz/test or Examsoft) 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) (epeach@sgu.edu or 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) 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.

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> <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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<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</p>
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	<p>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> <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 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) Protocol for a 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 protocols and practices being utilized at the shelter. • Student provides shelter with appropriate and practical recommendations for improvements to their current protocols. 	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 of Care in Animal Shelters. 	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. 	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 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 <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. 	1.0	2.0	3.0	4.0	5.0
Total Score and Comments					

E. Wellness Assignment Rubric

To be added. In progress.

St. George's University				
School of Veterinary Medicine				
Course Director Listing - Spring 2021				
Anatomy, Physiology & Pharmacology Department (Dept. Chair: Dr. Hector Zerpa)				
Banner CRN	COURSES Term I	COURSE CODE	20 Credits	Course Director
21021	Histology & Embryology	ANPH 501	5	Dr. Sunil Gupta
21020	Anatomy I	ANPH 506	5	Dr. Mahesh Shiriram Deokar
21022	Physiology I	ANPH 512	5	Dr. Hector Zerpa
21026	Clinical Orientation	LAMS 502	1	Dr. Keith Kalasi & Dr. Kerri Nigito
21540	Basic Small Animal Nutrition	LAMS 540	1	Dr. Catherine Werners Butler & Afroza Khanam
21539	Professional Development I	LAMS 541	2 (P/F)	Dr. Kerri Nigito
21025	Radiology I	SAMS 501	1	Dr. Thomas Hanson
Banner CRN	COURSES Term II	COURSE CODE	21 Credits	Course Director
21118	Anatomy II	ANPH 503	5	Dr. Tom Aire
21121	Veterinary Pharmacology I	ANPH 504	3	Dr. Kamashi Kumar
21119	Physiology II	ANPH 513	3	Dr. Hugo Hernandez Fonseca
21541	Professional Development II	LAMS 542	2 (P/F)	Dr. Adria Rodriguez
21123	Bacteriology/Mycology	PTHB 503	4	Mr. Victor Amadi & Dr. Andy Alhassan
21120	Veterinary Immunology	PTHB 512	2	Dr. Mercedes Abeya
21122	Radiology II	SAMS 502	1	Dr. Thomas Hanson
21124	Veterinary Physical Diagnosis I	SAMS 515	1	Dr. Francesca Ivaldi
Pathobiology Department (Dept. Chair: Dr Melinda Wilkerson)				
Banner CRN	COURSES Term III	COURSE CODE	21 Credits	Course Director
21128	Veterinary Pharmacology II	ANPH 505	3	Dr. Arend Werners
21131	Veterinary Physical Diagnosis II	LAMS 501	1	Dr. Zainab Momoh
21605	Professional Development III	LAMS 543	2 (P/F)	Drs. Austin P. Kirwan & Adria Rodriguez
21125	Parasitology	PTHB 505	4	Dr. Rhonda Pinckney
21126	Pathology I	PTHB 506	4	Dr. Brian Butler
21127	Virology	PTHB 515	3	Dr. Sonia Cheetham-Brow
21129	Clinical Pathology	PTHB 532	4	Dr. Richard Kabuuu & Dr. Melinda Wilkerson
Banner CRN	COURSES Term IV	COURSE CODE	21 Credits	Course Director
21135	Introduction to Clinical Medicine	LAMS 503	4	Dr. Talia Guttin
21617	Professional Development IV	LAMS 547	2 (P/F)	Drs. Heather Douglas and Heidi Janicke
21618	Introduction to Livestock Nutrition	LAMS 548	1	Dr. Catherine Werners Butler
21132	Pathology II	PTHB 507	4	Dr. Muhammad Bhaiyat & Dr. Camila Does
21137	Veterinary Public Health	PTHB 510	2	Dr. Rohini Roopnarine
21134	Veterinary Epidemiology	PTHB 511	1	Dr. Rohini Roopnarine
21138	Avian, Fish & Exotic Animal Diseases	PTHB 516	3	Dr. David Marancik
21133	Introduction to Surgical Skills	SAMS 514	1	Dr. Keith Kalasi
21136	Veterinary Anesthesiology	SAMS 520	3	Dr. Flavia Restitutti
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
21142	Large Animal Surgery I	LAMS 516	2	Dr. Heidi Janicke
21141	Theriogenology	LAMS 519	4	Dr. Firdous Khan
21545	Livestock Medicine I	LAMS 544	2	Drs. Stacey Renee Byers
21139	Diagnostic Imaging	SAMS 513	3	Dr. Thomas Hanson
21140	Small Animal Surgery	SAMS 518	5	Dr. Rodolfo Bruhl Day
21143	Small Animal Medicine I	SAMS 522	3	Dr. Talia Guttin
21145	Introduction to Clinical Practice	SAMS 526	1 (P/F)	Dr. Wayne Sylvester
21144	Junior Surgery & Anesthesiology Lab	SAMS 527	2	Dr. Marta Lanza-Perea
21610	Vet Ed Assessment Term 5	VEA 500	0	Dr. Anne Corrigan
Banner CRN	COURSES Term VI	COURSE CODE	19 Credits	Course Director
21152	Veterinary Toxicology	ANPH 520	2	Dr. Arend Werners
21146	Equine Internal Medicine	LAMS 505	3	Drs. Catherine Werners Butler & Dr. Lauren Nicole Wise
21147	Livestock Medicine II	LAMS 515	3	Dr. Stacey Renee Byers
21148	Professional Veterinary Development	LAMS 533	2 (P/F)	Dr. Lauren Nicole Wise
21606	Large Animal Surgery II	LAMS 545	2	Dr. Heidi Janicke
21153	Small Animal Medicine II	SAMS 524	4	Dr. Anne Corrigan
21149	Introduction to Clinical Rotations	SAMS 528	2 (P/F)	Dr. Wayne Sylvester, Dr. Kerri Nigito and Dr. Alfred Chikweto
21608	Veterinary Practice Ownership, Management and Leadership	LAMS 546	1	Drs. Lauren Nicole Wise and Dr. Heather Douglas
21607	Clinical Reasoning in Veterinary Medicine	SAMS 530	1	Dr. Adria Rodriguez
21154	Advanced Cardiology in SAM	SAMS 531	1	Dr Anne Corrigan
21161	Special Topics in Small Animal Orthopedic Surgery	SAMS 534	1	Dr. Tomas Guerrero
21160	Special Topics in Emergency Critical Care	SAMS 536	1	Dr. Talia Guttin
21159	Small Animal Clinical Nutrition	SAMS 537	1	Dr. Catherine Werners Butler
21348	Shelter Medicine	SAMS 539	1	Ms. Elizabeth Peach & Dr. Marta Lanza Perea
21616	Year Four Clinical Rotation	VMEX 999	0	Drs. Rolf Larsen & Nicole Wise
DVM-Global Veterinary Health Track (TOTAL 41 credits)				
	PV & FTV Extra Mural Studies	ANPH 400	12 (P/F)	Dr Austin Kirwan
	Pre-Clinical - Extra Mural Studies	ANPH 540	12 (P/F)	Dr Austin Kirwan
21297	Preparatory Clinical - Extra Mural Studies	PTHB 540	6 (P/F)	Dr Austin Kirwan
21547	Food Hygiene & Meat Inspection	PTHB 541	1 (P/F)	Dr. Satish Bidaisee
	Clinical - Extra Mural Studies	PTHB 542	20 (P/F)	Dr Austin Kirwan
DVM-Work Based Advancement Track (TOTAL 16 credits)				
21609	Veterinary Practice Experience	ELEC 550	16 (P/F)	Drs. Lauren Nicole Wise & Rolf Larsen
DVM-VSRI (TOTAL 12 credits)				
21502	Research Experience	ELEC 517	1	Dr. Sonia Cheetham-Brow
21503	Research Experience	ELEC 518	2	Dr. Sonia Cheetham-Brow
21516	Research Experience	ELEC 519	3	Dr. Sonia Cheetham-Brow
21443	Research Experience	ELEC 520	4	Dr. Sonia Cheetham-Brow

SYLLABI SAVED

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indicates changes implemented for the semester

(DVM = 124 cr; DVM-RCVS = 165 cr; DVM-WBA = 140 cr; DVM-VSRI = 136 cr)

DVM ELECTIVES FALL 2020

21525	Advance Molecular Techniques	ELEC 529	3 (P/F)	Dr. Andy Alhassan
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