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

I. Course Faculty and Staff Information

Dr. Sunil K Gupta, Professor & Course Director
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Office location : Veterinary Office Building (SGU campus map # 47)

II. Course location

Lecture; David Brown (Alumni) lecture Hall;
Labs; Charter Hall Basement (near SGU Mail room / RBTT bank)

III. Prerequisite and/or co-requisite courses

DVM term 1 course

IV. Required resources

Histology printed notes
Embryology printed notes
Histology lab manual

V. Recommended resources

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.

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
color pencils for drawing in the lab manual.

VII. 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.

VIII. 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.

IX. Course-level objectives (CLO)
Students should be able to:
1. Understand the microscopic structure of various cells, tissues and organs of the body.
2. Understand the correlation between structure and function
3. Identify various cells, tissues and organ of the body
4. To be able to understand the general and systemic development.
5. To be able to understand the developmental anomalies.

X. Detailed course content

Detailed course content can be found under Resources in Sakai.

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

Program learning outcome (PLO):

A. Core medical knowledge
PLO- 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.

XII. Course Schedule
Lecture and Lab Schedule can be found under Resources in Sakai.

XIII. Grading and assessment policy, and grading rubrics

First Quiz (Lecture no.1 – 20)	25 points
Midterm Written Examination (Lecture no.1 – 30)	75 points
Midterm Lab Examination	25 points
Second Quiz (Lecture no. 31 – 48)	25 points
Final Written Examination (Lecture. no. 31 - 60)	75 points
Final Lab Examination	25 points
Lab Assignment	10 points
Total	**260 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%

XIV. Recommended study strategies
Students are strongly recommended to study the lecture / lab material covered on daily basis. Be very specific to all the structure, their location / functions.

XV. Instructor's expectations of the student

The student is expected to read the required material before lecture and particularly before lab.

XVI. Professionalism statement

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

1. Students must dress in a professional manner.
2. Eating or drinking (except water) is strictly prohibited.
3. Silence must be observed during lecture and lab. Absolutely no TALKING.
4. The participation in the St. George's University (SGU) Course and Instructor Critique Program is mandatory
5. Visitors (student's relatives/ friends) must have prior permission if they wish to attend lecture / lab

XVII. Attendance policy

Students are expected to attend all lectures and labs and to be in time. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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. 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 SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. 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.

5. 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.

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

4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.

6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat.

7. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.

8. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.

9. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.

10. No communication of any kind is permitted between examinees after entering the examination room.

11. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.

12. Examinees are not allowed to write notes on the white boards prior to the official exam start time.

13. Examinees are not allowed to use a telephone or other communication device at any point during the examination.

14. A restroom break is the only allowed break during an examination.

15. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.

16. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.

17. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.

18. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor.

19. During the last ten minutes of the exam, examinees must remain seated until dismissed.

20. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action.

21. 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

*No other personal belongings will be permitted.

XX. Copyright policy

Appendix:
Lecture & Lab schedule (with course document)
Detailed course contents (with lecture notes)

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Course Name : ANPH-501 Histology and Embryology
Course Director : Dr. Sunil K Gupta

Lecture and Labs Learning Outcomes

Lecture /lab name and number (remember that if about the same topic, a group of lectures may be one unit)	**Your lecture/lab Learning Outcomes: Add or delete LLOs according to your needs**	**Course learning outcome Number/s Link it to your CLOs / PLOs provided in the document .**
LLO 01: Lect.1-4 Course Introduction & Cytology	1. Read course structure, scope, objectives, course policy, various assessment and grading 2. Define cell, tissues, system and body 3. Discuss structure and function of cell membrane, nucleus, heterochromatin, euchromatic, Barr body and nucleolus 4. Explain cell organelles like ribosomes, endoplasmic reticulum, Golgi complex, lysosomes, peroxisomes, mitochondria, cytoskeleton, microfilaments, intermediate filaments, microtubules and cytoplasmic inclusions 5. Discuss intercellular junctions like tight junction, adhering junction, zonula adherens, macula adherens, hemidesmosomes and gap junction 6. Explain specialization of the free surfaces like cilia, flagella, microvilli and stereocilia	**CLO-1,2 PLO-01,02**
LLO 02: Lect.5-6 Epithelium & glands	1. Define epithelium and basement membrane 2. Explain various type of epithelium like simple and stratified squamous, cuboidal and columnar, pseudostratified and transitional epithelium 3. Define gland, exocrine and endocrine, unicellular and multicellular 4. Discuss simple and compound alveolar, tubular and tubule-alveolar, duct system, intralobular, interlobular, lobar and main duct. 5. Explain serous, mucous and seromucous gland 6. State mode of secretion, merocrine, apocrine, holocrine and cytocrine	**CLO-1 PLO-01**

LLO 03: Lect-7– 9 Connective tissue	1. Discuss the structure of various connective tissue cells like mesenchymal cells, fibroblast, reticular cell, adipocyte, pericyte, mast cell, plasma cell, macrophage and pigment cells and their functions 2. Explain collagen, elastic and reticular fibers 3. Discuss various type of connective tissue, mesenchymal and mucous, areolar, dense irregular and regular, elastic, reticular and adipose tissue. 4.Explain cartilage, cartilage cells, chondroblast, chondrocyte, cartilage matrix, hyaline cartilage, elastic cartilage, fibrocartilage, 5. Discuss bone, bone cells, osteoblast, osteocyte, osteoclast, bone matrix, bone microscopic structure, periosteum, endosteum, compact and spongy bone, osteon 6. Discuss intramembranous and endochondral ossification, primary and secondary centers of ossification, epiphyseal plate, fracture repair.	**CLO-1,2** **PLO-01,02**
LL0 04: Lect.10. Muscular tissue	1. Explain muscular tissue, skeleton muscles, actin and myosin filaments, A and I band, sarcomere, striations, contraction and regeneration, epimysium, perimysium and endomysium, satellite cells, red and white muscles 2. Discuss cardiac muscle, intercalated disc, contraction and regeneration, cardiac impulse conduction fibers, 3. Discuss smooth muscle, contraction and regeneration, dense bodies, intermediate filaments, muscle repair.	**CLO-1,2** **PLO-01,02**
LLO 05 : Lect.11-13. Nervous tissues	1. Define neurons, unipolar, bipolar and multipolar neurons, Neuronal structure: cell body, nucleus, cell body cytoplasm, neuron processes, dendrites, axon, terminal Branches, telodendrites. 2. Explain synapse, presynaptic and post synaptic terminals, types of synapse, axo-somatic, axo-dendritic and axoaxonic synapse. 3. Discuss neuroglia, astrocytes, oligodendrocytes, microglia, ependymal cells, neurolemmocytes, myelin sheath 4. Discuss peripheral nervous tissue, spinal nerves, afferent and efferent nerve fibers, nerve repair, sensory and autonomic ganglia, 5. Explain non-capsulated receptors, encapsulated receptors, neuromuscular synapse 6. Discuss central nervous tissues: spinal cord, grey and white matter, brain stem, nuclei, cerebral cortex, cerebellum, meninges, dura mater, arachnoid and pia mater, cerebrospinal fluid	**CLO-1,2** **PLO-01,02**

LLO 06 Lect-14 - 16. Histology of Cardiovascular system & blood	1. Explain heart, endocardium, myocardium, SA and AV node, Purkinje fibers, cardiac skeleton, fibrous ring, epicardium and pericardium 2. Discuss general structure of blood vessels, arteries, elastic and muscular arteries, arterioles, capillaries, continuous, fenestrated, sinusoidal and porous capillaries, Arteriovenous anastomoses, small, medium-sized and large veins 3. Discuss lymph capillaries: small, medium-sized and large lymph vessels 4. Explain characteristic feature of blood cells, erythrocytes, rouleaux formation, leukocytes: neutrophils, eosinophils, basophils, monocytes, lymphocytes, B- lymphocyte, T-lymphocytes and NK cell, Platelets /thrombocytes 5. Discuss hematopoiesis, Red and yellow bone marrow, myeloid and lymphoid stem cells and Avian blood	**CLO-1,2** **PLO-01,02**
LLO 07 Lect.17 -18 Histology of Immune System	1. Explain the stromal and parenchymal cells of the Immune system, lymphocytes, macrophages, reticular cells, epithelial reticular cell, dendritic cells, follicular, interdigitating, Langerhans and veiled cells. 2. Discuss lymphatic organs, Lymph node structure, lymph vessels and sinuses, blood vessels, post capillary venules, species difference. 3. Discuss thymus structure, Hassall's corpuscles, blood thymic barrier 4. Discuss spleen structure, capsule and supportive tissue, red pulp, white pulp, marginal zone, blood vessels, sheathed capillaries, species differences, 4. Discuss mucosa associated lymphoid tissue, Tonsils, Hemal node and cloacal bursa of birds	**CLO-1,2** **PLO-01,02**
LLO 08 Lect.19-20 Histology of Respiratory system	1. Explain nasal Cavity, cutaneous, respiratory and olfactory region, vomeronasal organ, Nasopharynx and larynx, trachea and extrapulmonary bronchi 2. Discuss Lung, pleura, Intrapulmonary conducting airways, bronchi, bronchioles, gas exchange area, respiratory bronchioles, alveolar ducts, alveolar sacs and alveoli, Pneumocyte type I & II, pulmonary macrophage, air-blood barrier 3. Differentiate Avian respiratory system and air sacs	**CLO-1,2** **PLO-01**
LLO 09 Lect.21-25 General Embryology and associated abnormalities	1.Define Embryology, prenatal and postnatal periods, pre-embryonic, embryonic and fetal periods. 2. Read objective and scope of embryology 3. Explain gametogenesis, primordial germ cells, spermatogenesis, spermatocytogenesis and spermiogenesis, spermatogonia, primary spermatocytes, secondary	**CLO-4,5** **PLO-01,02**

	spermatocytes, spermatid and spermatozoa. Oogenesis, primary and secondary oocyte, polar bodies, ovum and its stage at ovulation. Number of chromosomes in domestic animals 4. Discuss fertilization, ovulation, Insemination, Induced ovulators, polytocus and monotocus, sperm and ovum viability, site of fertilization, capacitation and acrosomal reaction, zona reaction, twinning, monozygous and dizygous, ectopic implantation, freemartin, polyspermy, superfecundation and superfetation, gestation periods 5. Explain cleavage, principles of cleavage and types of cleavage, holoblastic and meroblastic, morula, blastocyst. Inner cell mass or blastodisc, trophoblast cells. 6.Discuss gastrulation, germ layers, ectoderm, mesoderm, endoderm, delamination, primitive gut or archenteron, notochord, nucleus pulposus, neural tube, neural crest cells, paraxial mesoderm, intermediate mesoderm, lateral mesoderm, somatic and splanchnic mesoderm, coelom, somatopleure and splanchnopleure. Extraembryonic and intraembryonic germ layers. 7. Discuss establishment of body form, longitudinal and transverse folding. 8. Define fetal membranes, amnion, chorion, yolk sac and allantois, vitellointestinal duct or yolk stalk, umbilical cord, crown-rump length, hydro amnion, hydro allantois, hippomanes in mares. 9. Explain Implantation, superficial, eccentric and interstitial implantation. 10. Explain placenta, choriovitelline or yolk sac placentation, chorioallantoic placentation, diffuse, cotyledonary, zonary and discoidal type of placenta, villous & labyrinthine, deciduate and nondeciduate. epitheliochorial, syndesmochorial, endotheliochorial and hemochorial placenta.	
LLO 10 Lect.26-29. Development of cardiovascular system and associated abnormalities	1. Explain development of blood cell and blood vessels 2. Discuss development of heart, cardiac tube, dorsal mesocardium, transverse pericardial sinus, bulbus cordis, ventricle, atrium, truncus arteriosus and sinus horn, endocardium, myocardium and epicardium, Internal specialization, dorsal and ventral atrioventricular cushion, atrioventricular canal, septum intermedium,, septum primum foramen primum, foramen secundum, septum secundum, foramen ovale, sinus venerum, right atrium, right auricle, aorticopulmonary septum, conus arteriosus, muscular interventricular septum, membranous interventricular septum, interventricular foramen, right and left atrioventricular valve, semilunar valve, conducting system.	**CLO-4,5** **PLO-01,02**

	3. Analyze abnormalities, ectopic cordis, interventricular, interatrial and spiral septal defects, transposition of great vessels, dextra aorta, pulmonary and aortic stenosis, tetralogy of Fallot, Eisenmenger reflex. persistent truncus arteriosus, 4. Explain embryonic circulation, vitelline arteries and veins, umbilical arteries and veins, cranial and caudal cardinal veins, 5. Discuss aortic arches and their derivatives, persistent right aortic arch, vascular ring anomalies, sub cardinal and supracardinal veins, 6. Fetal circulation and changes after birth. 7. Analyze patent ductus arteriosus, patent ductus venosus	
LLO 11: Lect.30 Development of musculoskeletal system and abnormalities	1. Discuss development of vertebral column, somites, sclerotomes, myotomes and dermatomes, sternum, Intervertebral disc, nucleolus pulposus and annulus fibrosus, limb morphogenesis, development of muscles of axial skeleton, body wall and limbs. myotomes, epimere and hypomere. 2. Analyze abnormalities of the musculoskeletal systems. Amelia, bimelia, meromelia, phocomelia, polydactyly, arthrogryposis.	**CLO-4,5** **PLO-01,02**
LLO 12 Lect.31-36 Histology of the digestive system	1. Explain general structure of the tubular organs: tunica mucosa, tunica submucosa, tunica muscularis, tunica serosa /adventitia 2. Discuss oral cavity: lips, cheeks, conical buccal papillae, hard palate, dental pad, tongue, filiform, fungiform, vallate foliate, lenticular and conical lingual papillae, special lingual structures, lyssa, teeth, crown and root, enamel, dentine, cementum, brachydont and hypsodont teeth, salivary glands, parotid, mandibular, sublingual and minor salivary glands 3. Discuss pharynx and esophagus, stomach, non-glandular and glandular regions, Margoplicatus, cardiac, fundic, and pyloric region, gastric pits and gastric gland, mucous neck parietal, chief and argentaffin cells, Ruminant Stomach: rumen, reticulum omasum and abomasum 4. Explain small Intestine, villi, microvilli, crypt of Lieberkuhn, Paneth and goblet cells duodenum, Brunner's gland, jejunum, Ileum, Peyer's patches 5. Discuss large Intestine, cecum, colon, rectum, anal canal and anal sacs 6. Explain liver, capsule and stroma, classic liver lobule, portal lobule, liver acinus, parenchyma, hepatocytes, Van Kupffer cells, bile canaliculi and bile ducts, blood supply and gallbladder, Pancreas: acinar and centro-acinar cells 7. Differentiate digestive system of the domestic fowl, crop, gizzard, proventriculus, ceca, cecal tonsils, cloaca and vent.	**CLO-1,2** **PLO-01**

LLO 13: Lect.37-41 Histology of Urogenital system	1. Explain kidney, general organization, external features, lobation, cortex and medulla, types of nephrons. renal tubule, renal corpuscle, glomerulus and glomerular capsule, filtration barrier, podocytes, mesangial cells, proximal convoluted and straight tubules, thin tubule, distal straight and convoluted tubules, arched collecting ducts, collecting ducts, vasculature of the kidney, Intersitium, juxtaglomerular apparatus, JG cells and macula densa and their functions 2. Discuss urinary passages, calyces major and minor, renal pelvis, ureter, urinary bladder, detrusor muscles 3. Explain testis structure, tunica vaginalis, tunica albuginea, septulae testis and mediastinum testis, seminiferous tubules, convoluted and straight part, lamina propria, sustentacular cells, spermatogenic cells, spermatogenesis, rete testis, ductuli efferentes, testicular blood supply 4. Discuss epididymis:, head, body and tail, ductus epididymis, ductus deferens, ampulla 5. Discuss accessory sex glands, vesicular, prostate and bulbourethral gland 6. Discuss urethra, penis, corpora cavernosa and spongiosa penis, glans penis and prepuce 7. Explain ovary, cortex and medulla, follicular development, primordial, primary, secondary and mature follicles, cumulus oophorus, corona radiata, granulosa and theca cells, interstitial endocrine cells, oogenesis, ovulation, corpus luteum of cycle and pregnancy, luteal cells, corpus albicans, accessory corpus luteum, corpus atreticum. 8. Discuss uterine tube(oviduct), uterus, endometrium, myometrium and perimetrium, caruncles, endometrial cups, cervix, vagina, vestibule, clitoris, and vulva, estrous cycle 9. Differentiate avian urogenital system, kidney, ureter, testis, epididymis, ductus deferens, ovary, oviduct, Infundibulum, magnum, isthmus, uterus, vagina, sperm host gland, egg formation, cloaca.	**CLO-1,2** **PLO-01**
LLO 14: Lect-42-43. Histology of Endocrine gland	1. Explain hypophysis, adenohypophysis, pars distalis, acidophil, basophils, chromophobes, pars intermedia, melanotropes, pars tuberalis, hypothalamo-neurohypopysial system, supraoptic and paraventricular nuclei, herring bodies. epiphysis cerebri (pineal gland), melanocytes 2. Discuss thyroid Gland, thyroid follicles, synthesis of thyroxine, parafollicular cells, parathyroid gland, light and dark principal cells, oxyphilic cells, Adrenal gland: adrenal cortex, zona glomerulosa, zona fasciculata, zona reticularis, adrenal medulla, chromaffin cells Pancreatic Islets: A, B, C, and D cells	**CLO-1,2** **PLO-01,02**

LLO 15: Lect.44-47. Histology of Integument and sense organs	1. Explain epidermis, stratum basale, stratum spinosum, stratum granulosum, stratum lucidum, stratum corneum, stratum dysjunctum, keratinization, melanocytes, dermis and hypodermis 2. Discuss skin Appendages, hair, shaft and root, hair follicles, hair matrix, hair cycle, sebaceous glands, apocrine and merocrine sweat glands, anal sacs and circumanal gland 3. Discuss mammary gland, alveoli, interstitium, ducts and teats, lactiferous sinus, teat canal, papillary ducts. 4. Discuss digital organs, equine hoof, wall, sole and frog, Stratum externum, medium and internum, horn, digital pads, chestnut and ergot 5. Discuss avian skin, feathers and uropygial gland 1. Explain Eye, Fibrous tunic, sclera, cornea, vascular tunic, choroid, tapetum lucidum, ciliary body, ciliary muscle, aqueous humor, Iris, pupil, nervous tunic, retina, rods and cones, outer and inner nuclear layer, ganglionic cell layer, optic nerve, Muller's cell, refractive media, lens and zonular fibers, vitreous body. 2. Discuss ear, external ear, middle ear, tympanic membrane, tympanic cavity, auditory ossicles, auditory tube, internal ear, bony labyrinth, membranous labyrinth, vestibular apparatus, crista ampullaris, maculae of the utricle and saccule, auditory apparatus, spiral organs (organ of Corti).	**CLO-1,2** **PLO-01** **CLO-1,2** **PLO-01,02**
LLO 16: Lect.48-50 Development of digestive and respiratory system and their abnormalities	1.Explain primitive gut, foregut, midgut and hindgut, stomodeum and proctodeum, yolk stalk or vitelline duct, buccopharyngeal and cloacal membranes. Development of simple and compound stomach, spleen, small and large intestine. division of cloaca, urorectal septum, anal membrane and urogenital membranes, urachus, perineal region and perineal body. 2.Analyze abnormalities, Intestinal stenosis and atresia, atresia ani, counter-rotation of gut, urorectal fistula, persistent vitello-intestinal ducts, omphalocele, patent urachus. 3. Development of liver, pars hepatica and cystica, hepatic sinusoids, Kupffer cells, development of pancreas, dorsal and ventral pancreatic buds, pancreatic duct and accessory pancreatic duct, Hepatic encephalopathy. 4. Explain respiratory diverticulum, laryngo-tracheal groove and septum, lung bud, tracheal septum, development of alveoli and changes after birth. separation of pleural and pericardial cavities, 5. Analyze abnormalities, tracheal hypoplasia, tracheal stenosis, tracheoesophageal fistula, pulmonary hypoplasia, respiratory distress syndrome.	**CLO 4,5** **PLO 01,02**

LLO 17: Lect-51-53 Development of urogenital system and abnormalities	1. Discuss development of kidney, nephrogenic ridge, pronephros, mesonephros and metanephros, pronephric and mesonephric tubules, mesonephric duct, metanephric diverticulum, metanephric cap. 2. Discuss development of genital system, indifferent stage, primordial germ cells, sex determination, development of testis and ovary, Mullerian and wolffian duct, vesicular, pelvic and phallic part of urogenital sinus and their derivatives, descent of testis, gebernaculum, genital swelling and genital tubercle. 3. Analyze abnormalities, renal agenesis, cystic kidney, ectopic ureter, cryptorchidism, freemartin, congenital inguinal and scrotal hernia, hydrocele.	**CLO-4,5** **PLO-01,02**
LLO 18: Lect.54-56. Development of Nervous system and abnormalities	1. Explain the development of neural tube, rostral and caudal neuropore, neural crest cells, neuroblast and gliablast cells, mantle and marginal layer, alar plate and basal plate. development of spinal cord and spinal nerves, 2. Discuss development of brain, prosencephalon, mesencephalon and rhombencephalon, cervical, cranial and pontine flexure, further development of primary and secondary vesicles of the brain and its cavities, 3. Discuss development of hypophysis, adenohypophysis, neurohypophysis, Rathke's pocket, Craniopharyngioma, adrenal cortex and medulla, 4. Discuss development of eye, optic vesicle, lens placode, 5. Analyze abnormalities, spinal bifida, myeloschisis, hydrocephalus and anencephalus, coloboma, microphthalmia, Anophthalmia, congenital cataract.	**CLO-4,5** **PLO-01,02**
LLO 19: Lect-57-60. Development of Head and abnormalities	1. Discuss development of primitive pharynx, pharyngeal cleft, pouches, arches and their derivatives, branchial cyst. 2. Discuss development of thyroid gland, tongue, lateral lingual swelling, median tuberculum impar, hypobranchial eminence, teeth, dental lamina, enamel cup, dental papilla 3. Discuss development of external, middle and internal ear, otic vesicle, membranous labyrinth 4. Discuss development of face, oral and nasal cavities, primary and secondary palate, 5. Development of skull, neurocranium, desmocranium and viscerocranium, cartilage and membrane bone 6. Analyze abnormalities anodontia, extra or supernumerary teeth, cleft lip and cleft palate, microstomia and macro stomia. causes of abnormal development, genetical and environmental.	**CLO-4,5** **PLO-01,02**

LLO 20: Lab-1-5 Examination of the histology slides of cells and basic tissues	1. Use of microscope, ocular and objective lenses, coarse and fine adjustment and condenser. 2. Examine artifacts, air bubbles, stain precipitates, shrinkage, folds and knife marks. 3. Identify simple and stratified squamous, cuboidal and columnar, pseudostratified and transitional epithelium 4. Examine serous, mucous and mixed gland 2. Identify various connective tissues, adipose, areolar, Reticular, dense irregular and regular connective tissue 5. Examine cartilage, chondrocyte, chondroblast, perichondrium, hyaline, elastic and fibrocartilage 6. Identify bone, osteoblast, osteocyte, osteoclast, periosteum, endosteum, endochondral and membrane bone 7. Identify skeletal, smooth and cardiac muscles 8 Examine nerve in longitudinal and transverse section, spinal cord, spinal ganglion, cerebellum and cerebrum	**CLO-3** **PLO-01**
LLO 21: Lab-6 Examination of the histology slides of blood vessels and blood cells	1. Examine aorta, artery, vein, arteriole, venules and capillary 2.Examine various blood cells, erythrocytes, neutrophils, eosinophils, basophils, monocyte and lymphocytes in dog, cows, horse and fowl.	**CLO-3** **PLO-01**
LLO 22: Lab-7 Examination of the histology slides of the lymphatic and respiratory system	1. Examine lymph node, spleen, thymus, tonsil and cloacal bursa. 2. Examine trachea, lungs, bronchus, bronchiole, alveolar duct alveolar sac and alveoli and avian lung	**CLO-3** **PLO-01**
LLO 23 Lab-8-10 Examination of the histology slides of the digestive system	1. Examine tongue, filiform, fungiform, vallate and foliate papillae, lyssa, Parotid, submandibular and sublingual salivary glands. 2. Examine tubular structure, esophagus, non-glandular stomach, ruminant stomach, rumen, reticulum and omasum, glandular stomach, cardiac, fundic and pyloric. 3. Identify small intestine, duodenum, jejunum and ileum, large intestine, colon 4. Demonstrate liver, gall bladder, pancreas, tooth, Avian stomach, proventriculus and gizzard,	**CLO-3** **PLO-01**
LLO 24 Lab.11-12 Examination of the histology slides of the	1. Examine Kidney, renal corpuscles, proximal and distal convoluted tubules, collecting tubules, juxtaglomerular apparatus and renal pelvis, ureter, urinary bladder 2. Inspect testis, epididymis, ductus deferens, Vesicular, bulbourethral and prostate gland.	**CLO-3** **PLO-01**

urogenital system	3. Identify ovary, follicles and corpus luteum, fallopian tube, uterus, and avian magnum	
LLO 25 Lab.13-14 Examination of the histology slides of endocrine, integument and sense organs	1. Examine pituitary gland, thyroid, parathyroid, adrenal and endocrine pancreas 2.Examine skin, hair follicles, sweet and sebaceous gland, digital pad and mammary gland 3.Examine eye, iris, cornea, sclera, choroid and retina 4. Inspect membranous labyrinth, organ of Corti	**CLO-3** **PLO-01**

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF ANATOMY, PHYSIOLOGY and PHARMACOLOGY

*VETERINARY ANATOMY II (*ANPH 503*) SYLLABUS* (5 Credits): Term 2

Spring 2020

I. Course Faculty and Staff Information

Course Director: **Tom A. Aire, DVM, PhD, FCVSN, FAS**
Professor.
Tel: 444 - 4175 Ext. 3327
E-mail: taire@sgu.edu

a. Office Location: Marion Hall, Lower True Blue [Veterinary Office Building (SGU campus map: # 47)]
b. Office Hours: by appointment
c. 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]
d. 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 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 appointment
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

III. Course location

a. Lectures: David Brown Hall

b. Laboratory sessions: Veterinary Anatomy Laboratory

IV. Prerequisite and/or co-requisite courses

a. The offering of this course is predicated upon successful completion of the Veterinary Anatomy I (ANPH 506) and Radiology I (SAMS 501) courses ---- 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.

V. Required resources (texts, journal articles, course notes, laptop specs, etc.)

a. Required Textbooks and course handouts:

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

b. Required Laboratory Guides:

Ruminants: 'Guide to Ruminant Anatomy on the Dissection of the goat', by PD Garret. Iowa University Press.
Swine: Laboratory handout notes.
Equine: "Horse Dissection Guide by M. S. A. Kumar [on SAKAI]
Avian: Laboratory handout notes.

VI. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

a. 'A Guided Tour of Veterinary Anatomy – Domestic Ungulates'. Twenty-Ten Edition, by James E. Smallwood; Published by author in co-operation with Millenium Print Group, Raleigh, North Carolina, USA.
b. Laptops are as specified in the Students' Handbook and the Examinations Services

VII. Special accommodation

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

VIII. Other requirements

a. e. g., required materials, attire (e.g. scrubs, closed toe shoes, white lab coat) etc.

Students are required to wear a white laboratory coat as the attire for anatomy dissection sessions. Closed toe shoes are also mandatory. A dissection kit should be brought to the laboratory each time, and nitrile gloves are recommended.

IX. Course rationale (catalogue course description)

a. A brief explanation of the place of the course within the curriculum: why the course is included in the curriculum and its relationship to other courses

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 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. Attendance at lectures is highly advisable, and attendance at laboratory sessions is mandatory.

It is to be emphasized that power-point teaching materials do not replace notes taken by the individual student, in class. These materials constitute, at the best, a guide only. Neither is it intended that materials in the power-point presentations shall constitute the only required and examinable knowledge, in this course. You are encouraged to do extra and private reading from required and recommended texts, including dissection guides.

X. Course-level outcomes/Course goals (Instructor's point of view)

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. [See attachment 1 on SAKAI, under 'Resources']

Learning "outcomes

SEE ATTACHMENT 1

XI. Lesson-level outcomes

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

May be appended as a table at the end of the syllabus. If the course director chooses to append at the end of the syllabus, this may be noted on this section.

[See Attach. 1 on SAKAI, under 'Resources']

XII. Alignment of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs)

PLOs and CLOs should be written out in full.

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.

Course level outcome	SGUSVM program level outcome (**PLO**)
	A. Core Medical Knowledge **B. Core Professional Attributes** **C. Core Clinical Competencies (Skills)**

SVM ---- Program Competencies	**Course Learning Objective #**
A. Core Medical Knowledge	
1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.	**1(introduce), R(reinforce)**
2. Analyze homeostasis and disturbances thereof.	**R**
4. Explain the relationship between disease processes and clinical signs.	**I**
6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine.	**I, R**
7. Evaluate and analyze normal versus abnormal animal behavior.	**I, R**
10. Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions.	**I**

11. Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine.	**I, R**
B. Core Professional Attributes	
1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	**I**
2. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy.	**I**
3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.	**I**
4. Model lifelong continuing education and professional development.	**I**
5. Demonstrate and model adaptability and resilience.	**I**
6. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice.	**I**
C. Core Clinical Competencies (Skills)	
1. Execute a comprehensive patient diagnostic plan and demonstrate problem-solving skills to arrive at a diagnosis.	**I**
3. Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.	**I**
4. Analyze, design and execute appropriate plans for basic surgery and surgical case management.	**I**
9. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.	**I**

XIII. Course Schedule

List lecture titles, days and time of lecture, name of lecturer/instructor

May be appended as a table at the end of the syllabus. If the course director chooses to append at the end of the syllabus, this may be noted on this section.

[See Table on SAKAI, under 'Resources']

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

a. Grading scale
b. Types of assessment (include both formative and summative assessment methods such as quizzes, exams, laboratory practical, group discussions/assignments, minute papers, in class short assessments, etc), weights and criteria
c. 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."

d. 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.

Assessment:

Examinations and quizzes

a. Theory or written examinations and quizzes will be based mainly on multiple-choice questions, but identification of structures in diagrams/drawings as well as matching questions and filling-in gaps in statements, True or False statements, shall, also, be used.

Each quiz shall contribute a maximum of 10 points to the final mark/grade for the course. There shall be ***two quizzes***, one before the mid-term examination, and the other before the final examination. A number of unannounced, short quizzes, and clicker questions accounting for 1.00% of the final grade, may be given, from time to time, at the discretion of the Course Director or instructor.

b. The laboratory/practical component of the examination will involve the identification of tagged/pinned materials, as well as relevant questions pertaining thereto.

c. Cadaver-side oral quiz (*viva voce*) may be carried out, following the dissection of a region, and graded for each group, from time-to-time, as felt necessary. The allotted marks (2.00%) will be part of term scores **in the laboratory component of the examinations**. Only the students present at such evaluations shall receive a grade.

Main Evaluations --- Ruminant/Pig; Equine Anatomy, Avian and Fish Anatomy

(a). FIRST HALF OF TERM

Quiz 1 (Feb. 6, 2020)	20 points (Lect. Nos. 1-11)
Mid-term Examination (theory)	60 points (Lect. Nos. 1-23)
Mid-term Examination (laboratory)	40 points
Total:	**120 points**

(b). SECOND HALF OF TERM

Quiz 2 (Apr. 3, 2020)	20 points (Lect. Nos. 24-45)
Final Examination (theory)	60 points (Lect. Nos. 1-45)

Final Examination (laboratory)	40 points
Total:	**120 points**

d. **Grading policy:**

Grade	Percentage score	Grade Point
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***

XV. E-value use for outcomes assessment evaluation

a. List E-value assessments here
   i. Examples:
      1. PXDX
      2. Self Evaluations
      3. Peer Evaluations
      4. Clinical Performance Evaluations

b. Coursework submission

c. Other

The course director is encouraged to place a copy of the actual forms (if any) at the end of the syllabus.

XVI. Recommended study strategies

Anatomy is best learned by having relevant specimens or having good quality and accurate diagrams, pictures or drawings, at hand. Attendance and hands-on activities at dissection sessions are invaluable. Prior reading of lecture and laboratory material is highly recommended and profitable. Small group (three, but not more than five persons) study sessions are very helpful and beneficial.

XVII. Instructor's expectations of the student

This course is an integral component of the DVM degree program, and therefore

professional ethics regarding general discipline and courtesy, including but not limited to, respect for faculty, staff and fellow students, will be strictly enforced.

XVIII. Professionalism statement

Course director's expectations regarding professionalism

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

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

Laboratory session attendance policy: Attendance will be recorded at every dissection session. Absence from more than 75% of the dissection sessions, without proper permission and procedure, will lead to preclusion from the final examination.

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

XXI. 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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams only in the examination venue and not in
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.

22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to
37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
39. Examinees found violating any of the Examination Policies and Procedures including
40. attempting to disable or tamper with SofTest's security features will be subject to
41. academic disciplinary action.
42. 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

    *No other personal belongings will be permitted.

XXII. Copyright policy (if applicable):

Appendices (if applicable):

√ Course Schedule

CLOs

LLOs

√ PLO to CLO mapping

Rubrics

ATTACHMENTS

Attach. 1: **Lecture and Lab. Learning Outcomes** (**LLO**) – mapped onto **Course Learning Outcomes (CLO) ---- as a Resource on SAKAI**

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF ANATOMY, PHYSIOLOGY & PHARMACOLOGY

VETERINARY PHARMACOLOGY I SYLLABUS (3 Credits)

ANPH 504 (Term 2)

Spring 2020

I. Course Faculty and Staff Information

Course Director:

Dr. Kamashi Kumar, BVSc & AH, MVSc, PhD,
Associate Professor
E mail ID.: kamashikumar@sgu.edu
Tel. No. 1 473 444 4175 Ext. 3448
Office location: Veterinary Office building
Office hours: by appointment

Faculty of Pharmacology:

Dr. Arno H Werners, DVM, M.Ed, PhD, DECVPT
Professor, Pharmacology

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

II. Course location

David Brown Hall

III. Prerequisite and/or co-requisite courses

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

IV. Required resources

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

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

V. Recommended resources

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

VI. Special accommodation

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

VII. Other requirements

- None –

VIII. Course rationale

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

and adverse/side-effects. This course will be a foundation for further application into anaesthesiology, clinical medicine and surgical medicine of large and small animals.

XI. Course goals

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

X. Course-level outcomes

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

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

Detailed course content

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

In autonomic and CNS pharmacology, the mechanisms of action of various classes of drugs and the pharmacological effects produced on different systems of the body will be presented with reference to the clinical indications for their use in domestic animal species. Special attention will be given to unusual sensitivity of particular animal

species to the effects produced by certain drugs and to species variations in pharmacokinetic behavior that contribute to requisite differences in dosage regimens. Clinically important interactions between concomitantly used drugs will be described in the context of the circumstances in which they may occur.

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

XI. Lesson Level Outcomes

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

XII. Alignment of Course Level Outcomes with Program Level Outcomes

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

XIII. Course Schedule

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

XIV. Grading and assessment policy, and grading rubrics

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%

Assessment method:

Assessment of the course will be based on computer-based examinations (ExamSoft test) that will be held at scheduled times. The examination dates are listed on the lecture schedule.

The exam material will come from lectures and class discussions. The points associated with quizzes and examinations will be cumulative and a single letter grade will be awarded for the course. If any discussion/ clarification is required for the completed quizzes/exams, it should be done 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 hrs. of completion of quiz/exam.

Percent distribution for quizzes and exams:

Quiz I	12%
Mid-term exam	40%
Final exam	48%
TOTAL	100 %

Final exam is a comprehensive exam which includes the entire material of the course.

XV. Recommended study strategies

- It is highly recommended to study the lecture material on daily basis and clearly understand the concepts of subject.
- Review sessions will be offered before midterm and final exam. During this interactive session, the subject material will be reviewed with clicker questions. The sessions are quite helpful for the students to summarize the subject and to prepare for the examination.
- If you need any academic assistance, you can approach the teaching faculties. Additional office hours can be fixed by appointment through Email.

XVI. Instructor's expectations of the student

Students are expected to read through the specific lecture topic prior to class and required to attend the class regularly.

XVII. Professionalism statement

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

- Students are expected to arrive on time for lectures/exams and to exhibit professional behavior in class.
- Turn cell phones off or silent them during lectures.
- It is mandated that all students abide by the terms of the University Code of Conduct.

XVIII. Attendance policy

Students are expected to attend all the scheduled lectures and academic activities.

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

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

- Students who fail to appear for an examination without a valid reason (see student manual: SGUSVM POLICY ON AN EXCUSED ABSENCE (EA) FOR STUDENTS) will receive a score of "0" points for the examination.
- If the student is unable to take a scheduled quiz/exam, proper official procedure should be followed according to the student Manual (refer to SGUSVM absence reporting procedures and Examination policies). 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. Excuses to attend special meetings will be considered upon the student's performance.
- 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.
- Scheduling of completion exam/ re-sit exam is at the discretion of the University considering the official regulations.

XX. ExamSoft policy

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

Prior to Exam Day

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

strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. Examinees 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
7. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
8. No communication of any kind is permitted between examinees after entering the examination room.

9. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
10. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
11. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
12. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
13. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
14. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
15. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
16. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
17. 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

    *No other personal belongings will be permitted.

XXI. Copyright policy

Pharmacology I Lecture Schedule – Spring 2020

		Pharmacology I - Lecture Schedule				
			Spring 2020			
Week	**Lecture**	**Time**	**Day**	**Date**	**Lecturer**	**Topic**
1	1	11.30 a.m.	Monday	20-Jan	Dr. Werners	Introduction to Pharmacology
	2	8.30 a.m.	Tuesday	21-Jan	Dr. Werners	Pharmacokinetics - Routes of administration
	3	10.30 a.m.	Wednesday	22-Jan	Dr. Werners	Pharmacokinetics - Absorption
2	4	11.30 a.m.	Monday	27-Jan	Dr. Werners	Pharmacokinetics - Distribution
	5	11.30 a.m.	Tuesday	28-Jan	Dr. Werners	Pharmacokinetics - Metabolism
	6	11.30 a.m.	Wednesday	29-Jan	Dr. Werners	Pharmacodynamics - Excretion/elimination
	7	11.30 a.m.	Thursday	30-Jan	Dr. Werners	Quantitative kinetics
	8	11.30 a.m.	Friday	31-Jan	Dr. Werners	Pharmacodynamics
4	9	10.30 a.m.	Monday	10-Feb	Dr. Werners	Pharmacodynamics
	10	11.30 a.m.	Tuesday	11-Feb	Dr. Werners	Pharmacodynamics
	11	11.30 a.m.	Wednesday	12-Feb	Dr. Werners	Pharmacophysiology of CNS - intro anaesthesia and analgesia
	12	11.30 a.m.	Friday	14-Feb	Dr. Kumar	Autonomic nervous system
5	13	**8.30 a.m.**	**Monday**	**17-Feb**	**Quiz I**	
	14	8.30 a.m.	Wednesday	19-Feb	Dr. Kumar	Adrenergic nervous system
	15	8.30 a.m.	Friday	21-Feb	Dr. Kumar	Adrenergic nervous system
6	16	8.30 a.m.	Tuesday	25-Feb	Dr. Kumar	Adrenergic nervous system
	17	8.30 a.m.	Wednesday	26-Feb	Dr. Kumar	Adrenergic nervous system
	18	8.30 a.m.	Thursday	27-Feb	Dr. Kumar	Cholinergic nervous system
7	19	11.30 a.m.	Monday	2-Mar	Dr. Kumar	Cholinergic nervous system
	20	11.30 a.m.	Thursday	5-Mar	Dr. Kumar	Cholinergic nervous system
9		**8.30 a.m.**	**Monday**	**16-Mar**		**Mid-Term Exam**
	21	10.30 a.m.	Tuesday	17-Mar	Dr. Werners	Muscle relaxants
	22	9.30 a.m.	Wednesday	18-Mar	Dr. Werners	Sedatives and tranquilisers
	23	8.30 a.m.	Thursday	19-Mar	Dr. Werners	Sedatives and tranquilisers
	24	10.30 a.m.	Friday	20-Mar	Dr. Werners	Control of pain
10	25	11.30 a.m.	Monday	23-Mar	Dr. Werners	Control of pain
	26	11.30 a.m.	Tuesday	24-Mar	Dr. Werners	Injectable anaesthetics
	27	11.30 a.m.	Wednesday	25-Mar	Dr. Werners	Injectable anaesthetics
	28	11.30 a.m.	Thursday	26-Mar	Dr. Werners	Inhalant anaesthetics

11	29	11.30 a.m.	Wednesday	1-Apr	Dr. Werners	Anaesthetics (an overview)
	30	10.30 a.m.	Thursday	2-Apr	Dr. Kumar	Local anaesthetics
	31	11.30 a.m.	Thursday	2-Apr	Dr. Kumar	Local anaesthetics
12	32	11.30 a.m.	Tuesday	7-Apr	Dr. Kumar	Anticonvulsants
	33	11.30 a.m.	Wednesday	8-Apr	Dr. Kumar	Anticonvulsants
	34	10.30 a.m.	Thursday	9-Apr	Dr. Kumar	Histamine & serotonin antagonists
13	35	10.30 a.m.	Tuesday	14-Apr	Dr. Kumar	Histamine & serotonin antagonists
	36	11.30 a.m.	Tuesday	14-Apr	Dr. Kumar	Hemostatics & anticoagulants
	37	11.30 a.m.	Wednesday	15-Apr	Dr. Kumar	Hemostatics & anticoagulants
	38	8.30 a.m.	Thursday	16-Apr	Dr. Kumar	Anabolic steroids
14	39	8.30 a.m.	Monday	20-Apr	Dr. Kumar	NSAIDs
	40	11.30 a.m.	Tuesday	21-Apr	Dr. Kumar	NSAIDs
	41	11.30 a.m.	Wednesday	22-Apr	Dr. Kumar	Corticosteroids
	42	11.30 a.m.	Thursday	23-Apr	Dr. Kumar	Corticosteroids
	43	11.30 a.m.	Friday	24-Apr	Dr. Werners	Drugs modifying animal behaviour
15	44	11.30 a.m.	Monday	27-Apr	Dr. Werners	Prescription writing
	45	11.30 a.m.	Tuesday	28-Apr	Dr. Kumar	REVIEW
16		**8.30 a.m.**	**Monday**	**4-May**		**Final Exam**

Student Learning Outcomes:

Lecture topic	Lecture Level Outcomes (Student Learning Outcomes)	Course Level Outcomes	Program level outcomes
Introduction to Pharmacology	1. Define Pharmacology and its associated disciplines 2. Correlate the significance of pharmacology to the Veterinary medicine 3. Compare and contrast pharmacology and toxicology 4. Explain the main goals of pharmacotherapy 5. Compare and contrast the different therapy forms	1, 2	A1, A5
Pharmacokinetics - Routes of administration	1. Compare and contrast the pros and cons of different routes of administration 2. Compare and contrast local and systemic routes of administration 3. Compare the different routes of drug administration to the clinical significance. 4. Associate the patient and drug factors to the bioavailability of drugs. 5. Design dosing regimens and clarify the relevance of allometric scaling	2, 5	A1, A5, C9
Pharmacokinetics - Absorption	1. Explain active and passive transport processes across membranes 2. Integrate the pathophysiological factors role in modulating drug absorption 3. Compare and contrast absolute and relative bioavailability 4. Determine the clinical relevance of absorption	2, 5	A1, A5, C9
Pharmacokinetics - Distribution	1. Explain the importance of plasma protein binding for the distribution of drugs 2. Describe distribution and re-distribution of drugs 3. Integrate the role of pathophysiological changes over the distribution of drugs	2, 5	A1, A5, C9

Pharmacokinetics - Metabolism	1. Explain the various processes of drug biotransformation 2. Compare and contrast the first-pass effect and enterohepatic circulation and reflect on their clinical relevance 3. Compute the effects of disease on the metabolism of drugs 4. Associate the clinical significance of metabolism including the effects of genetic polymorphisms	2, 5	A1, A5, C9
Pharmacokinetics - Excretion	1. Classify the different routes of elimination of drugs 2. Integrate the role of transporters on the elimination of drugs 3. Determine the clinical relevance of elimination (species differences and genetic polymorphisms) 4. Correlate the pathophysiological factors and disease condition to the elimination of drugs.	2, 5	A1, A5, C9
Quantitative pharmacokinetics	1. Explain the different components of the plasma- concentration-time curve 2. Compare and contrast the different pharmacokinetic models and their clinical relevance 3. Interpret the significance of the different pharmacokinetic models. 4. Analyze the importance of therapeutic index of drug	1, 2, 5	A1, A5, C2, C9

Pharmacodynamics	1. Explain the concepts of pharmacodynamics associated with various drugs. 2. Compare and contrast different types of drug receptors to their significance. 3. Associate the role of secondary messengers to the cellular effect. 4. Determine the efficacy and potency of drugs in relation to therapeutic index of drugs. 5. Differentiate the concepts of selectivity and specificity 6. Integrate drug-target interactions and their clinical significance (agonist, competitive and non-competitive antagonist, inverse agonist) 7. Interpret changes in receptor populations (receptor down-regulation)	1, 2, 4, 5	A1, A5, C2, C9
Introduction to Autonomic nervous system	1. Explain the physiological roles of the sympathetic and parasympathetic nervous system 2. Correlate the physiology of ANS to the pharmacological intervention.	1, 2	A1, A2, A4, A5, A6, C2, C5, C9
Adrenergic drugs	1. Differentiate and explain the pharmacological features of adrenergic drugs. 2. Associate the pharmacokinetic and pharmacodynamic features of adrenergic drugs to the appropriate selection of drugs for therapeutic concern. 3. Explain the side-effects and contraindications of the adrenergic drugs. 4. Compute the adrenergic drug interactions applicable for a clinical condition. 5. Determine the suitable drug for treating a clinical disease in various species.	1,2, 3, 4, 5, 6, 7	A1, A2, A4, A5, A6, C2, C5, C9

Cholinergic drugs	1. Differentiate and explain the pharmacological features of cholinergic drugs. 2. Associate the pharmacokinetic and pharmacodynamic features of cholinergic drugs to the appropriate selection of drugs for therapeutic concern. 3. Explain the side-effects and contraindications of the cholinergic drugs. 4. Compute the cholinergic drug interactions applicable for a clinical condition. 5. Determine the suitable drug for treating a clinical disease in different species.	1, 2, 3, 4, 5, 6, 7	A1, A2, A4, A5, A6, C2, C5, C9
Pharmacophysiology of CNS	1. Explain the physiological role of the central nervous system and correlate to the pharmacological intervention. 2. Illustrate the importance of CNS neurotransmitters to regulate the bodily function 3. Define the therapeutic goals for anaesthesia and analgesia 4. Categorize the different targets for anaesthetic drugs 5. Design appropriate treatment protocols for anaesthesia	1, 2, 3	A5, A6, A11, C2, C3, C4, C6
Sedatives and tranquilizers	1. Compare the pharmacokinetics and pharmacodynamics of various sedatives and tranquilizer drugs 2. Determine the appropriate sedative/tranquiller drug for treating the clinical condition in various species. 3. Explain the side-effects and contraindications of sedatives and tranquilizers. 4. Design protocols for the sedation of animals taking drug-drug interactions and adverse effects into account 5. Calculate protocol modification based on drug characteristics and the patient's pathophysiology	1, 2, 3, 4, 5, 6, 7	A5, A6, C2, C3, C4, C5, C6
Muscle Relaxants	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)	1, 2, 3, 4, 5, 6, 7	A5, A6, C2, C3, C4, C5, C6

	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	1. Discuss about the physiology of pain induction 2. Explain the significance of analgesic drugs in Veterinary medicine. 3. Compare the pharmacokinetics and pharmacodynamics of various analgesic drugs. 4. Determine the analgesic drug in relation to species and the respective clinical condition. 5. Explain the side-effects and contraindications of various analgesic drugs 6. Design pain medication protocol	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, C1, C2, C3, C4, C5, C6
Injectable anaesthetics	1. Discuss the basic principles of general anaesthesia 2. Integrate the pharmacokinetic prerequisites for induction of general anaesthesia 3. Explain the significance of various classes of injectable anaesthetics. 4. Compare the pharmacokinetics and pharmacodynamics of various injectable anaesthetic drugs. 5. Explain the side-effects and species differences of various injectable anaesthetic drugs 6. Design anaesthetic protocols considering drug interactions and species sensitivity	1,2,3,4,5,6,7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6

Inhalant anaesthetics	1. Discuss the basic principles of general anaesthesia 2. Integrate the pharmacokinetic features of inhalation anaesthetic drugs for induction of general anaesthesia 3. Tabulate the effects of inhalation anaesthetic drugs on CNS and various visceral organs. 4. Categorize various drugs of inhalant anaesthetics and associate their pharmacological features to clinical significance. 5. Explain the side-effects associated with various inhalant anaesthetic drugs. 6. Design anaesthetic protocol considering drug interactions and species sensitivity.	1,2,3,4,5,6,7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6
Local anaesthetics	1. Explain the basic principles and importance of local anaesthesia 2. Categorize various drugs of local anaesthetics used in veterinary animals. 3. Integrate the pharmacological features of local anaesthetic drugs to the clinical significance. 4. Explain the side-effects associated with various local anaesthetic drugs. 5. Design anaesthetic protocols considering species sensitivity and clinical condition.	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, B3, C1, C2, C3, C4, C5, C6
Anticonvulsants	1. Explain the pathophysiology of seizures and apply this knowledge to determine therapeutic targets 2. Identify compounds that can be used to treat seizures and/or epilepsy 3. Integrate pharmacokinetic characteristics of drug categories and individual drugs to the efficacy of treatment 4. Create treatment plans for animals with seizures or epilepsy 5. Identify the most common adverse effects associated with the use of anti-seizure drugs	1, 2, 3, 4, 5, 6, 7	A5, A6, A7, C1, C2, C5, C6

Histamine, serotonin and their antagonists	1. Discuss the significance of autacoids in physiology 2. Compare the pharmacological features of first and second generation antihistaminergic drugs 3. Tabulate the clinical indications of antihistaminergic drugs. 4. Integrate the significance of serotonergic agonist and antagonistic drugs in specific clinical indications. 5. Explain the side-effects and contraindications of antihistaminergic drugs and serotonergic drugs in various species	1, 2, 3, 4, 5, 6, 7	A3, A4, A5, A6, A7, C1, C2, C4, C5, C6
Hemostatic agents and anticoagulants	1. Explain the physiology of blood coagulation and fibrinolysis 2. Compare and contrast the pharmacological features and clinical use of hemostatic drugs, anticoagulants, fibrinolytic and antiplatelet drugs in various animals	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7
Anabolic steroids	1. Discuss the role of anabolic steroids in animal's physiology 2. Explain various anabolic steroids for veterinary animal clinical use and their significance.	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7
NSAIDs & Corticosteroids	1. Integrate the physiology of prostaglandins and corticosteroids to explain the significance of NSAIDs and corticosteroids in animal species. 2. Compare the pharmacokinetics and pharmacodynamics of different categories of NSAIDs and corticosteroids. 3. Determine the clinical indications of NSAIDs and corticosteroids. 4. Assess the importance of the side-effects and contraindications of NSAIDs and corticosteroids.	1, 2, 3, 4, 5, 6, 7	A3, A4, A5, A6, C1, C2, C4, C5, C6
Drugs modifying animal behaviour	1. Understand the mechanism of action of drugs used to modify animal behavior. 2. Define the adverse effects and drug-drug interactions that occur in the treatment of behavioural problems. 3. Design treatment protocols for animals with different behavioural problems.	1, 2, 3, 4, 5, 6, 7	A1, A2, A5, A6, A7, B7, C1, C2, C4, C5, C6, C7

Prescription writing	1. Distinguish the different components of a prescription. 2. Create a prescription based on the details provided.	1, 2, 3, 4, 5, 6, 7	A5, C2

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 pharmacology 2 SYLLABUS (3 credits)
ANPH505 TERM 3
Spring 2020

I. Course Faculty and Staff Information

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

II. Course location

All lectures will be held in Ray and Jan Sis Lecture Theatre 2

III. Prerequisite and/or co-requisite courses

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

IV. Required resources

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

V. Recommended resources

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

- Pharmacology, 7th edition; Rang, Dale and Ritter editors; Churchill Livingstone
- Antimicrobial therapy in Veterinary Medicine, 4th edition; Giguere, Prescott, Baggot, Walker and Dowling editors; Blackwell Publishing

- Veterinary Pharmacology and Therapeutics, 9th edition; Riviere and Papich editors; Wiley-Blackwell
- Handbook of Veterinary Pharmacology, 1st edition; W.S. Hsu, Wiley-Blackwell
- Equine Clinical Pharmacology; J.J. Bertone and L.J.I. Horspool, Saunders
- Small Animal Clinical Pharmacology, 2nd edition; J.E. Maddison, S.W. Page and D.B. Church, Saunders
- Small Animal Clinical Pharmacology and Therapeutics, 2nd edition; D.M. Boothe, Elsevier

VI. Special accommodation

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

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

VII. Other requirements

None

VIII. Course rationale

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

IX. Course goals

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

X. Course-level objectives/learning outcomes

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

XI. Detailed course content

The basic principles for the responsible use of veterinary medicinal products have been presented in term 2 (pharmacology I). In this term we will discuss microbial drug targets (antibacterial drugs, antiviral drugs, antiparasitic drugs, anthelmintic drugs and antifungal drugs), as well as

drug action on specific organ systems. Where possible, the emphasis will lie on the design of therapeutic protocols. Therapeutic concepts take the pathophysiology, patient dependent factors and the typical pharmacological characteristics of drugs into account. After defining a tentative diagnosis, the next step in the process is to define the therapeutic goals (bronchoconstriction in animals in respiratory distress; antimicrobial drugs in infections; anti-dysrhythmics in cardiac arrhythmias, diuretics in cardiac- and renal disease etc., etc.). Next and based on the therapeutic goals, specific targets are identified, after which individual drugs are selected and a therapeutic protocol is designed. Essential here is thorough knowledge of disease processes, pharmacodynamics and pharmacokinetics. Once the therapeutic protocol has been selected, the student is able to evaluate the treatment plan including drug-drug interactions, side effects and efficacy (or lack of efficacy) and modify the previous established treatment plan if necessary. To be able to make a purposeful and informed decision the students need to know a wide variety of veterinary medicinal products. The therapy concept and the discussion involved in the decision-making include a number of ethical issues and economical restraints. A detailed overview of the lecture topics and Student Learning Outcomes can be found in the appendix.

XII. Alignment of Lecture Learning Objectives, Course Learning Objectives with Program Learning Objectives/Competencies

See table at the end of this syllabus

XIII. Course Schedule

See table at the end of this syllabus.

XIV. 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+

PERCENTAGE SCORE	LETTER GRADE
59.5 - 64.4	D
< 59.4	F

Assessment policy

Knowledge of the subject will be tested during the quizzes and final examination. All the material presented (notes, articles, book chapters, lecture slides) is subject in the quizzes and exam, unless the lecturer specifically indicates differently. Two quizzes (20 questions each) will be scheduled during the term, during which the current knowledge of the students will be tested (an overview is presented in the table below). The final exam (60) questions will cover all material presented during the term. The final grade will consist off the mark for the two quizzes (20% each), and the mark for the final examination (60%). **Anything that falls under the learning outcomes can be part of the examinations.**

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

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.**

QUIZ/ EXAM	LECTURES	SUBJECTS	NUMBER OF QUESTIONS
Quiz 1	2-15	Antimicrobials, Cardiovascular pharmacology	20
Quiz 2	16-29	Ophthalmic-, Urogenital-, Gastro-intestinal-, Respiratory pharmacology and Chemotherapeutics/anticancer medication	20
Final	1-43	Cumulative	Approximately 60

XV. E-value use for outcomes assessment evaluation

N.A.

XVI. Recommended study strategies

This course will be assessed in 2 quizzes, a midterm examination and a comprehensive final examination. It is therefor essential to stay on top of the study material throughout the course. To be able to do so, it is advised to follow the following steps:

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

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

XVII. Instructor's expectations of the student

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

XVIII. 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 de nes 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 t 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 res-

ponsibility 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.

XIX. Attendance policy

All matriculated students are expected to attend all assigned academic activities for all courses currently registered.

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

Students who fail to appear for an examination without a valid reason (see Absence Reporting Procedures below) 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.

Medical Excuse: 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 ll out the Medical Excuse Form on the member's center of the University website. This form will be sent automatically to the Course Director(s), University Health Services, Dean of Students Office, and Dean of the School of Veterinary Medicine. 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 such excuses in an academic year. The third excuse results in the case being reviewed by the Dean's Council, which may result in a mandatory medical leave of absence (LOA). The policies regarding completion and make-up examinations are at the option of the Course Director.

Students are referred to specific pages in the Student Manual for the most up-to-date policy..

XXI. ExamSoft policy

You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. ExamSoft is able to track testing behaviours, i.e. testing time, testing location, and any deviations from the honour code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honour Code in the student handbook. If you have a computer problem go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam.

You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in ExamSoft so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email afterwards to ensure that your answer file has been uploaded. When not provided for in this paragraph, students are referred to the student handbook.

XXII. 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. Reproduction in whole or in part is prohibited.

XXIII. Appendices

Course schedule

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
1	1	2.30-3.20 pm	21 jan	Dr. Werners	Introduction to pharmacology 2
	2	2.30-3.20 pm	23 jan	Dr. Kumar	Antimicrobial
	3	1.30-2.20 pm	24 jan	Dr. Kumar	Antimicrobial
2	4	2.30-3.20 pm	28 jan	Dr. Kumar	Antimicrobial
	5	3.30-4.20 pm	29 jan	Dr. Kumar	Antimicrobial
	6	2.30-3.20 pm	30 jan	Dr. Kumar	Antimicrobial
3	7	1.30-2.20 pm	4 feb	Dr. Kumar	Antimicrobial
	8	1.30-2.20 pm	6 feb	Dr. Kumar	Antimicrobial
4	9	2.30-3.20 pm	10 feb	Dr. Kumar	Antimicrobial
	10	1.30-2.20 pm	11 feb	Dr. Kumar	Antimicrobial
	11	1.30-2.20 pm	12 feb	Dr. Kumar	Cardiovascular pharmacology
	12	1.30-2.20 pm	13 feb	Dr. Kumar	Cardiovascular pharmacology
5	13	2.30-3.20 pm	17 feb	Dr. Kumar	Cardiovascular pharmacology
	14	2.30-3.20 pm	18 feb	Dr. Kumar	Cardiovascular pharmacology

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
	15	2.30-3.20 pm	19 feb	Dr. Kumar	Cardiovascular pharmacology
		1.30-2.20 pm	**20 feb**		**Quiz 1**
	16	2.30-3.20 pm	21 feb	Dr. Werners	Ophthalmic pharmacology
6	17	4.30-5.20 pm	24 feb	Dr. Werners	Ophthalmic pharmacology
	18	3.30-4.20 pm	26 feb	Dr. Werners	Urogenital pharmacology
	19	3.30-4.20 pm	28 feb	Dr. Werners	Urogenital pharmacology
7	20	3.30-4.20 pm	4 march	Dr. Werners	Urogenital pharmacology
	21	3.30-4.20 pm	5 march	Dr. Kumar	Gastrointestinal pharmacology
	22	4.30-5.20 pm	6 march	Dr. Kumar	Gastrointestinal pharmacology
	23	3.30-4.20 pm	17 march	Dr. Kumar	Gastrointestinal pharmacology
9	24	3.30-4.20 pm	19 march	Dr. Kumar	Gastrointestinal pharmacology
	25	4.30-5.20 pm	20 march	Dr. Werners	Chemotherapy/ anticancer medication
10	26	3.30-4.20 pm	25 march	Dr. Werners	Chemotherapy/ anticancer medication
	27	1.30-2.20 pm	26 march	Dr. Werners	Chemotherapy/ anticancer medication
	28	4.30-5.20 pm	27 march	Dr. Werners	Respiratory pharmacology
11	29	2.30-3.20 pm	31 march	Dr. Werners	Respiratory pharmacology
	30	3.30-4.20 pm	1 april	Dr. Werners	Review lecture
		1.30-2.20 pm	**2 april**		**Quiz 2**
	31	4.30-5.20 pm	3 april	Dr. Werners	Food safety

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
12	32	3.30-4.20 pm	6 april	Dr. Werners	Food safety
	33	1.30-2.20 pm	8 april	Dr. Werners	Antiprotozoals
	34	3.30-4.20 pm	9 april	Dr. Werners	Ectoparasiticides
13	35	2.30-3.20 pm	15 april	Dr. Werners	Antifungals
	36	2.30-3.20 pm	16 april	Dr. Werners	Antivirals
	37	2.30-3.20 pm	17 april	Dr. Werners	Therapeutic decision making
14	38	2.30-3.20 pm	20 april	Dr. Werners	Therapeutic decision making
	39	2.30-3.20 pm	21 april	Dr. Kumar	Anthelmintics
	40	2.30-3.20 pm	22 april	Dr. Kumar	Anthelmintics
	41	2.30-3.20 pm	23 april	Dr. Kumar	Anthelmintics
	42	3.30-4.20 pm	24 april	Dr. Kumar	Anthelmintics
	43	2.30-3.20 pm	27 april	Dr. Kumar	Review
17		**1.30-4.00 pm**	**11 may**		**Final examination**

Student Learning Objectives

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Antimicrobial drugs	AMB 1. Identify the drug targets and mechanisms of action of the different groups of antimicrobial drugs AMB 2. Compare and contrast time dependent and concentration dependent killing of bacteria and what this means for therapeutic decisions AMB 3. Clarify the importance of bactericidal versus bacteriostatic in therapeutic decision making (severity of disease) AMB 4. Compare and contrast the different pharmacodynamic and PK/PD parameters essential in treatment choices (MIC, MPC, MPW, MBC etc) AMB 5. Clarify different mechanisms of resistance against antimicrobial drugs AMB 6. Evaluate the adverse effects and contraindications of antimicrobial drugs AMB 7. Create treatment protocols for different bacterial diseases	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Cardiavascular pharmacology	Drugs with an effect on the heart CV 1. Identify the drug targets and mechanisms of action of drugs with an effect on the heart CV 2. Compare and contrast clinical effects of drugs with an effect the heart CV 3. Evaluate the adverse effects and contraindications of drugs with effects on the heart CV 4. Create a treatment protocol for diseases of the heart Drugs with an effect on the vasculature CV 5. Identify the drug targets and mechanisms of action of drugs that effect the vasculature CV 6. Compare and contrast the effects (including adverse effects) of drugs with an effect on the vasculature CV 7. Evaluate the adverse effects and contraindications with an effect on the vasculature CV 8.Create a treatment protocol for diseases of the vasculature	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
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	A2; A3; A5; A6; A9; C2; C6; C7; C9

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Urogenital pharmacology	Diuretics UG 1. Identify the drug targets and mechanisms of action UG 2. Compare and contrast the clinical effects of diuretics UG 3. Evaluate the adverse effects and contraindications UG 4. Create a treatment protocol for diseases requiring the use of diuretics Drugs treating diseases of the kidney UG 5. Identify the drug targets and mechanisms of action of drugs used in acute and chronic kidney disease UG 6. Compare and contrast the effects of different drugs used in acute and chronic kidney disease UG 7. Evaluate the adverse effects and contraindications of drugs used in acute and chronic kidney disease UG 8. Create a treatment protocol for acute and chronic kidney disease Drugs used to treat diseases of urether, urinary bladder and urethra UG 9. Identify the drug targets and mechanisms of action for drugs with an effect on the lower urinary tract UG 10. Compare and contrast the different effects of drugs with an effect on the lower urinary tract UG 11. Evaluate the adverse effects and contraindications of drugs with an effect on the lower urinary tract UG 12. Create a treatment protocol for diseases of the lower urinary tract	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Gastro-intestinal pharmacology	Drugs with an effect on the stomach GI 1. Identify the drug targets and mechanisms of action for drugs with an effect on the stomach GI 2. Compare and contrast the effects of drugs with an effect on the stomach GI 3. Evaluate the adverse effects and contraindications of drugs with an effect on the stomach GI 4. Create a treatment protocol for common diseases of the stomach Drugs with an effect on the intestines GI 5. Identify the drug targets and mechanisms of action of drugs with an effect on the intestines GI 6. Compare and contrast the effects of drugs with an effect on the intestines GI 7. Evaluate the adverse effects and contraindications of drugs with an effect on the intestines GI 8. Create a treatment protocol for common diseases of the intestines	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Chemotherapy/cancer medication	CT 1. Identify the drug targets and mechanisms of action of different anticancer drugs CT 2. Compare and contrast the effects different groups of anticancer drugs CT 3. Clarify different mechanisms of resistance against drugs used to treat cancer CT 4. Evaluate the adverse effects and contraindications of anticancer drugs CT 5. Create a treatment protocol for different types of cancer	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Food safety	FS 1. Clarify the importance of avoiding residues in edible tissues FS 2. Identify rules and regulations regarding food safety in different countries FS 3. Clarify which parameters are used to minimise the risk of residues in food FS 4. Identify withdrawal times and explain the influence dose and pharmacokinetic parameters have on the withdrawal time FS 5. Clarify the rules and regulations regarding extra label use of drugs in different countries	6, 7, 8	A5; A9; B1; B2; B6; B7; B8; C8

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Antiviral drugs	AV 1. Identify the drug targets and mechanisms of action of different antiviral drugs AV 2. Compare and contrast the effects of different groups of antiviral drugs AV 3. Clarify different mechanisms of resistance against drugs used to treat viral infections AV 4. Evaluate the adverse effects and contraindications of antiviral drugs AV 5. Create a treatment protocol for different viral infections	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Antiprotozoal drugs	AP 1. Identify the drug targets and mechanisms of action of antiprotozoal drugs AP 2. Compare and contrast the effects of different groups of antiprotozoal drugs AP 3. Clarify different mechanisms of resistance against drugs used to treat protozoal infections AP 4. Evaluate the adverse effects and contraindications of antiprotozoal drugs AP 5. Create a treatment protocol for different protozoal infections	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Ectoparasiticides	ECT 1. Identify the drug targets and mechanisms of action of ectoparasitic drugs ECT 2. Compare and contrast the effects of different groups of ectoparasitic drugs ECT 3. Clarify different mechanisms of resistance against ectoparasitic drugs ECT 4. Evaluate the adverse effects and contraindications of ectoparasitic drugs ECT 5. Create a treatment protocol for different ectoparasitic infestations	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Antifungal drugs	AF 1. Identify the drug targets and mechanisms of action of antifungal drugs AF 2. Compare and contrast the effects of antifungal drugs AF 3. Clarify different mechanisms of resistance against antifungal drug AF 4. Evaluate the adverse effects and contraindications of antifungal drugs AF 5. Create a treatment protocol for fungal infections	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Anthelmintic drugs	ANTH 1. Identify the drug targets and mechanisms of action of anthelmintic drugs ANTH 2. Compare and contrast the effects of anthelmintic drugs ANTH 3. Clarify different mechanisms of resistance against anthelmintic drugs ANTH 4. Evaluate the adverse effects and contraindications of anthelminthic drugs ANTH 5. Create a treatment protocol for different helminth infections/infestations	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Respiratory pharmacology	RESP 1. Identify drug targets and mechanisms of action of drugs used to treat common respiratory diseases RESP 2. Compare and contrast the effects and adverse effects of drugs used to treat common respiratory diseases RESP 3. Evaluate the contraindications and adverse effects of drugs used to treat common respiratory diseases RESP 4. Create treatment protocols for common respiratory diseases in animals	1, 2, 3, 4, 5	A2; A3; A5; A6; A9; C2; C6; C7; C9
Therapeutic decision making	TDM 1. Create treatment plans for common disorders in a variety of relevant veterinary species TDM 2. Evaluate treatment plans based on the therapeutic concept including Good Veterinary Practice and Antimicrobial Stewardship TDM 3. Compare and contrast advantages and disadvantages of different treatment modalities	6, 7, 8	A5; A9; B1; B2; B6; B7; B8; C8

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

I. Course Faculty and Staff Information

a. Course Director:

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

E-mail - mdeokar@sgu.edu

Office Location: Veterinary Research and Diagnostic Lab. Building

1.

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

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

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

1.

c. Faculty:

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

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

1.

d. Staff members:

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

Department Secretary - Mrs. Cherry Ann Lumpriss

II. **Course location**
   a. David Brown Hall (Alumni Hall), Veterinary Anatomy Laboratory

III. **Prerequisite and/or co-requisite courses**
   a. None

IV. **Required resources**
   a. Lecture Notes - Lecture presentation Available on Sakai, i.e. Learning Management System in PDF/PPT format.
   b. Guide to the dissection of the dog, Evans · de Lahunta, Eighth Edition, Saunders /Elsevier Pub.

V. **Recommended resources** (texts, journal articles, course notes, laptop specs, etc.)
   a. Textbook of Veterinary Anatomy, Dyce ·Sack· Wensing, Fourth Edition, Saunders/ Elsevier pub.

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. Students **must carry ID cards** for all the official classes and laboratory sessions.

b. Students must **dress in a professional manner**, in line with the School's Dress Code. **White laboratory coats are mandatory for any official lab session**.

c. **We highly recommend attending all lectures and laboratory sessions**. Students are expected to be on time during lectures/labs/examinations. **We may take class and laboratory attendance by using appropriate methods.** Repeated late arrivals and early departures from the lab sessions without permission will be considered nonattendance.

d. **Eating or drinking in the classroom and laboratory is strictly prohibited**. Water is allowed in SGU specified containers. Smoking on campus is not permitted except in designated zones/areas.

e. Please note that live **animals/pets are not allowed**, except for teaching and learning purposes, in the veterinary anatomy lab.

f. **The examination material comprises information from lecture notes and lab manual. For a given topic, the lecture exam will also contain questions from the corresponding section of the lab manual.**

g. All the exams are sequestered, and the student will not be permitted to see the questions after the examination is over. Appropriate Examsoft reports will be available online.

h. **Any discrepancy in the points earned, in any examination other than the final examination, must be resolved within 7 days after the examination.**

i. Please note that the **course director is the first point of contact** to resolve any issues related to the course.

j. **Personal video and audio recording in the laboratory sessions is not permitted.** If necessary, specific arrangements will be made to produce such material and posted appropriately on the course website.

k. **"Lab time switch"** after the midterm exam, would occur depending upon changes in the other courses such as radiology and clinical orientation.

xx. 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.

Students must not expose themselves to any situation that lends itself even to a suspicion of cheating, such as talking during an examination, looking at another's examination paper/laptop, or possessing notes or any other inappropriate material during an examination. A student found cheating is subject to immediate dismissal from the University, after appropriate deliberation.

VIII. Course rationale (catalog course description)

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

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

IX. Course goals (Instructor's point of view)

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

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

X. **Course level outcomes**

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

2. Students should be able to use the anatomic language in an appropriate manner and demonstrate a complete understanding of the anatomic planes as well as directional terms as well as their application in clinical practice.

3. Students should demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as the topography of the organ system. The student should be able to relate the knowledge of systemic and topographic anatomy in general physical examination, specific clinical procedures, diagnostic imaging, anatomic (gross) pathology, and surgical procedures.

4. Students should be able to explain the gross differences between the dog and cat along with awareness of the common clinical conditions associated with the system and its organs in the canine and feline species.

5. Students should understand and apply the principles of laboratory safety and biosecurity while working in the laboratory sessions.

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

Course Level Outcome	Program Level Outcome (SVM)
At the end of this course 1. Students should demonstrate a thorough understanding of the basic animal tissue; relations between the cells, tissue, and organs that form the organ systems. 2. Students should be able to use the anatomic language in an appropriate manner and demonstrate a complete understanding of the anatomic planes as well as directional	A.1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. /Core Medical Knowledge A.6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. /Core Medical Knowledge

terms as well as their application in clinical practice. 3. Students should demonstrate a thorough understanding of the systemic anatomy (body systems) and be able to explain the structure, function as well as the topography of the organs and body systems. Students should become familiar with common clinical conditions, surgical and clinical procedures that are discussed in association with the individual system of the body. 4. Students should be able to explain the structural, functional and topographical differences of body systems and organs between the dog and cat. 5. Students should understand and apply the principles of laboratory safety and biosecurity while working in the laboratory sessions.	B.1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. /Core Professional Attributes B.3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. /Core Professional Attributes B.5. Demonstrate and model adaptability and resilience. /Core Professional Attributes B.6. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. /Core Professional Attributes

XII. **Lesson and Laboratory level outcomes**

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

Lecture # & Topic	Your lecture/lab Learning Outcome	Course learning outcome Number/s
1 Course Introduction	Make students familiar with the course structure and course policy.	
2 – 8 Introduction / General Anatomy	1. Define anatomy and describe divisions of anatomy. 2. Describe and express anatomical language i.e. nomenclature and terminologies.	1, 2

	3. Recognize regions of the body, anatomical planes and Describe directional terms used in anatomy. 4. Describe the relation between cell, tissue and body systems. 5. List the fundamental tissue of the animal body. 6. Describe the basic structure of the epithelium. 7. Describe connective tissue, its types, and examples; explain the superficial and deep fascia. 8. Describe the basic structure and function of muscle tissue, classify and recognize different types of muscles. 9. Describe the gross structures and function of the tendons, ligaments, synovial bursa and tendon/synovial sheath. 10. Describe the composition, structure, function, and classification of the bone tissue. 11. List parts of the long bone. 12. Describe the pattern of blood supply to a long bone. 13. Describe the basic components of the nervous system of the dog and cat. 14. Recognize various functional divisions of the nervous system of the dog and cat. 15. Differentiate components of the Central Nervous System (CNS), Peripheral Nervous System (PNS) and Autonomic Nervous System (ANS).	
9 – 14 Arthrology – General, Appendicular (Limbs) & Axial (Vertebral column).	1. Define joint, describe and classify different types of joints of the body. 2. Describe fibrous, cartilaginous and synovial joint. 3. List the characteristics of the synovial joint and classify the synovial joints. 4. List and describe the structure of joints of the forelimb of the dog and cat. 5. Recognize the structures associated with joints of the forelimb such as ligaments, joint cavities, and associated structures. 6. Describe the structure of joints of the hindlimb of the dog and cat. 7. Recognize the structures associated with each joint of the hindlimb such as	2,3, 4

	ligaments, joint cavities, and associated structures. 8. Classify the joints of the forelimb and hindlimb and know the specific movements present in each joint. 9. List the articulations of the vertebral column and understand the structure of these joints. Explain the structure and function of the intervertebral disk. 10. Recognize various ligaments of the vertebral column. 11. Understand the basic organization of the muscles of the vertebral column e.g. epaxial and hypaxial muscle systems.	
16 -18 Thoracic Cavity and Respiratory Apparatus	1. Describe the visceral spaces, list the primary body cavities and their content. 2. Recognize the structures located within and outside of the visceral space of the neck. 3. Describe the course of the esophagus and its relationship with the trachea. 4. List parts of the respiratory apparatus in the canine and feline species. 5. Describe the structure, function and topography of the parts of the respiratory apparatus i.e. Nose, nasal cavity, larynx, trachea, lungs and thoracic wall. 6. Describe the structure of the paranasal sinuses and their relationship with the nasal cavity and carnassial teeth. 7. Describe the structure and recognize the relationship between the thoracic cavity, pleurae, pleural cavity, and the thoracic wall. 8. Describe the structure and function of the mediastinum and diaphragm. 9. Discuss the pattern of lobation and lobulation of the canine and feline lungs. Recognize the clinical lung field. 10. Describe the structure and function of the diaphragm. List the important structures that pass through the diaphragm. 11. Underline the differences in the respiratory system and thoracic wall of the dog and cat.	2,3, 4
19 – 22	1. Explain the surface anatomy, internal structure, blood and nerve supply and function of the heart.	2,3, 4

Cardiovascular System and Lymphatic system	2. Describe the structure of the pericardium and pericardial cavity. 3. Discuss the association between the pleura and pericardium. 4. Recognize the large blood vessels associated with the heart. 5. Classify the blood vessels depending upon their gross structures. 6. Discuss the pattern of systemic and pulmonary blood circulation in adult animals. 7. List the paired and unpaired branches of the thoracic and abdominal aorta. 8. list important landmarks on the thoracic wall used in auscultation of the heart. 9. Underline the differences in the cardiovascular system of the dog and cat. 10. Describe the organs of the lymphatic system of the body. 11. List and describe the major lymphatic vessels of the body.	
23 – 30 Abdomen - Digestive System and urinary apparatus	1. Describe the structure and function of the abdominal wall. 2. List the muscles that form the abdominal wall. 3. Describe the linea alba and rectus sheath. 4. Describe the peritoneum, peritoneal cavity and the mesenteries associated with abdominal viscera. 5. List parts of the digestive system of the dog and cat. 6. Describe the structure of the mouth and oral cavity, lips, cheeks, palate and associated structures. 7. List the components of the elementary canal. 8. Describe the structure and function of the esophagus, stomach, intestines, rectum, anal canal, anus, and anal sphincters. 9. List the mesenteries associated with the elementary canal. 10. Discuss the topography of the digestive system and abdominal organs. 11. Describe the structure of the accessory organs and glands of digestion i.e. the tongue, teeth, salivary glands, pancreas, and liver.	2,3, 4

	12. Underline the differences in the digestive system and abdominal wall of the dog and cat. 13. List the organs of the urinary apparatus of the dog and cat. 14. Describe the external and internal structure of the kidneys of the dog and cat. 15. Discuss the topographic anatomy of the kidneys in the dog and cat. 16. Discuss the structure and topography of the ureters. 17. Describe the structure of the urinary bladder, its location and its relationship with the urethra in the male and female animals. 18. Underline the differences in the urinary apparatus of the dog and cat.	
31 – 32 The pelvic region and Female reproductive system	1. Discuss the structure of the pelvic cavity, its relation with the abdominal cavity and its excavations. 2. List parts of the female reproductive system. 3. Describe the structure and topography of the female gonads i.e. Ovary in the dog and cat. 4. 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. 5. Discuss the structure and function of the accessory sex glands present in the female dog and cat. 6. Describe the birth canal in the female. 7. Describe the structure of the perineum (male and female), list the muscles involved in the formation of the pelvic diaphragm. 8. Describe the anal and urogenital triangles in the male and female.	2,3, 4

	9. Underline the differences in the female reproductive tract and organs of the dog and cat.	
33 – 35 The pelvic region and male reproductive system.	1. List the organs of the male reproductive system of the dog and cat. 2. Describe the structure of the urethra in the males. 3. describe the structure and function of the penis and prepuce of the dog and cat. 4. Describe the structure of the testes in the dog and cat. 5. Discuss and compare the location of the testes and scrotum in the dog and cat. 6. Describe the spermatic cord and vaginal tunic in the dog and cat. 7. Discuss the general features of the inguinal canal and its association with the male and female reproductive organs. 8. Discuss the structure of the male accessory sex glands present in the dog and cat. 9. Discuss The "Tie/lock" mechanism in the dog 10. Underline the differences in the female reproductive tract and organs of the dog and cat.	2,3, 4
36 – 47 The head and nervous system of the dog with Organs of the Special Sense.	1. Describe the structure of the meninges, discuss the circulation of the cerebrospinal fluid and venous sinuses associated. 2. Describe the general features of the nervous system of the dog. Differentiate components of the CNS, PNS, and ANS. 3. Describe the structure of the spinal cord, brachial plexus, and Lumbosacral plexus. 4. List parts of the brain of the dog and cat. 5. Describe the gross structure of the major divisions of the brain. 6. Describe the ventricular system of the brain and circulation of the CSF through the brain and spinal cord. 7. List all the Cranial Nerves and discuss their role in the innervation of the respective organs, respective division of the nervous system. 8. Discuss the structure and passage of the major cranial nerves.	2,3, 4

	9. List the basic components of the autonomic nervous system and nerve supply to the viscera 10. Describe the structure and function of the organs of special sense, the Ear and Eye.	
48 The Endocrine System	1. List the endocrine glands of the body and their function. 2. Describe the structure and topography of the endocrine glands.	2,3, 4
Laboratory session & Topic	**Your lecture/lab Learning Outcome**	**Course learning outcome Number/s**
1	Introduction to Teaching Faculty and Lab Staff. Making Lab Groups and allocating cadavers to each group for dissection. Introduction to lab procedures. Safety and Biosecurity instructions. Lab Requirements. Osteology – Osteological terms 1. Understand the general terminologies used for common features of the bones. 2. Identify the common features of the bones on the various bones of the dog and cat.	N/A 1,2,5
2 – 5 The Appendicular skeleton and The forelimb of the dog	1. Identify the bones of the forelimb and Hindlimb. 2. Describe the anatomical features of the various bones of the forelimb and hindlimb of the dog and cat. 3. Identify and describe the structure of the Extrinsic Muscles of the thoracic limb 4. Describe the origin, insertion, function, and innervation of the extrinsic muscles of the forelimb of the dog and cat. 5. Identify the Intrinsic Muscles of the thoracic limb.	1,2,3, 4, 5

	6. Describe the origin, insertion, function, and innervation of the following intrinsic muscles of the forelimb of the dog and cat a. lateral and medial muscles of the scapula and shoulder. b. caudal muscles of the brachium (Arm) c. cranial muscles of the brachium (Arm). d. Cranio-lateral muscles of the antebrachium (forearm) e. Caudo-medial muscles of the antebrachium (Forearm) 7. Recognize major differences in the extrinsic and intrinsic muscles of the dog and cat.	
6 – 7 The Axial Skeleton and The hindlimb of the dog	1. Identify and describe the bones of the hindlimb and their important features in the dog and cat. 2. Identify the muscles of the gluteal region and the hindlimb of the dog and cat. 3. Describe the origin, insertion, function, and innervation of the following muscles of the Hindlimb of the dog and cat a. Muscles of the pelvic limb b. Caudal muscles of the thigh c. Medial Muscles of the thigh d. Lateral Muscles of the pelvis e. Caudal Hip Muscles f. Cranial Muscles of the Thigh g. Muscles of the Leg (Crus)	1,2,3, 4, 5
8 The Muscles of the trunk.	1. Identify and describe the bones of the Axial Skeleton. 2. Identify the hypaxial and epaxial muscles of the neck and trunk. 3. Identify and describe the origin, insertion, function (action) and innervation of the epaxial and hypaxial muscle systems. a. Hypaxial muscles of the neck, thoracic wall, and abdominal wall. b. Epaxial Muscles systems i.e. transversospinalis system, Iliocostalis System and Longissimus system 4. Identify and describe the structure of the inguinal Canal, deep and superficial inguinal rings, as well as the vaginal tunic	1,2,3, 4, 5

	in the male and vaginal process I the female.	
9 Joints of the forelimb, hindlimb and vertebral column	1. Identify all the joints of the forelimb and describe the following joints of the forelimb, their parts, and associated structures a. shoulder Joint, b. Cubital joint c. carpus d. distal interphalangeal joint 2. Identify all the joints of the Hindlimb and describe the following joints of the hindlimb, their parts, and associated structures a. The hip/coxal joint b. The stifle /genual joint c. The tarsus 3. Explain the joints of the Vertebral column. a. The Altalnto-occipital and atlantoaxial joint 4. Recognize the differences in the joints of the dog and cat.	1,2,3, 4, 5
10 – 13 The Neck and Thorax	1. Identify the blood Vessels and Nerves of the neck 2. Thorax region of the dog and cat. a. Superficial Vessels and Nerves of the Thoracic wall b. Deep Vessels and Nerves of the Thoracic Wall 3. Identify and describe the following structures in the thoracic cavity of the dog and cat. a. the Pleura and Mediastinum, b. Lungs c. Veins Cranial to the Heart d. Arteries Cranial to the Heart e. Thoracic Aorta and Its Branches f. Components of the Autonomic Nervous System g. Vessels and nerves of the thoracic cavity 4. Identify and describe the Heart, pericardium and associated structures in the dog and cat. 5. Recognize the major differences in the dog and cat in the thoracic cavity.	1,2,3, 4, 5

14 – 15 Blood vessels and Nerves of the Thoracic limb.	1. Describe the major blood vessels of the thoracic limb and blood circulation in the thoracic limb. 2. Describe the major areas supplied and drained by following blood vessels and identify them. a. Axillary artery and branches b. Brachial artery and branches c. Median artery and branches d. Arteries of the forearm and paw 3. Describe the innervation of the forelimb in general. 4. Identify the brachial plexus and describe the nerves that form the brachial plexus, and all the nerves derived from the brachial plexus. a. Nerves of the scapular region and arm b. Nerves of the forearm and paw 5. Describe the differences in the vasculature and innervation of the forelimb in the dog and cat.	1,2,3, 4, 5
16 – 19 The abdomen and the pelvis - Digestive system and Urinary system	1. 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. 2. Identify the Inguinal Structures, i.e. Inguinal rings, inguinal canal, vaginal tunic, vaginal process, pudendal vessels and nerves, and lymph node. 3. Describe the abdominal and Peritoneal Cavities, and identify the parietal and visceral peritoneum. 4. Identify the organs of the digestive system and urinary system in the abdominal cavity. 5. Describe the topography od the abdominal viscera. 6. Identify the liver and its lobes, biliary system, gall bladder, pancreas, and spleen. 7. 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, 5
20 – 22	1. Identify parts of the male and female reproductive system in the pelvic cavity of the dog and cat.	1,2,3, 4, 5

The pelvis and the reproductive organs	2. Describe the topography of the organs of the male and female reproductive systems. 3. Identify the external and internal iliac arteries and their branches responsible for blood supply to the pelvic viscera. 4. Describe the general pattern of innervation and identify the nerves in the pelvic cavity. 5. Identify the mammae. 6. Describe the differences in the male and female reproductive organs of the dog and cat.	
23 – 24 Blood vessels and Nerves of the Hindlimb	1. Describe the major blood vessels of the thoracic limb and blood circulation in the pelvic limb. 2. 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 3. Describe the innervation of the hindlimb in general. 4. Identify all the nerves derived from the lumbosacral plexus, describe the formation of the lumbosacral plexus. 5. Identify the following nerves in the hindlimb a. The femoral, ischiatic / sciatic and obturator nerves. b. Nerves of the gluteal region and thigh. c. Nerves of the crus and pes. 6. Describe the differences in the vasculature and innervation of the hindlimb in the dog and cat.	1,2,3, 4, 5
25 – 26 The Head of the dog	1. 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	1,2,3, 4, 5

	e. Cavities of the Skull 2. Identify and describe the following structures in the head of the dog. 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 g. The major nerves of the head 3. Underline the differences in the above-mentioned structures of the head of the dog and cat.	
27 - 28	1. Identify and describe the following structures in the prosected specimen of the skull, meninges, brain and the spinal cord in the dog. a. Cerebrum-Surface Structures Cerebellum b. Brain Stem-Surface Structures Diencephalon c. Mesencephalon d. Ventral Metencephalon e. Myelencephalon f. Telencephalon g. Spinal cord and associated structures 2. Underline the major structural differences in the brain of the dog and cat.	1,2,3, 4, 5
Note – 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.		

XIII. **Course Schedule**

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

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

a. Grading scale

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

b. Types of assessment

No.	Examination / Quiz	Date and Day	Points
1	Lecture Quiz # 1	Monday, Feb 17, 2020	20
2	Midterm Lecture Examination	Thursday, March 12, 2020	60
3	Midterm Laboratory Examination	Thursday, March 12, 2020	40
4	Lecture Quiz # 2	Monday, April 06, 2020	20
5	Final Lecture Examination	Thursday, May 07, 2020	60
6	Final Laboratory Examination	Thursday, May 07, 2020	40
7	Online Mandatory Assignments (Will be Posted on SAKAI)		10
		Total Points	**250**

Note – To make the student familiar with the pattern of laboratory examination, a mock laboratory exam will be conducted at an appropriate time before the Midterm lab Exam.

XV. **E-value use for outcomes assessment evaluation**

a. None

XVI. **Recommended study strategies**

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

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

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

XVIII. **Professionalism statement**

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

XIX. **Attendance policy**

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

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

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

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

XXI. **ExamSoft policy**

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

XXII. **Copyright policy** - You are encouraged to read the SGU regulations governing copyright. Audio and Video Recordings, in case an instructor allows you to record their presentations/demonstrations, shall not be posted on social media sites and made publicly available.

Week	Lab #	Lab Topics
1	1	Introduction to Teaching Faculty and Lab Staff. Making Lab Groups and allocating cadavers to each group for dissection. Presentations 1. Introduction to lab procedures. 2. Safety instructions. Lab Requirements etc. etc. 3. Osteology: Osteological terms
	2	***Pre - Reading (Page 1 to 16)*** *- General concepts and Bones of the forelimb.* **Begin dissection (Page 16 to 28)** Follow Instructions in the lab manual. Reflect the Skin on the left side of the cadaver. **Extrinsic Muscles of the thoracic limb** ***Anatomage Demonstration*– Forelimb Bones**
2	3	**Dissection: (Page 28 – 40)** **Intrinsic Muscles of the thoracic limb (Contd.)** • Intrinsic Muscles of the thoracic limb • Lateral and medial muscles of the scapula and shoulder • Caudal muscles of the brachium (Arm) • Cranial muscles of the brachium (Arm) ***Anatomage Demonstration* – Forelimb Bones + Hindlimb Bones**
	4	***Pre-reading (Page 42 to 51)*** *- Osteology of the pelvic limb* **Dissection: (Page 28 - 40)** **Intrinsic Muscles of the Thoracic limb (Contd.)** • Cranio-lateral muscles of the antebrachium (forearm) • Caudo-medial muscles of the antebrachium (Forearm) ***Anatomage Demonstration* – Hindlimb Bones**

3	**5**	***Pre-reading (Page 77 to 84)*** *- Axial Skeleton Section* **Dissection: (Page 51 – 60)** **Muscles of the pelvic limb** • Caudal muscles of the thigh • Medial muscles of the thigh **Demonstration – Vertebrae and some important features of the Skull**
	6	**Dissection: (Page 60 – 72)** **Muscles of the pelvic limb** • Lateral Muscles of the pelvis • Caudal Hip Muscles
4	**7**	**Dissection: (Page 60 – 72)** **Muscles of the pelvic limb** • Cranial Muscles of the Thigh • Muscles of the Leg (Crus)
	8	**Prereading –** **Lecture notes – Arthrology Section** **Lab manual –** Forelimb joints **(Page 40 to 42)** Hindlimb Joints **(Page 72 to 77)** **Demonstration – Joints**

5	**9**	**Dissection: (Page 84 – 94)**
		
		Muscles of the Trunk and Neck
		
		• Hypaxial Muscles of the
		  ○ Neck
		  ○ Thoracic Wall
		  ○ Abdominal Wall

	10	Inguinal Canal

		• Epaxial Muscles
		  ○ Iliocostalis System
		  ○ Longissimus system
		  ○ Transverso-spinalis system
		
		Demonstration – Joints (Cont[d])

6	**11**	**Chapter 3 - The Neck and Thorax** **Dissection: Page 98 – 120** Related structures, Vessels and Nerves of the neck **Thorax**
	12	Superficial Vessels and Nerves of the Thoracic wall Deep Vessels and Nerves of the Thoracic Wall Pleura and Mediastinum,
7	**13**	Lungs Veins Cranial to the Heart Arteries Cranial to the Heart Thoracic Aorta and Its Branches
	14	Read – Introduction to **Autonomic Nervous System** and **Dissect – Page 119 – 120** **Chapter 3** **Heart and Pericardium (Page 120 – 125)** • Location and relationship with other organs • Pericardium and associated structures • Surface anatomy – Grooves/ Sulci • Internal Structure • Blood vessels at the base • Coronary blood vessels • Cardiac nerves (Refer to ANS section)
8		**Midterm Exam**

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

I. Course Faculty and Staff Information

Course Director/Instructor
Dr. Hector Zerpa Gonzalez
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Dr. Ulrike Zieger
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Office Hours: by appointment

Dr. Hugo Hernandez Fonseca. MV-MSc-PhD
Visiting Candidate, Ass. Prof. Physiology

II. Course location
David Brown Lecture Hall

III. Prerequisite and/or co-requisite courses
Students must be enrolled in DVM term 1.

IV. Required resources
none

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

- A very good, concise textbook is: *Human Physiology: an integrated approach* by Dee Unglaub Silverthorn, 4th edition, Pearson Education, Benjamin Cummings, San Francisco, CA, 2007.
- A very detailed textbook and our physiology "bible": *Guyton and Hall Textbook of Medical Physiology* by JE Hall, 13th edition, Saunders Co, 2016.
- A great book for a graphic approach of basic physiology: *Color Atlas of Physiology* by S. Silbernagel & A. Despopoulus, 6th Edt, Thieme Publishers, N.Y., 2009.
- An excellent human medical physiology textbook contains very educative images to summarize some of the basic functions of the body. *Human Anatomy & Physiology* 1st Edition by Erin C. Amerman and Publisher Pearson.
- Additionally, these two excellent and concise medical physiology textbooks, contain very well design diagrams and figures. They are available as eBooks at SGU library.
Ganong's Review of Medical Physiology by Barrett KE, Barman SM, Boitano S, Brooks HL. 25th edition, McGraw-Hill Education., 2016.
Medical Physiology: The Big Picture by Kibble JD, Halsey CR. McGraw-Hill Education., 2015.

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

VII. Other requirements
none

VIII. Course rationale
This course introduces students to principles of animal physiology and prepares students for subjects taught in Vet. Physiology II, Clinical Pathology, Pathology, Internal Medicine.

IX. Course-level outcomes

The goal of the Physiology I course is to introduce fundamental concepts of the following systems of common domestic animals: nerve & muscle, cardiovascular, hematology (erythron and hemostasis), gastrointestinal system including ruminants, respiratory, and renal systems.
Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice. This course prepares students for subjects taught in Clinical Pathology, Pathology, and Internal Medicine. Working at times in groups and sharing responsibility for a collectively earned group grade will encourage demonstration of professional behavior and team-working skills.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

X. Lesson-level outcomes (LLOs)

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

XI. Alignment of Course Level Outcomes (CLOs) with SVM's Program Level Outcomes (PLOs)

(please note that this table contains only those Program Learning Outcomes, which are relevant for this course).

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

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

XIII. Grading and assessment policy, and grading rubrics

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

2. Assignments
Homework assignments will be given throughout the course as short clinical scenarios or analysis of basic biomedical functions, which serve to apply and reinforce the taught material and to stimulate students to collaborate professionally. The class will be divided by the course adminisitration into groups at the start of the term. On the day when assignments are due, groups will be randomly called upon to present their answers to these assignments and to answer additional questions related to the topic. Groups may choose their presenter for the day. 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. At the end of the term, a cumulative pass will be awarded to the group if a min. of 60% of assignments were passed. If a group passes, each member will receive 10 points; if a group fails, no points will be given to any member. In addition, group members will evaluate each other in terms of teamwork. Evaluations contribute a max of 5 points to the final grade. Evaluations are open from Friday 24th to Thursday 30th April 2020, 5:00 pm local time. **Failure to submit the evaluation on time will result in a zero point score for the evaluation.** The 4 evaluation rubrics are as follows:
- Student attends group activities regularly.
- Student comes prepared and contributes meaningfully to the discussions.
- Student shows willingness to present the group's work in the classroom.
- Student demonstrates a cooperative and supportive attitude as a team member.

The grading scale is as follows:
0 = never; 1 = rarely; 2 = often; 3 = consistently

The examination schedule and grading scheme are as follows:

Assessment	Content. Lectures numbers	Date	POINTS
Quiz 1	1-12	10 Feb	25
Midterm	1-35	16 Mar	60
Quiz 2	36-63	20 Apr	25
Final	1-75	11 May	75
Group Assignments			10
Self & Peer Evaluation		By 30 Apr	5
TOTAL POINTS			**200**

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

XIV. Recommended study strategies

Every learner is different, and these are only general recommendations:
1. pre-reading material before a lecture;

2. revising lecture material within 24 hours of 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 groups and repeat this process. Vocalization is an important element to check and improve your own knowledge and understanding of concepts. *Prepare yourself as if going into an oral exam. If you cannot explain it, you do not know it!*

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

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

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.
Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University. Please note that completion exams can be written or oral exams.

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 will be notified via MyCourses, of all exam related information. Email notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
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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.
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    - SGU ID
    - Completely clear (see-through) bottle of plain water
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    *No other personal belongings will be permitted.

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Please feel free to contact me if you have questions about the material, any concerns, or suggestions on how we can improve the Veterinary Physiology 1 course. I do have an open-door policy, but please make an appointment via email if you think that our discussion would take more than 10 minutes. Thanks for your understanding.

Appendix 1: Lecture Schedule Spring 2020. Dr. Hector Zerpa (HZ). Dr. Ulrike Zieger (UZ).
Appendix 2: Lesson Level Outcomes Spring 2020.

LECTURE SCHEDULE AND CONTENT

ANPH512 / Vet. Physiology I / Lecture Schedule – Spring 2020			
Module 1: Nerve & Muscle (HZ)			
01	24 Jan	1:30 pm	Introduction
02	27 Jan	3:30 pm	Membrane properties/membrane transport
03	28 Jan	3:30 pm	Resting membrane potential
04	28 Jan	4:30 pm	Electrical signals in neurons
05	30 Jan	3:30 pm	Cell to cell signaling in neurons
06	31 Jan	3:30 pm	Autonomic nervous system
07	31 Jan	4:30 pm	Autonomic nervous system
08	03 Feb	3:30 pm	Motor and autonomic reflexes
09	04 Feb	3:30 pm	Muscle
10	04 Feb	4:30 pm	Muscle
11	05 Feb	3:30 pm	Integration: skeletal muscle diseases
12	05 Feb	4:30 pm	Integration: skeletal muscle diseases/Review
13	**10 Feb**	**1:30 pm**	**Quiz 1: 25 Points / Lectures 1-12**
Module 2: Cardiovascular (HZ)			
14	11 Feb	3:30 pm	Overview of the cardiovascular system (***Dr. Hernandez***)
15	12 Feb	3:30 pm	Basic Anatomy of the Heart
16	12 Feb	4:30 pm	Excitation of the heart
17	14 Feb	1:30 pm	Control of cardiac activity/electrocardiography (ECG)
18	17 Feb	3:30 pm	ECG
19	18 Feb	3:30 pm	Cardiac cycle
20	19 Feb	3:30 pm	Cardiac cycle/Heart sounds and murmurs
21	20 Feb	2:30 pm	Pathophysiology of heart arrhythmias
22	20 Feb	3:30 pm	Heart arrhythmias: examples
23	21 Feb	1:30 pm	Integration: heart failure
24	24 Feb	3:30 pm	Blood Flow and pressure
25	25 Feb	3:30 pm	Blood Flow and pressure
26	26 Feb	3:30 pm	Microcirculation and lymphatic
27	26 Feb	4:30 pm	Regulation of blood flow and pressure/ Integration: exercise
28	27 Feb	3:30 pm	Integration: pathophysiology of hypertension and hypotension
Module 3: Hematology (UZ)			
29	28 Feb	1:30 pm	Introduction
30	02 Mar	3:30 pm	Erythron
31	03 Mar	3:30 pm	Erythron
32	04 Mar	3:30 pm	Erythron
33	05 Mar	2:30 pm	Erythron
34	05 Mar	3:30 pm	Blood groups
35	06 Mar	1:30 pm	Review
	16 Mar	**8:30 am**	**Midterm: 60 Points / Lectures 1-35**

Module 3: Hematology (UZ)			
36	16 Mar	4:30 pm	Hemostasis
37	17 Mar	3:30 pm	Hemostasis
Module 4: Gastrointestinal (HZ)			
38	18 Mar	3:30 pm	General Principles
39	19 Mar	3:30 pm	General Principles
40	20 Mar	2:30 pm	Cephalic Phase
41	23 Mar	3:30 pm	Gastric Phase
42	24 Mar	3:30 pm	Pancreas & Liver and Bile
43	25 Mar	3:30 pm	Small Intestinal Phase
44	26 Mar	3:30 pm	Small Intestinal Phase
45	27 Mar	4:30 pm	Large Intestinal Phase
46	30 Mar	3:30 pm	Ruminants
47	31 Mar	3:30 pm	Ruminants
48	01 Apr	2:30 pm	Hindgut Fermenters
49	01 Apr	3:30 pm	Review
Module 5: Respiration (HZ)			
50	02 Apr	3:30 pm	Ventilation of the lung
51	03 Apr	3:30 pm	Pulmonary blood flow
52	03 Apr	4:30 pm	Gas exchange in the lung
53	06 Apr	2:30 pm	Gas exchange in the lung
54	06 Apr	3:30 pm	Gas transport in blood
55	07 Apr	4:30 pm	Gas transport in blood
56	08 Apr	4:30 pm	Regulation of the respiratory function
57	09 Apr	4:30 pm	Regulation of the respiratory function
58	14 Apr	3:30 pm	Non-respiratory functions of the lung and respiration in birds
59	14 Apr	4:30 pm	Review
Module 6: Renal Physiology (HZ)			
60	15 Apr	3:30 pm	Introduction to renal physiology
61	16 Apr	4:30 pm	Function of the glomerulus and tubular system
62	17 Apr	3:30 pm	Function of the glomerulus and tubular system
63	17 Apr	4:30 pm	Review
64	**20 Apr**	**1:30 pm**	**Second Quiz: 25 points. Lectures 38-63.**
65	20 Apr	4:30 pm	Tubular handling of important substances
66	21 Apr	2:30 pm	Regulation of fluid volume and osmolality
67	21 Apr	3:30 pm	Regulation of fluid volume and osmolality
68	22 Apr	3:30 pm	Acid/base balance
69	23 Apr	3:30 pm	Acid/base balance
70	24 Apr	3:30 pm	Pathophysiology of kidney
71	27 Apr	2:30 pm	Pathophysiology of kidney
72	28 Apr	2:30 pm	Review (Renal)
73	28 Apr	3:30 pm	Review (First Module)
74	29 Apr	1:30 pm	Review (Hemostasis/Cardiovascular)
75	29 Apr	2:30 pm	Review (Gastrointestinal/Respiration)
	11 May	**1:30 pm**	**Final : 15 Points / Lectures 65-71** **60 Points / Lectures 1-75**

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

I. Course Faculty and Staff Information

Dr. Ulrike Zieger, CD & Instructor
Prof. Vet. Physiology
Office: Veterinary Office Building (SGU campus map: # 48)
Tel: 444 - 4175 ext 3328
email: UZieger@sgu.edu
Office hours: by appointment

Dr. N. Kutchy
Visiting Candidate, Ass. Prof. Physiology

II. Course location
David Brown Lecture Hall

III. Prerequisite and/or co-requisite courses
Students must be enrolled in DVM term 2, and must have completed ANPH 512 (Vet. Physiology I).

IV. Required resources
none

V. Recommended resources
The following textbooks are recommended:
- *Physiology of Domestic Animals* by O.V. Sjaaastad, K. Hove & O. Sand, 3rd Edition; Scandinavian Veterinary Press, 2016. This should be your main resource.
- *Pathways to Pregnancy and Parturition* by P.L. Senger, 3rd edition, Current Concepts Inc., Washington State University, 2012. This textbook should be used as a supplement to the lecture material presented in Module 4 (Reproduction).
- 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 very detailed textbook and our physiology "bible": *Guyton and Hall Textbook of Medical Physiology* by JE Hall, 13th edition, Saunders Co, 2016
- A great book for 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.

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

VII. Other requirements
none

VIII. Course rationale
This course builds on material presented in Physiology I and prepares students for subjects taught in Clinical Pathology, Pathology, Internal Medicine and Theriogenology. The goal of the Physiology II course is to introduce fundamental concepts of the following systems of common domestic animals: nervous system (i.p. the sensory nervous system); metabolism; endocrinology and reproduction. Students will acquire a solid working knowledge of these systems' physiological functions in health and their interrelationships with other systems of the body. The student will be exposed to consequences and signs of these systems' malfunctions and to basic clinical cases. Working at times in groups and sharing responsibility for a collectively earned group grade will encourage demonstration of professional behavior and team-working skills.

IX. Course level outcomes (CLOs)
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 completion of the Veterinary Physiology-2 course, students should be able to:

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

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

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

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

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

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

CLO 8. Reproduction-Clinical: Apply the acquired knowledge of the reproductive systems 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 (LLOs)
Detailed lesson-level outcomes have been designed for every lecture topic and are found in a separate pdf.

XI. Alignment of Course Level Outcomes (CLOs) with SVM's Program Level Outcomes (PLOs)
(please note that this table contains only those Program Learning Outcomes, which are relevant for this course).

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 this document.

XIII. Grading and assessment policy, and grading rubrics

1. Examinations:
There will be 3 examinations as listed in the table below: quiz-1, quiz-2 and a final examination. The final exam will be fully comprehensive.
Factual questions on these exams expect a student to demonstrate in-depth and detailed knowledge about the material covered. Applied questions serve to reinforce the acquired knowledge and will focus on broader concepts, integration and especially on clinical applications. All examinations are sequestered. Exams may contain multiple choice (single best answer), and fill-in-the-blank questions. Examination questions come from material covered in lectures, handouts, group assignments, and any other sources the instructors indicate. All rules and regulations concerning examinations including E-SOFT are detailed in the SGU Student manual.

2. Assignments
Homework assignments will be given throughout the course as short case studies, which serve to apply and reinforce the taught material and to stimulate students to collaborate professionally. The class will be divided into groups at the start of the term. On the day, when assignments are due, groups will be randomly called upon to present their answers to these assignments and to

answer additional questions related to the topic. Groups may choose their presenter for the day. 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. At the end of the term, a cumulative pass will be awarded to the group if a min. of 2 of 3 assignments were passed. If a group passes, each member will receive 10 points; if a group fails, no points will be given to any member.
In addition, group members will evaluate each other in terms of teamwork. Evaluations contribute a max of 5 points to the final grade. Evaluations are open from Friday 24th to Thursday 30th April 2020, 5:00 pm local time. Failure to submit the evaluation on time will result in a zero point score for the evaluation. The 4 evaluation rubrics are as follows:
- Student attends group activities regularly.
- Student comes prepared and contributes meaningfully to the discussions.
- Student shows willingness to present the group's work in the classroom.
- Student demonstrates a cooperative and supportive attitude as a team member.
The grading scale is as follows:
0 = never; 1 = rarely; 2 = often; 3 = consistently

The examination schedule and grading scheme are as follows:

Assessment	Content	# of Qs	Time	Date	POINTS
Quiz 1	Lectures 1 - 16	30	40 min	28 Feb 20	30
Quiz 2	Lectures 18 - 33	30	40 min	17 Apr 20	30
Finals	Lectures 34 - 45 Comprehensive: Lectures 1-33	25 35	80 min	11 May 20	60
Assignments				throughout	5
Peer Evaluation				30 Apr 20	5
TOTAL POINTS					**130**

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

XIV. Recommended study strategies
Every learner is different, and these are only general recommendations:
1. pre-reading material before a lecture;
2. revising lecture material within 24 hours of the given lecture, ensuring that the material is understood;
3. for exam preparation, self-challenge is crucial: explain the learned material to yourself without having to refer to your handouts and notes, using the lecture level outcomes as a guide. Then work in small groups and repeat this process. Vocalization is an important element to check and

improve your own knowledge and understanding of concepts. *Prepare yourself as if going into an oral exam. If you cannot explain it, you do not know it!*

XV. Instructor's expectations of the student
Students are expected to adhere to the Professionalism Policy (see XVII), and at all times demonstrate respect towards SGU faculty, staff, fellow students and the general public.

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

XVIII. Policy regarding missing examinations and/or failure of submission of assignments
The policy relating to missing examinations is detailed in the SGU Student Manual 2019/2020. 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. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

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Tel: 444 4175 ext 3328
email: uzieger@sgu.edu

Ulrike Zieger

Appendix 1: Lecture Schedule Spring 2020

Appendix 2: Lesson Level Outcomes (LLOs) Spring 2020, please see separate pdf under Sakai Resources "ANPH 513 - Lecture Level Outcomes – Spring 2020"

Appendix 1: LECTURE SCHEDULE AND TOPICS

Spring 2020: SGU-SVM / ANPH 513 (Physiology II) / U.Zieger & N.Kutchy (7 Feb)		
Module 1: NEUROSCIENCE 2		
1	20 Jan	Revision (NS anatomy, physiology 1)
2	21 Jan	Principles of neurophysiology
3	27 Jan	Pain
4	29 Jan	Pain
5	30 Jan	Proprioception
6	4 Feb	Touch & Thermoreception
7	5 Feb	Hearing
8	6 Feb	Balance and Vision
9	10 Feb	Vision
10	12 Feb	Conscious Motor Control
11	13 Feb	Principles of Neurological Lesion Localization
12	14 Feb	Principles of Neurological Lesion Localization
13	17 Feb	Principles of Neurological Lesion Localization
Module 2: Metabolism		
14	20 Feb	Major pathways - review
15	21 Feb	Major pathways - review
16	24 Feb	Major pathways - review
17	28 Feb	**Quiz 1: lectures 1-16 (30 points)**
18	28 Feb	Ruminant metabolism
19	2 Mar	Whole body metabolism
20	3 Mar	Starvation & fasting
21	5 Mar	Liver functions & Bilirubin
22	17 Mar	Thermoregulation
Module 3: Endocrinology		
23	19 Mar	General endocrine mechanisms
24	20 Mar	Hypothalamic-pituitary axis
25	23 Mar	Pancreas
26	26 Mar	Pancreas
27	27 Mar	Thyroid gland
28	30 Mar	Thyroid gland
29	31 Mar	Growth Hormone
30	2 Apr	Adrenal Cortex - Glucocorticoids
31	3 Apr	Adrenal Cortex - Glucocorticoids
32	7 Apr	Adrenal Cortex - Mineralocorticoids
33	9 Apr	Ca-P Homeostasis
Module 4: Reproduction		
34	15 Apr	Male reproduction
35	16 Apr	General concepts of the female reproductive cycle
36	**17 Apr**	**Quiz 2: lectures 18-33 (30 points)**
37	17 Apr	General concepts of the female reproductive cycle
38	20 Apr	General concepts of the female reproductive cycle
39	21 Apr	General concepts of the female reproductive cycle
40	22 Apr	General concepts of pregnancy and parturition
41	24 Apr	Lactation
42	27 Apr	Reproduction in the sow and cow
43	28 Apr	Reproduction in the mare
44	29 Apr	Reproduction of the queen
45	29 Apr	Reproduction in the bitch
Final Exam: Lectures 1 - 45 (60 points)		

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 2020

I. Course Faculty and Staff Information

The course director is Prof. Dr. Arno H. Werners DVM, MEd, PhD, DECVPT (awerners@sgu.edu). 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 held in Ray and Jan Sis Lecture Theatre 1

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. 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 Other requirements

None.

VII. 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.

VIII. Course goals

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.

IX. Course-level objectives/learning outcomes

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. A differential diagnosis
   b. The importance of sample collection
   c. Additional diagnostic tests
   d. 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).
   a. 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 cognizense of demographical, socio-economical and cultural considerations.

X. Detailed course content

The course is divided into several sections where general principles will be discussed in detail, followed by case presentations by the students. The plant toxicology is introduced and students are expected to complete an assignment on selected plant toxins (see below of a detailed description).

The first section covers general principles of toxicology and describe the difference between veterinary regulatory toxicology and veterinary clinical toxicology. Some time will be devoted to describe different toxicological tests that can be used to assess the toxicity of compounds during the regulatory approval process.

General aspects of organ toxicity are discussed including the most common intoxications in different animal species.

Principles of toxicology:

1. General characteristics of the toxic response including the mechanism of action and spectrum of undesired effects
2. Characteristics of exposure – route and site of exposure – duration and frequency of exposure
3. Dose response relationship, including the therapeutic index or margin of safety and exposure
4. Variation in toxic responses – selective toxicity – species differences – individual differences in response – toxicity testing
5. Reaction of the toxic substance with the target molecule – types of reactions – effects of toxicants on target molecules – toxicity not initiated by reaction with target molecules

Absorption, distribution and excretion of toxicants:

1. Cell membranes – transport of xenobiotics (passive transport versus active transport)
2. Absorption – routes of absorption: gastrointestinal tract – lungs – skin – special routes of administration
3. Distribution – volume of distribution – storage of toxicants in tissues – passage of toxicants through different barriers
4. Excretion of toxicants – urinary – fecal – exhalation – other routes of elimination

During the course, both non-organ directed toxicity and target organ toxicity will be discussed. Each subject will be introduced by a lecture with pertinent general information.
Topics to be discussed include:
Non-organ directed toxicity:

1. Chemical carcinogens
2. Genetic toxicology

Target organ toxicity:

1. Toxic responses of different organ systems (the immune system – the liver – the kidney – the respiratory system – the nervous system – the heart and vascular system – the reproductive system – the endocrine system)

Clinical toxicology student presentations:
These lectures are all mandatory!
All student presentations will be preceded by an introductory lecture where we will present the basics of toxicodynamics related to the organ system, common approaches to clinical cases and clinical manifestations of common toxicities of the respective organ systems to give the students

an insight in the potential patients they might encounter and how to deal with these patients.
During the case presentations students will present the major clinical signs (what the toxin does to the body), clinical signs (pathophysiology), general lab findings (clinical pathology), diagnostic tests (is there a specific test for it?) and treatment (decontamination, general treatment, specific treatment/antidote), the prognosis and monitoring requirements (before and after onset of clinical signs) of the most common intoxications in companion animals, horses and food producing animals. Subjects for the presentations will be handed out at the beginning of the course; students prepare for the presentations during two designated lecture hours and present their findings according to the course schedule.
Requirements for the presentations, including the grading rubric, as well as a powerpoint template will be available on Sakai. Students will be evaluated on their presentation using a rubric. This rubric will be used to grade the content of the presentation.
Pertinent information for each intoxication not covered by the students will be addressed by the lecturers at the end of each individual presentation.

The plant toxins will be introduced in two lectures. Students are required to complete an assignment on plant intoxications and will work together in the same groups as for the oral presentations.
Students will be given a group of plants and will be asked how to differentiate between plant toxins based on clinical signs. Differentiate prognosis, diagnosis, treatment for each individual plant on the assignment.
The assignment will be graded with the use of a rubric and counts towards the student's final grade. Students will also evaluate their group members for both the plant toxicity assignment and the clinical toxicology case presentations (peer evaluation rubric). The peer evaluation is done by the whole group together. Level of contribution and reflection on their work together are assessed. Completion of the peer evaluation counts towards the final grade in the course.

The topics for the presentations:

Group	Clinical toxicology case presentation	Plant toxicology assign-ment
1	Anticoagulant rodenticides	I-I Blood dyscrasia
2	Ionophores horses versus cattle	I-II Blood dyscrasia
3	Nitrate/nitrite	I-III Blood dyscrasia
4	Crotalid envenomation	I-IV Blood dyscrasia
5	Blister beetle	I-V Blood dyscrasia
6	Oak horses versus cattle	II-I Bradycardia
7	NSAIDs in horses	II-II Bradycardia
8	NSAIDs in companion animals	II-III Cardiomyopathy
9	Grapes and raisins	II-IV Cardiomyopathy
10	Ethylene glycol	II-V Laminitis
11	Arsenic	III-I Diarrhea
12	Ochratoxin A	III-II Diarrhea
13	Fumonisin	III-III Impaction
14	Organophosphates	III-IV Inflammation
15	Marijuna	III-V Inflammation
16	Avermectins in MDR1 deficient dogs	III-VI Salivation
17	Lolitrem B in horses	III-VI Anorexia
18	Box elder tree	III-VII Colic
19	Metronidazole	III-VIII Colic
20	Cymbalta®	III-IX Colic
21	Aflatoxin B1	IV-I Liver
22	Acetaminophen	IV-II Liver
23	Xylitol	IV-III Liver
24	Pyrrolizidine alkaloids	V-I CNS Ataxia
25	T2 toxin	V-II CNS Hyperexcitability
26	Zearalenone	V-III CNS Hyperexcitability
27	Fescue in horses	V-IV CNS Hyperexcitability

28	Deoxynivalenol	V-VI CNS Muscle contractions
29	Buffo toad	V-VII CNS Muscle weakness
30	Chocolate	VI Respiratory
31	Gentamicin	VII Urinary
32	Serzone®	VIII Skin

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

This information can be found at the end of the syllabus.

XII. Course Schedule

See table at the end of this syllabus.

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 during a midterm and a final examination. All the material presented (notes, articles, book chapters, lecture slides) is subject in the exams, unless the lecturer specifically indicates differently. The midterm examination (36 questions; see breakdown in the table below) will cover all material presented before the scheduled examination (lectures 1-19). The final exam (46 questions; see breakdown in table below) will cover all material presented during the term. The final grade will consist off the mark for the midterm examination (30%) and the mark for the final examination (45%). The student presentations count for 5% of the final grade; completion of the peer assessment accounts for 5% of the grade. The plant toxicology assignments account for 15% of the grade.

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

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

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

quiz or examination. Comments and challenges should be communicated through the designated SGA student representative within 24 hours.

Midterm examination	Lectures: 2 questions per lecture hour for lectures 2-7, 11, 13, 15 and 18	20 questions	36 questions in total
	Presentations: 1 question per toxin presented in lecture 12, 14, 16, 19	16 questions	
Final examination	Lectures: 1 question per lecture hour for lectures 2-7, 11, 13, 15 and 18	10 questions	46 questions in total
	Lectures: 3 questions per lecture for lectures 21, 23, 29 and 30	12 questions	
	Presentations: 1 question per **lecture** for lectures 12, 14, 16, 19	4 questions	
	Presentations: 1 questions per toxin presented in lectures 20, 22, 25, 27	16 questions	
	Presentations: 1 question per lecture for lectures 20, 22, 25, 27	4 questions	

XV. Recommended study strategies

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

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

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

XVI. 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.

XVII. 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 de nes the interests, reputation, and stature of the University com-

munity. 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 t 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

All matriculated students are expected to attend all assigned academic activities for all courses currently registered. **Please be reminded that the student presentation lectures are all mandatory**.

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

Students who fail to appear for an examination without a valid reason (see Absence Reporting Procedures below) 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.
Medical Excuse: 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 section of the University website. This form will be sent automatically to the Course Director(s), University Health Services, Dean of Students, and Dean of the School of Veterinary Medicine. 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 such excuses in an academic year. The third excuse results in the case being reviewed by the Dean's Council, which may result in a mandatory medical leave of absence (LOA). The policies regarding completion and make-up examinations are at the option of the Course Director.
In all other cases, students are referred to specific pages in the Student Manual.

XX. ExamSoft policy

You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. ExamSoft is able to track testing behaviours, i.e. testing time, testing location, and any deviations from the honour code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honour Code in the student handbook. If you have a computer problem go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam. You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in ExamSoft so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email afterwards to ensure that your answer file has been uploaded. When not provided for in this paragraph, students are referred to the student handbook.

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. Reproduction in whole or in part is prohibited.

XXII. Appendices

Course schedule:

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
1	1	11.30-12.20 am	13 jan	Dr. Werners	Introduction and course outline - description of objectives and explanation of assignment and presentations
	2	11.30-12.20 am	15 jan	Dr. Werners	General toxic principles
2	3	9.30-10.20 am	22 jan	Dr. Werners	Regulatory versus clinical toxicology
	4	10.30-11.20 am	23 jan	Dr. Werners	Toxicokinetics
	5	9.30-10.20 am	24 jan	Dr. Werners	Genetoxicity, mutagenicity and carcinogenicity
3	6	8.30-9.20 am	27 jan	Dr. Kumar	Introduction to plant toxicity
	7	10.30-11.20 am	30 jan	Dr. Guttin/ Dr. Werners	Approach of the patient with an intoxication: Toxins divide and conquer
	8	10.30-11.20 am	31 jan	Dr. Guttin/ Dr. Werners	Approach of the patient with an intoxication: Toxins divide and conquer. In class - self-study work on presentations
4	9	11.30-12.20 am	3 febr	Group work	Self-study plant toxins assignments
	10	9.30-10.20 am	5 febr	Dr. Werners	In class - self-study work on presentations
	11	10.30-11.20 am	6 febr	Dr. Werners	Intro to CVS toxins
5	12	9.30-10.20 am	10 febr	Dr. Guttin/ Dr. Werners	CVS case presentations Anticoagulant rodenticides Ionophores horse versus cattle Nitrate/nitrite Crotalid envenomation
	13	8.30-9.20 am	12 febr	Dr. Guttin/ Dr. Werners	Intro to GI toxins

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
	14	8.30-9.20 am	13 febr	Dr. Werners	GI case presentations Oak (horse versus cattle) Blister beetle NSAIDs horse NSAIDs CA
6	15	10.30-11.20 am	17 febr	Dr. Guttin/ Dr. Werners	Intro to renal toxins
	16	8.30-9.20 am	20 febr	Dr. Werners	Renal case presentations Arsenic Grapes and raisins Ethylene glycol Ochratoxin A
7	17	11.30-12.20 am	24 febr	Group work	Self-study plant toxins assignments
	18	9.30-10.20 am	26 febr	Dr. Werners	Intro to CNS toxins
	19	8.30-9.20 am	28 febr	Dr. Werners	CNS case presentations Fumonisin Organophosphates Marijuana Avermectins in MDR1 deficient dogs
8		**8.30-9.30**	**2 mar**		**Midterm examination**
9	20	10.30-11.20 am	10 mar	Dr. Werners	CNS case presentations Lolitrem B in horses Box elder tree Metronidazole Cymbalta®
	21	8.30-9.20 am	12 mar	Dr. Guttin/ Dr. Werners	Intro to liver toxins
10	22	9.30-10.20 am	16 mar	Dr. Guttin/ Dr. Werners	Liver case presentations Aflatoxin B1 Acetaminophen Xylitol PAs in horses
	23	8.30-9.20 am	18 mar	Dr. Guttin/ Dr. Werners	Intro to mycotoxins
11	24	11.30-12.20 am	23 mar	Group work	Self-study plant toxins assignments

WEEK	LECTURE	TIME	DATE	LECTURER	TOPIC
	25	8.30-9.20 am	26 mar	Dr. Werners	Mycotoxin case presentations T2 toxin Zearalenone Fescue in horses Deoxynivalenol
12	26	11.30-12.20 am	30 mar	Group work	Self-study plant toxins assignments
	27	9.30-10.20 am	1 apr	Dr. Guttin/ Dr. Werners	Miscellaneous toxins case presentations Buffo toad Chocolate Gentamicin Serzone®
13	28	8.30-9.20 am	6 apr	Group work	Self-study plant toxins assignments
	29	11.30-12.20 am	9 apr	Dr. Kumar	Top-10 plant intoxications
	30	9.30-10.20 am	15 apr	Dr. Kumar	Top-10 plant intoxications
17		**8.30-11.00 am**			**Final examination**

Student Learning Objectives:

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Introduction (INT)	1. Articulate the importance of toxicology in the veterinary curriculum 2. Differentiate between acute-subacute and chronic toxicities 3. Compare and contrast the effects of dose and exposure on clinical signs of toxicity 4. Compare and contrast the different types of adverse drug reactions	7, 8, 9	
Toxicokinetics (TK)	1. Describe common toxicokinetic principles 2. Interpret toxicokinetic data and draw conclusions regarding the potential clinical effects 3. Compare and contrast the different effects of routes of exposure and its clinical repercussions 4. Interpret dose-response relationships and put them into a clinical perspective	2, 3	
Terminology and Toxicological testing (TEST)	1. Compare and contrast the use of different in vitro and in vivo 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	A9; C9

TOPIC	STUDENT LEARNING OBJECTIVES. AT THE END OF THE LECTURE(S), THE STUDENT IS ABLE TO:	COURSE LEVEL OUTCOMES	PROGRAM LEVEL OUTCOMES
Carcinogenicity and Mutagenicity (MUT)	1. Compare and contrast the different in vitro tests used to evaluate carcinogenicity, mutagenicity or gentoxicity 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	A2; A3; A6; C1; C9
Hepatotoxicity and Intervention (HEP)	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	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Cardiotoxicity (CARDIO)	1. Compare and contrast the different cardiotoxic chemicals, their mechanisms of action, clinical signs and therapeutics	1, 2, 3, 4, 5, 9	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Nephrotoxicity (KID)	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	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Mycotoxins (MYCO)	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	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Immuno (IMM)- and Neurotoxicity (NEURO)	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	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Plant Toxicology (PLANT)	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	A2; A3; A5; A6; B1; B2; B8; C1; C2; C6; C7; C8
Clinical Toxicology of Food Producing Animals (CT FA)	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	A9; B1; B2; B8; C8
Clinical Toxicology of Companion Animals (CT CA)	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	A9; B1; B2; B8; C8
Clinical Toxicology of the Equine Patient (CT EQ)	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	A9; B1; B2; B8; C8

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

ANATOMY DEPARTMENT

***Ethics in Veterinary Practice* (1 Credit)**

COURSE NUMBER ANPH522 TERM 3 (Term 1-6)

TERM DATE (Fall and Spring Year)

I. Course Faculty and Staff Information

Course Director Name, Dr. Austin P Kirwan, M.A., M.B.A., Cert. A.V.P. Vet. G.P., B.V.Sc., M.R.C.V.S. RCVS Recognised Advanced Practitioner, Associate Dean for UK Clinical Affairs

Email Address akirwan@sgu.edu or barnlodge@aol.com

Office Location Ormskirk, Lancashire, UK.

Office Hours 24/7

II. Course location

Lecture Hall and Laboratory depending upon lecture.

III. Prerequisite and/or co-requisite courses

Entry to term 3

IV. Required resources None.

V. Recommended resources None

VI. Other requirements None

VII. Course rationale (catalogue course description)

Veterinary students have a particular style of learning facts and recounting for examinations. This course does not follow this traditional method of teaching but seeks to stimulate the artistic side of veterinary medicine and engage the student in the real life issues faced in practice. This is difficult subject matter to teach and assess and often students who struggle with the traditional DVM course can excel in

a more open environment. The final written assignment is a learning experience in itself and should be seen as such.

Course goals (Instructor's point of view)

Student goals are to develop the skills to identify professional behaviour in self and others and relate this to a clinical environment whilst considering society, the client, fellow professional team members and the patient. Financial considerations will also be expected to be considered. Students will evidence their learning in the following areas:

1. The nature of the animal and the nature of the person including human animal relationship and animals in society.

2. Principles of veterinary business

3. Professional development and life long learning

4. The law and professional standards

5. The veterinary business- fees, openness, transparency, responsibilities to patient, client, colleagues and society, negligence, consent, whistle blowing, managing the team, employment, legislation effecting the veterinary profession

6. Money – management of personal finances, business finances, investing, insurance, health, banks, accountants, lawyers, consultants, remuneration, purchase tax, income tax, negotiating a discount, internet sales.

7. Communication – consultation skills, IT, medical informatics, handling data, marketing, social media

8. Employment – being employed and being the employer – good boss bad boss.

9. Hot potatoes – embryology and genetic engineering, euthanasia, distanasia, benemortasia, disproportionate treatment, financial constraints, animals with no owner, farm animals, global warming, animal experimentation, performing animals, the insurance of animals, evidence based medicine, etc.

10. Clinical governance – clinical audit, education, unexpected outcomes, complaints handling, research.

11. How do I make a decision? How do I get help and help others?

12. Open forum – what did we miss out and you want to cover?

VIII. Course-level objectives

On completion the student should have the skills to be an active member of the veterinary professional team and understand their service to society and the value they contribute to the financial basis of a business. The facts to remember are small compared to other veterinary courses but only by advanced understanding of them can they be applied professionally. Students will be able to self reflect on their own skills, judgements and ethical thinking processes and with this analysis be able to evaluate behaviour for the common good. Students will be able to recognise good and bad practice in others and take appropriate action. Students will have an intrernational understanding of their function and how they relate to other professionals especially with respect to public health issues and the principle of one medicine thus being able to be creative in policy development, personal advancement and within the veterinary community. Evidence of learning is via a 2,000 word referenced essay which include a reflection on learning and self development.

IX. Detailed course content

A reader is up loaded to Sakai for student use which has details of the course which are briefly described in Course Goals above.

X. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies (will be required upon curriculum mapping completion)

Not applicable at this time.

XI. Course Schedule

Lectures are numbered 1-15 and are scheduled by the Dean's office on a term by term basis.

All delivered by Dr. Austin Kirwan.

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

Grading scale: Pass/Fail

Grading will be pass/fail. A fail will be gained if more than 2 lectures are missed. A 2,000 word assignment will be required which is to be written to a publishable standard, fully referenced. References may be taken from reference books, the internet, peer reviewed papers, legal documents, legislation, religious texts, personal communications etc. A selection of titles for the assignment will be given. Students may present a proposal,

(Assignment 1) for approval, of their own choice as an alternative. Students will not pass the written assignment if poorly presented, typo errors, poor use of English, or if the content raises ethical, legal or professional issues which are not accepted by professional bodies or civil law. Students in their assignment are requested to refer to the juristiction to which their work relates due to regional variance. Scripts will be checked for plagerism and will be referred for conduct issues if found. Hand in will be 2 weeks after last lecture with no extensions, but students are encouraged to present at any time they wish if the subject matter of choice has been covered prior to this date.

XIII. E-value use for outcomes assessment evaluation

List E-value assessments here

Examples:

Coursework submission

XIV. Recommended study strategies

Veterinary students, in the main, have a certain approach to learning. Universities are very good at making graduates into filing cabinets of fact; however, this is not always the best way to personally form a veterinary surgeon. Many other skills are required, practical, manual dexterity, listening skills, interview skills, consultation skills, people management and so on. Students will be trained in how to perform various procedures in all sorts of situations, what this course seeks to address is to ask the question – should I? There are many things we can do but a professional should always ask the question as to how they are applying their knowledge in a certain situation. To only have the clinical or scientific knowledge is like breathing with one lung; to know when to use it is breathing with both lungs.

Students will be required to ask many questions and form view points; your social reference points may well be challenged and the aspirations for the future re focused. The aim is to make students sure of where they stand on sound ethical and philosophical principles so they can defend themselves when under scrutiny and also to be able to work out independently what to do in a tricky situation. The style of learning is very different to what they have probably been exposed to previously. The lectures will not be the regaling of fact but an exploration of concepts and how they can be applied and students will be expected to engage with the material and take full participation in any activities.

XV. Instructor's expectations of the student

Students should present with experience of life to draw on and an open mind. A positive approach is vital to pre judge or pre-empt what is presented can be counterproductive so students must not get notes or reading material from previous terms. Students should be professional at all times, engage with others, partake of the tasks assigned to them and be receptive to others.

XVI. Professionalism statement

Students should be professional at all times; most especially in this class. Unprofessional conduct may incur a fail grade at the discretion of the course directror.

XVII. Attendance policy

Students will be awarded a fail if more than 2 lectures are not attended.

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

Assignments which are not submitted on time will be awarded a fail. Some assignments will require to be resubmitted and the new submission date will be indicated to the student when feedback is given.

XIX. ExamSoft policy N/A

XX. Copyright policy N/A

Appendices (not applicable):

LARGE ANIMAL CLINICAL PARASITOLOGY – RUMINANT AND EQUINE

ELEC 511 (veterinary students) and VSGP 830 (graduate students)
2 credits
February 17 – 22 & February 24 – 28, 2020
Lectures: 6 – 6:50 pm & 7 - 7:30 pm (Jan & Ray Sis Lecture Hall # 2)
Field Trip: February 22 (TBA)

INSTRUCTOR:
Ray M. Kaplan, DVM, PhD, Dip. ACVM, Dip. EVPC
Professor
University of Georgia, College of Veterinary Medicine
Athens, GA 30602
rkaplan@uga.edu

Course Director:
Dr. Rhonda Pinckney
Department of Pathobiology
rpinckney@sgu.edu or **pinckney.rhonda2@gmail.com**
Tel: 534-1982 (cell) or 444-4175 ext. 3671 (office)

COURSE DESCRIPTION/OBJECTIVES

Description: The course will focus on the biology, epidemiology and control of clinically important nematode parasites of ruminants and horses. Emphasis is placed on clinical and diagnostic issues relating to host-parasite interactions and the development of evidence-based parasite control programs. Traditional programs for parasite control are no longer valid and often fail due to the high prevalence of anthelmintic resistant parasites. Consequently, new strategies and approaches are required that consider broad issues relating to the biological factors associated with the development of drug resistance as well as modern principles of evidence-based veterinary medicine. This course will cover broad issues relating to host-parasite interactions, parasite epidemiology, parasite diagnosis, and the development of drug resistance. This information will then be used to explain how to control parasites in ruminants and horses using evidence-based principles, and how drug resistance can be prevented and managed, while still achieving superior parasite control that is sustainable.

Registration: Come to the SVM trailer (where Dr. P's office is located) & fill out a registration form. The registration forms will be in a folder on Ms. Edward's (secretary) desk.

Prerequisite: Term 3 to 6 students or alternatively proof of having completed a Parasitology course.

Objectives: Upon completion of this course, students will be able to diagnose and treat parasitic infections of ruminants and horses and design medically sound parasite control programs tailored to the needs of individual farms.

GRADING POLICY: "PASS" for veterinary students

<u>Grades for graduate students only</u>!

A = 89.5% or >
B+ = 84.5 - 89.4%
B = 79.5 - 84.4%
C+ = 74.5 - 79.4%
C = 69.5 - 74.4%

Scheduled Quizzes (100%) – Two 50 point take home quizzes: Quizzes will be posted to the course web site (on Sakai) or emailed to the students. They are open book ***but students are expected to work alone and submit a quiz that reflects their own work.*** **Unless prior arrangements are made with the instructor, quizzes turned in late are subject to a deduction of 6 points/day late.**

CLASS PROJECT: ***Graduate students*** will work in small groups (TBD based on class size) and each group will be provided with a unique real-life farm history. Students will need to write up a critique of the current parasite control program used by the farm (pros, cons, etc.) and provide recommendations for improvements. Suggested length is 4-6 double-spaced pages. **Project reports will be due by TBA.**

Graduate students (VSGP 830) will be required to do a class project. Students may work independently or in groups of 2. Projects should be emailed to Dr. Kaplan by the TBA date. Interaction within groups and with others outside of the group is encouraged. **Unless prior arrangements are made with the instructor, projects turned in late are subject to a deduction of 8 points/day late.**

LABS AND FIELD TRIP (Tentative Date of February 22): There will be an optional (*but encouraged*) field trip where students will perform clinical evaluations on goats or sheep and earn to perform FAMACHA. Body condition scores of animals will be recorded and each animal will be FAMACHA scored. Blood and feces will also be collected for performing PCV and fecal egg counts (FEC), which will be performed as a required part of the class. The data collected will be discussed to facilitate improved understanding and interpretation of clinical parasitological picture. **We will meet in the Bacteriology Lab on February 24 to record the body scores, perform the FEC, PCV (and compare the FAMACHA scores to the PCV).**

TEXT/REFERENCE MATERIAL: No textbooks are required; reference material will be taken from the current veterinary literature. Required readings will be provided as pdf files on the class web page (on Sakai) or will be distributed. Content of these assigned readings will be considered as testable material. Additional optional readings also will be made available on the class web site.

READINGS and ASSIGNMENTS: There will be 1 assigned reading for most lecture periods. During class, prior to each discussion period, each student will be required to submit one question from the reading they would like to have discussed.

LECTURES: There will be a 50 minute lecture, 10 minute break, and then a 30 minute discussion period on most class days. When needed, the discussion may be waived to cover additional class material.

Week-1
1. Introduction to course, Host-parasite interactions, Pathological impact of parasites, Epidemiology of nematode transmission, Concepts and principles in the control of gastrointestinal nematodes,
2. Interpretation and use of fecal egg counts in clinical practice, Fecal Egg Count Reduction Tests, Assignment of projects

Quiz 1: lectures 1-2 + required readings (due TBA)

3. Ruminant anthelmintics and considerations for appropriate drug choice
4. Equine anthelmintics and considerations for appropriate drug choice
5. Anthelmintic resistance

Quiz 2: lectures 3-5 + required readings (due TBA)

Class Field Trip to Farm (Saturday February 22) - TBA

Week-2
6. **Laboratory – FEC and PCV from farm visit, Discussion of results in the Bacteriology Lab**
7. Parasite control programs for sheep/goats
8. Parasite control programs for cattle
9. Parasite control programs for horses I
10. Parasite control programs for horses II

SVM Course Code: LAMS 501
Spring 2020 Online Course Completion

Course Directors: Dr. Zainab Momoh & Dr. Kerri Nigito

Previous Clinical Skill Labs	Revised Clinical Skills	Weekly Learning Schedule	Assessment Schedule
Bovine G.I Lab 1. Perform a gastrointestinal specific physical exam on a bovine patient 2. Be able to accurately auscultate the bovine abdomen and make a disease diagnosis based upon abdominal contour and/or ping location 3. Be able to describe (or perform) orogastric intubation and rumen fluid collection in the bovine patient including risks of this procedure 4. Analyse and interpret results of rumen fluid analysis 5. Determine a bovine and equine patient age by examining dentition	**Bovine G.I Lab: SAKAI Uploaded Resources and Videos** 1. Be able to accurately describe the bovine abdomen 2. Be able to describe accurate protocols for orogastric intubation and rumen fluid collection in the bovine patient 3. Accurately describe a standard protocol to analyse and interpret results of rumen fluid analysis 4. Determine a bovine age with pictorial illustrations examining dentition	March 24th – April 3rd	Bovine G. I formative quiz (5 MCQ's and 1 short answer questions) . Please only complete after Reviewing Sakai Resources and Videos. You will have unlimited time and only one submission for this assessment Open March 24th 10:30am AST **Due April 3rd 10:00pm AST** (15 points)
Paper Case Simulations 1. Paper case introductory lecture 2. To allow development of skills related to teamwork and communication during case simulation projects 3. Display basic clinical reasoning with an unknown problem, signalment and chief complaint 4. Transform a client/owner's story (history) into a meaningful clinical problem – a problem representation 5. Interpreting and differentiating between normal and abnormal Physical exams findings 6. Prioritizing diagnostic testing for a stimulated clinical situation	**Paper Case Simulations: SAKAI Forums** 1. Paper case introductory lecture (SAKAI Panopto) 2. Display basic clinical reasoning with an unknown problem, signalment and chief complaint 3. Transform a client/owner's story (history) into a meaningful clinical problem – a problem representation 4. Interpreting and differentiating between normal and abnormal Physical exams findings 5. Prioritizing diagnostic testing for a stimulated clinical situation	Panopto Video March 25th Faculty post presenting complaint by March 27th Students post history questions by April 3rd Faculty replies to history questions by April 8th	1 Clinical Case (5 students per group) This will be fully discussed on the panopto lecture uploaded on **March 25th**. **Please watch the uploaded PANOPTO lecture to understand how this Paper case discussion will be fully conducted** As a group please communicate with each other as often as you can. The Clients (Faculty) will work closely

7. Practice formulating a differential diagnosis, assessment and prioritized plan for the simulated case. 8. Critically examine and reflect on your encounter to improve and utilize basic clinical reasoning skills to work through a case	6. Practice formulating a differential diagnosis, assessment and prioritized plan for the simulated case. 7. Critically examine and reflect on your encounter to improve and utilize basic clinical reasoning skills to work through a case	Student post problem list, differential list and diagnostic requests with justification by April 13th Faculty submit diagnostics by April 17th Students post case overview discussion by April 23rd Faculty offers feedback on case overview by April 29th Students submit final discharge by May 4th	with you to make this experience very productive. **Assessment** – Writing a complete clinic discharge with emphasis on the following: History (client's story) PE finding interpretation Diagnostic plans and justifications Differentials with justifications for rule out and/or in Treatment plans Management and biosecurity advices Accurate Referencing Forums open March 27th and your discharge as a group will be **DUE May 4th at 10:00pm AST** (20 points)
Equine GI Lab 1. Be able to perform and interpret a gastrointestinal focused physical exam in a horse 2. 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 3. Be able to recognize equipment utilized during "work up" of a colicky horse including equipment and drugs	**Equine GI Lab: SAKAI Uploaded Resources and Videos** 1. 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 2. Be able to recognize equipment utilized during "work up" of a colicky horse including equipment and drugs	April 28th – May 13th	Equine G. I formative quiz (5 MCQ's and 1 short answer questions) . Please only complete after Reviewing Sakai Resources and Videos. You will have unlimited time and only one submission for this assessment Open April 28th 10:30am AST **Due May 13th 10:00pm AST** (15 points)

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 100 Total points breakdown Medical Maths Quiz – 10 points Equine and Bovine PE – 10 points Bovine SIMLAB – 5 points Equine Musculoskeletal LARF Lab – 5 points Bovine G.I – 5 points Equine G.I – 5 points Paper Case Simulations – 20 points OSCE – 40 points	Total points = 100 Total points breakdown Medical Maths Quiz – 20 points Equine and Bovine PE Lab – 10 points Bovine SIMLAB Lab – 10 points Equine Musculoskeletal LARF Lab – 10 points Bovine G.I Lab – 15 points Equine G.I Lab – 15 points Paper Case Simulations – 20 points

Learning outcomes: please list any CLO, LLO's, or clinical skills which were omitted below:

*Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Demonstrating how to perform a gastrointestinal specific physical exam on a bovine patient and **performing** basic Bovine GI diagnostic skills

2. Demonstrate how to perform a gastrointestinal focused physical exam in a horse and **performing** basic Equine GI diagnostic skills

* May have contingency plan for future assessment or completion of these skills/LLO's listed above in the Fall 2020 term.

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

I. Course Directors

Momoh Zainab DVM, MVPH
Email: zmomoh@sgu.edu
Phone Ext: 3236

Kerri Nigito DVM
Email: nigker1@sgu.edu
Phone Ext: 3839

Office Location: LARF office block (behind Small Animal Clinic)
Office Hours: By appointment. Please email anytime with questions or concerns.

II. Course Locations:
LARF, SIM lab, lecture locations vary, see schedule for details.

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

IV. Required resources:
The required reading for each section will collectively come from articles, summaries and additional resources posted on Sakai.

V. Recommended resources:
Students are encouraged to perform additional reading in **Large Animal Internal Medicine**, Bradford P. Smith, 5th edition. Material covered in previous courses (ex. anatomy, physiology, LAMS 502) is considered appropriate material for the examination, quizzes and in lab assessments.

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
c. Please contact the course director PRIOR to coming to lab if you have a disability which may need accommodation for during the labs held at either the LARF or SIM lab.

VII. Other requirements - Dress Code

Appropriate dress for laboratory is required/mandatory. ***Failure to comply will result in dismissal from the lab and be considered an unexcused absence.***

Please leave your book bags/back-packs in lockers on campus or at home. Please leave your jewellery, valuable electronic accessories, and valuable sunglasses at home as we are not responsible for their loss or damage.

Hair needs to be tied back (no long ponytails), no dangling earrings, and nails must be cut short. We will be monitoring this, and it will be enforced before being allowed to participate in the labs.

The following is compulsory attire for the **SIM lab**:

- A pair of clean coveralls or a complete set of clean scrubs.
- Closed toed shoes
- Your name tag
- A functional watch (NO SMART watches)
- Each student must have their own stethoscope
- Remember that CELLPHONE use in the SIM lab is prohibited
- You can bring a notebook, pencils will be provided, no other writing utensils are allowed

The following is compulsory attire for the **LARF**:

- A pair of clean coveralls or a complete set of clean scrubs.
- Rubber boots OR rubber pullover boots may also be worn if they are covering a pair of closed-toe shoes. They must be cleaned/disinfected at the end of each laboratory session. The boots must be at least mid-length and made of impervious material. Cracks or tears or duct tape on boots will not be accepted, please check your boots for patency before arriving at LARF area
- Your name tag
- A functional watch (NO SMART watches)
- Each student must have their own stethoscope
- It is also strongly recommended to bring a writing utensil.

Please always be conscience of biosecurity: ***Do not wear farm boots from campus to the LARF(or from the LARF back to campus), this is a biosecurity hazard!*** Bring your boots with you and change at the LARF.

- Clinical Reasoning Lecture/Paper Cases: Normal professional attire is expected.

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 techniques including hands-on laboratories, simulation laboratories and case-based teaching.

IX. Course goals

1. To expand upon the large animal physical examination skills learned in the first-term veterinary clinical orientation course

2. To allow development of medical math skills
3. To introduce basic clinical competencies as well as musculoskeletal and gastrointestinal examination skills
4. To review common disease presentations of large animals
5. To introduce and practice clinical reasoning skills through didactic lectures, hands on laboratories and case simulation
6. To allow development of skills related to teamwork and communication during case simulation projects

X. Course Level Outcomes

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

1. Perform and interpret an advanced and complete physical exam on equine and bovine patients
2. Differentiate between normal and abnormal findings on PE especially related to gastrointestinal and musculoskeletal exams
3. Determine an animal's age by examining dentition
4. Safely handle large animals
5. Accurately perform medical math calculations
6. Utilize basic clinical reasoning skills to work through a case

XI. Alignment of Course Level Outcomes with Program Level Outcomes

	Course Level Outcome	**SVM Program Level Outcomes**
1.	Perform and interpret an advanced and complete physical exam on equine and bovine patients	**A. Core Medical Knowledge** 1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2.	Differentiate between normal and abnormal findings on Physical Examinations especially processes related to gastrointestinal and musculoskeletal exams	**A. Core Medical knowledge** 4. Explain the relationship between disease processes and clinical signs. 7. Evaluate and analyse normal versus abnormal animal behaviour.
3.	Determine an animals age by examining dentition	**A. Core Medical Knowledge** 1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
4.	Safely Handling Large Animals	**C. Core Clinical Competencies (Skills)** 7. Design and execute plans for health promotion, disease prevention, and food safety.
5.	Accurately perform medical math calculations	**C. Core Clinical Competencies (Skills)** 5. Analyse, design and execute appropriate plans for medical case management.
6.	Utilize basic clinical reasoning skills to work through a case	**B. Core Professional Attributes** 1. Demonstrate, evaluate, and model effective

		communication with clients, the general public, professional colleagues and responsible authorities. 3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team. **C. Core Clinical Competencies (Skills)** 1. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis 2. Create comprehensive treatment plans. 5. Analyse, design and execute appropriate plans for medical case management 7. Design and execute plans for health promotion, disease prevention, and food safety. 8. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.

Lesson and Laboratory level outcomes

At the conclusion of this course, you WILL be asked to be proficient in the following:

Physical Exam Lab

- Perform and interpret an advanced and complete physical exam on equine and bovine patients
- Determine an animal's age by examining dentition
- Be able to differentiate between normal and abnormal findings on PE
- Adhere to appropriate safety procedures while working around and handling large animals
- Be able to place a halter on a horse and cow

Bovine Simulation Lab

- Perform haltering and basic knot tying using the bovine sim model
- Describe/perform a California Mastitis Test
- Describe/perform venepuncture using the horse sim model
- Accurately create a therapeutic plan for a cow focusing on medical math calculations and drug withdrawal times

Equine Musculoskeletal Lab

- Perform and interpret a musculoskeletal exam of a horse
- Be able to safely pick up a front and hind foot and identify relevant hoof structures
- Understand the indications for and perform/interpret a hoof tester exam on a horse
- Understand the basics of lameness exam including grades and the procedures involved
- Appropriately apply a standard lower limb bandage on a horse

Bovine GI Lab

- Perform a gastrointestinal specific physical exam on a bovine patient
- Be able to accurately auscultate the bovine abdomen and make a disease diagnosis based upon abdominal contour and/or ping location
- Be able to describe (or perform) orogastric intubation and rumen fluid collection in the bovine patient including risks of this procedure
- Analyse and interpret results of rumen fluid analysis
- Determine an animal's age by examining dentition

Equine GI (Simulation) Lab

- Be able to perform and interpret a gastrointestinal focused physical exam in a horse
- 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
- Be able to recognize equipment utilized during "work up" of a colicky horse including equipment and drugs

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 below.

LAMS 501 Lecture / Laboratory Master Schedule – SPRING 2020

Date & Time	Lecture / Lab Group	Meeting Place	Topic	Faculty
January 23rd Thursday 4.30-5.20	ALL STUDENTS	VSL	**Course Introduction**	Dr Momoh and Nigito
January 24th Friday 4:30-5:20	ALL STUDENTS	VSL	**MEDICAL MATH**	Dr Karasek
January 28th Tuesday 10:30-12:20	Group 1	LARF	**Physical Exams**	LAMS Faculty
February 3rd Monday 10:30-12:20	Group 2	LARF	**Physical Exams**	LAMS Faculty
February 4th Tuesday 10:30-12:20	Group 3	LARF	**Physical Exams**	LAMS Faculty
February 10th Monday 10:30-11:20	Group 1a	SIMLAB	**Bovine SIM**	LAMS Faculty
Monday 11:30-12:20	Group 1b			
February 11th Tuesday 10:30-11:20	Group 2a	SIMLAB	**Bovine SIM**	LAMS Faculty
Tuesday 11:30-12:20	Group 2b			
February 18th Tuesday 10:30-11:20	Group 3a	SIMLAB	**Bovine SIM**	LAMS Faculty
Tuesday 11:30-12:20	Group 3b			
February 25th Tuesday 10:30-12:20	Group 1	LARF	**Equine Musculoskeletal**	LAMS Faculty
Tuesday 10:30-12:20	Group 2	Charter Hall Lab	**CLINICAL REASONING**	Dr Momoh

March 2nd Monday 10:30-12:20	Group 2	LARF	**Equine Musculoskeletal**	LAMS Faculty
Monday 10:30-12:20	Group 3	KB Taylor Hall Blue	**CLINICAL REASONING**	Dr Momoh
March 3rd Tuesday 10:30-11:20	Group 3	LARF	**Equine Musculoskeletal**	LAMS Faculty
Tuesday 10:30-12:20	Group 1	KB Taylor Hall Blue	**CLINICAL REASONING**	Dr Momoh
March 23rd Monday 10:30-12:20	Group 2	LARF	**Bovine GI**	LAMS Faculty
March 24th Tuesday 10:30-12:20	Group 1	LARF	**Bovine GI**	LAMS Faculty
March 25th Wednesday 9.30-10:20	ALL STUDENTS	KB Taylor Hall Blue	**Paper Case Introduction**	Dr Momoh and Nigito
March 26th Thursday 10:30-12:20	**PAPER CASE 1st MEETINGS (w/ faculty facilitator)**			
March 31st Tuesday 10:30-12:20	Group 3	LARF	**Bovine GI**	LAMS Faculty
April 7th Tuesday 10:30-11:20	Group 1a	SIMLAB	**Equine GI SIM**	LAMS Faculty
Tuesday 11:30-12:20	Group 1b			
April 16th Thursday 10:30-12:20	**PAPER CASE 2nd MEETINGS (w/ faculty facilitator)**			
April 20th Monday 10:30-11:20	Group 2a	SIMLAB	**Equine GI SIM**	LAMS Faculty
Monday 11:30-12:20	Group 2b			
April 21st Tuesday 10:30-11:20	Group 3a	SIMLAB	**Equine GI SIM**	LAMS Faculty
Tuesday 11:30-12:20	Group 3b			
Monday April 27th 10pm	**PAPER CASE DUE**			
May 5th Tuesday 8:30am -12:20pm	**OSCE PRACTICE SESSIONS**			
May 6th Wednesday 8:30am -12:20pm	**OSCE PRACTICE SESSIONS**			
May 8th Friday 8:30am-5:30pm	**ALL STUDENTS**	**FINAL EXAM OSCE (LARF)**		
May 12th Tuesday 9:00-11:00am	**Students with unsatisfactory OSCE Grades**	**OSCE REMEDIATION**		

XIII. Grading and assessment policy, and grading rubrics

The grade for this course will be based on the submission of homework, in-lab assessments, a case-based group assignment and a final exam (OSCE format).

- Homework & In lab assessments: 40%
  - Medical Math – 10%
  - Lab Assessment – 5% each (Total of 30%)
- "Paper case" group assignment: 20%
- Final exam in OSCE format: 40%

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

Medical Math Homework: From the information presented during the medical math lecture, you will be given several homework assignment on Sakai. You get 50 questions to work on and submit (Which will be split in 2 sections (25 questions) in the course of the term). Make sure to submit them (the 2 sections) on or before their due dates as stated on SAKAI or else you get a "0" on the ones you didn't submit.

In Lab Assessments: For each lab, students will rotate through different stations or be assigned to a specific professor. At **EITHER** the START or the END of each lab, each student is expected to answer a question that the professor poses. This question will be a direct reflection of the information/skills discussed during lab or provided on Sakai and will allow the professors to gauge the student's engagement and preparedness during that lab session. The student will also be assessed on professional behaviour. The student will be given immediate feedback from the faculty member that asks the question.

Preparatory materials for each lab are posted on Sakai. It is **HIGHLY recommended** that you read the relevant materials before each lab in order to perform well on the assessment questions.

IF YOU ARE ABSENT FROM LAB, you will receive a 0 (zero) for that day.

The student is responsible for using lab time to complete the required objectives. The student will be asked to demonstrate knowledge and proficiency from each lab during the final exam OSCE

Students will be scored on a scale of 0-10 during each lab using the following rubric:
Score 0 – 10 points per Lab Session

Assessment Question Knowledge (0-5)	Professional Behaviour (0-5)	Points
Student did not answer an assessment question	Student did not attend lab and no prior notification to the instructor	Incomplete 0 point
Student was not prepared and demonstrated no knowledge regarding the assessment question	Student did not behave in a professional manner during the lab	Insufficient 1 point

Student was ill prepared and demonstrated an inadequate level of knowledge	Student's professional behaviour was lacking and would require major changes to be adequate	Developing 2 points
Student was moderately prepared and demonstrated an average level of knowledge	Student's professional behaviour was adequate, but areas of improvement are noted	Adequate 3 points
Student was well prepared and demonstrated an above average level of knowledge with only minor areas of potential improvement.	Student's professional behaviour was adequate with very minor areas of improvement noted	Competent 4 points
Student was very well prepared and demonstrated an excellent level of knowledge with no improvement needed.	Student behaved professionally during the lab with no improvement necessary	Exemplary 5 points

*Professional behaviour is defined as, but not limited to punctuality, appropriate dress, adhering to appropriate safety standards around large animals, respectful attitude and approach when interacting with professors/staff/fellow students and being engaged during laboratory sessions.

"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 receive an email from your owner/facilitator with a time to meet (during scheduled lab time). Each group is expected to come up with a clinic name (e.g. True-Blue Vet Clinic) and to dress appropriately as veterinarians (e.g. White coat, name badge) for all meetings with their client/facilitator.

The clinic will have to gather a history from the "owner" during the first meeting and then after receiving physical examination findings, interpret these findings and develop an initial problem list and a prioritized list of differential diagnoses. The group will then request 3 diagnostic tests from their facilitator in order to rule in/out their DD's. 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 time. During this second meeting, the group will discuss their problem list, DD's and how their test results helped them to their final diagnosis for the patient. 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 on **March 25th**. All these sessions **REQUIRE** attendance.

Final Exam: There will be 1 comprehensive OSCE format final exam, worth 40% of the final grade, to be held **on May 8th, 2020** starting at 8:30am at the LARF. Exam questions will

require the student to demonstrate knowledge and skills related to the labs and clinical reasoning/medical math sessions.
Details regarding the format will be announced later in the term. Dates for practice sessions on the LARF will also be scheduled.

Excuses from the examination 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 Exam Soft.

Remediation – students who receive a grade of **80% or less** on their OSCE final exam will be required to remediate the exam on **May 12th.** The remediation will not change the student's exam grade, however, will be required to demonstrate proficiency in the skills asked on the exam prior to moving on from this course.

All students are expected to strictly adhere to the University's Student Code of Conduct and to have reviewed the Honour Code Statement All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended Study Strategies

a. Prepare for each lab by reviewing the resources posted on SAKAI under each lab's folders, as well as the practical skills videos posted on SAKAI.
b. Use the skills list, which will be posted, for review and practice of the skills learned throughout the course prior to the final OSCE.
c. Attend an OSCE practice session, we have seen direct positive correlations with attendance and success on the final exam.

XV. Instructor's expectations of the student

The student is expected to adhere to the guidelines provided throughout this syllabus including attendance, dress code, lab preparation and assignment submission

XVI. Professionalism statement:

Please always exhibit professional behaviour. Turn cell phones off or silence them during lectures and labs. See "In Lab Assessment" section for specifics on professional behaviour in laboratory sessions.

XVII. Attendance policy

Attendance is mandatory for ALL activities. Students are allowed one unexcused absence. Two or more unexcused absences **will** result in course failure. Students are also expected to be on time! Arriving after attendance has been taken or leaving

before the end of the lab 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.

Each student will be assigned to a group and must report to the LARF or the classroom on the day and time specified on the schedule. A student **CANNOT** change lab times without Dr Momoh's and Dr Chetty's consent, which MUST be obtained PRIOR to the lab time. If the student shows up to a different lab session, you will not be granted admission, thus earning a zero for that day on your in-lab assessment grade.

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

Any quizzes or assignments not submitted will receive a grade of "0". Missed Labs without prior excuse will receive a grade of "0". Students who fail to appear for an examination (Final OSCE) 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. Please consult your student manual for additional information regarding acceptable excuses for missed examinations.

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

XIX. Exam soft Policy

Exam soft will only be used for Peer/Self Evaluations for the Paper Case Project.

XX. Copyright policy

SVM Course Code: _LAMS 502_____
Course Director: _Dr. Kerri Nigito and Dr. Keith Kalasi_____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**
Assessments will be available by 8:00am AST Monday of each week, if not sooner

Previous Clinical Skills Covered:	*Revised Clinical Skills:	Weekly/rotation schedule:	Assessment Schedule:
Equine Physical Exam and Handling Lab Skills: 1. Demonstrate safe and proper handling and restraint techniques and practice a safe and thorough routine clinical exam __	Equine Physical Exam and handling Lab Skills: 1. Review videos of physical exam and haltering skills__	March 30-April 12	Equine formative lab quiz on Sakai- Review the videos and resources on Sakai and then take the quiz on Sakai, you will have unlimited time and unlimited submissions for this assessment Open: March 30th 8:00am AST **Due: April 12 11:00pm AST** [20 points]
Bovine Physical Exam and Handling Lab Skills: 1. Demonstrate safe and proper handling and restraint techniques and practice a safe and thorough routine clinical exam __	Bovine Physical Exam and Handling Lab Skills: 2. Review videos of physical exam, haltering, and handling skills__	April 20- May 3rd	Bovine formative lab quiz on Sakai- Review the videos and resources on Sakai and take the quiz on Sakai, you will have unlimited time and unlimited submissions for this assessment Open April 20th, 8:00am AST **Due: May 3rd 11:00pm AST** [20 points]
Total lab hours: 4	Total hours: 4		Total hours of student commitment: 4

Assessment Summary:

Original Percentage Allocation:	Revised Percentage Allocation
Original percentage breakdown: 15% Small Animal PE and pre-lab quiz 15% Equine PE and Pre-lab sakai quiz 15% Bovine PE and Pre-lab sakai quiz 50% OSCE examination 5% Biosecurity and Medical Records sakai quiz	*Revised percentage breakdown:* 30% Small Animal Physical Exam 30% Equine Physical Exam Review quiz 30% Bovine Physical Exam Review quiz 10% Biosecurity and Medical Records Sakai quiz

Learning outcomes: please list any CLO, LLO's, or clinical skills which were omitted below:

**Due to condensed course content, it is expected that LO's will be prioritized as necessary.*

1. Demonstrate safe and proper handling and restraint techniques and practice a safe and thorough routine clinical exam __
2. Demonstrate safe restraint of a cow and practice a thorough and structured clinical exam _____

*May have contingency plan for future assessment or completion of these skills/LLO's listed above in the Fall 2020 term.

SVM Course Code: LAMS 503
Course Director: Karasek
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
[Week 9] Lectures: 1. Beef Production-Cooksey 2. Small Ruminant Production-Cooksey 3. Renal Physiology Review comparative SA vs. LA-Guttin 4. Azotemia & Urolithiasis-Guttin 5. PU/PD-Guttin .	[Week 10] Lectures via Panopto: 1. Beef Production-Cooksey 2. Small Ruminant Production-Cooksey 3. Dairy Production-Nigito 4. Poultry & Pork Production-Byers 5. Large Animal Emergency-situational/environmental concerns-Karasek	March 23-29	Large Animal Emergency Assignment. Sakai Tests and Quizzes. (Due March 30, 5 pts)
[Week 10] Lectures: 1. Intro to Respiratory – PE, physiology comparative-Corrigan 2. SA Respiratory Cases-Corrigan 3. EQ Respiratory Cases-Wise 4. LA Respiratory Cases-Nigito	[Week 11] Lectures via Panopto: 1. Renal Physiology Review comparative SA vs. LA-Guttin 2. Azotemia & Urolithiasis-Guttin 3. PU/PD-Guttin 4. ECCM: Patient Assessment and Triage and Shock-Guttin	March 30-April 5	ECCM Assignment. Sakai Tests and Quizzes. (Due April 6, 5 pts)
[Week 11] Lectures: 1. Intro to Oncology-Johnson 2. Intro to cardiology-history, clinical signs, PE across species-Corrigan 3. Diagnostics for cardio- ECG, radiology, echo-Corrigan	[Week 12] Lectures via Panopto: 1. Intro to Respiratory – PE, physiology comparative-Corrigan 2. SA Respiratory Cases-Corrigan 3. EQ Respiratory Cases-Wise 4. LA Respiratory Cases-Nigito 5. Intro to Oncology-Johnson	April 6-12	Oncology case. Sakai Assignments (Due April 13, 5pts)

4. SA Cardio cases-Corrigan 5. EQ Cardio cases-Werners-Butler			
[Week 12] Lectures: 1. EQ/LA sick animal nutrition-Werners-Butler 2. SA nutrition for sick animals-Guttin 3. LA theriogenology intro-Khan 4. EQ theriogenology intro-Khan 5. SA theriogenology intro-Khan	[Week 13] Lectures via Panopto: 1. Intro to cardiology-history, clinical signs, PE across species-Corrigan 2. Diagnostics for cardio-ECG, radiology, echo-Corrigan 3. SA Cardio cases-Corrigan 4. EQ Cardio cases-Werners-Butler	April 13-19	Endocrine Assignment - based on reading resources in Endocrine folder. Sakai Tests and Quizzes. (Due April 20, 10 pts)
[Week 13] Lectures: 1. Introduction to Endocrine-Corrigan 2. Common Endocrine Diseases-Corrigan 3. Common Endocrine/Equine endocrine-Corrigan 4. ECCM: Patient Assessment and Triage and Shock-Guttin 5. Dairy Production-Nigito	[Week 14] Lectures via Panopto: 1. LA theriogenology intro-Khan 2. EQ theriogenology intro-Khan 3. SA theriogenology intro-Khan 4. Equine Neuro-Karasek 5. Equine GI Intro-Karasek	April 20-26	Equine Neuro Assignment. Sakai Tests and Quizzes. (Due April 27, 5 pts) Equine GI Assignment Sakai Tests and Quizzes. (Due April 27, 5 pts)

[Week 14] Lectures: 1. Liver Physiology Review-Guttin 2. SA Liver Diagnostics/Cases-Guttin 3. FA Liver-Cases-Byers 4. EQ Liver-Cases-Wise 5. Biosafety and Biosecurity-Karasek 6. Equine Neuro-Karasek	[Week 15] Lectures via Panopto: 1. Liver Physiology Review-Guttin 2. FA Liver-Cases-Byers 3. EQ Liver-Cases-Wise 4. Introduction to lameness SA & EQ-Janicke 5. Biosafety and Biosecurity-Karasek	April 27-May 3	Biosafety and Biosecurity assignment Sakai Tests and Quizzes. (Due May 4, 5 pts)
[Week 15] Lectures: 1. Equine GI Intro-Karasek 2. Equine GI cases-Karasek 3. Poultry & Pork Production-Byers 4. Introduction to lameness SA & EQ-Janicke 5. Large Animal Emergency-situational/environmental concerns-Karasek	[Week 16] *Optional:* 1. Feeding the ill or injured large animal-Werners-Butler		*Optional:* LA/EQ Nutrition Assignment Sakai Tests and Quizzes. (Due May 22*, BONUS 2 pts)* Final exam due May 22 (25 pts)
Total lectures: 35	Total lectures (Panopto): 28 Total optional zoom sessions (office hours): 6		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 100 *Total points breakdown:* Midterm exam 40 pts Final exam 50 pts Homework Assignments 10 pts (Bloodwork, Fluid Therapy, Neurology)	Total points = 100 *Total points breakdown:* Midterm exam 25 pts Final exam 25 points Homework Assignments 10 pts (Bloodwork, Fluid Therapy, Neurology) Assignments 40 pts

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Discuss the importance of in-hospital nutrition and its indications
2. Compare and contrast nutritional needs in healthy patients to that of an ill, hospitalized patient
3. Describe the different routes to feed a hospitalized patient
4. Calculate RER and select a feeding route for patients
5. Review the basics of large animal nutrition with focus on the basics for equine nutrition
6. Know when nutritional support is indicated
7. Know the different options available for nutritional support
8. Describe the potential advantages and disadvantages of the different ways of providing nutritional support

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

LAMS DEPARTMENT

***INTRODUCTION TO CLINICAL MEDICINE* (4 credits)**

LAMS 503 TERM 4

Spring 2020

I. Course Faculty and Staff Information

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

Office Hours: To be planned with class representative

Dr. Anne Corrigan MS DVM MS DACVIM (SAIM), Professor, acorrigan@sgu.edu
Dr. Talia Guttin DVM DACVIM, Assistant Professor, tguttin@sgu.edu
Dr. Stacey Byers DVM, MS, DACVIM(LA), Associate Professor sbyers1@sgu.edu
Dr. Tara Paterson, DVM MS, Associate Professor, tpaterson@sgu.edu
Dr. Firdous A. Khan, BVSc, MVSc, DVSc, Diplomate ACT, Associate Professor fkhan8@sgu.edu
Dr. Catherine Werners-Butler DVM, PhD, MRCVS, Dipl. ECEIM, Dipl. RNVA, Professor cwerners@sgu.edu
Dr. Lauren Wise DVM, PhD, DACVIM, Associate Professor lwise1@sgu.edu
Dr. Heidi Janicke VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA, Associate Professor hjanicke@sgu.edu
Dr. Elizabeth Cooksey BSc, DVM, Clinical Instructor ecookse1@sgu.edu
Dr. Kerri Nigito, DVM, Clinical Instructor Nigker1@sgu.edu
Dr. Jill Narak DVM MS DACVIM (Neurology), Private Practitioner, Veterinary Referral Surgical Practice Atlanta, jillnarakdvm@vrspatl.com
Dr. Kimberly Johnson DVM DACVIM (Oncology), Private Practitioner, petcancerconsulting@gmail.com
Mrs. Frances Emmanuel, Executive Secretary, SAMS Dept, femmanuel@sgu.edu

II. Course location

Ray and Jan Sis Hall 2

III. Prerequisite and/or co-requisite courses

current 4th term SVM Student

IV. Required resources

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

V.

VI. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

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

VII. Special accommodation

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

VIII. Other requirements

Articles may be assigned during the term

IX. Course rationale (catalogue course description)

This course is a keystone course in the veterinary curriculum. It was designed to use a team-teaching approach to tie together the basic science courses in the first 1 1/2 years and prepare the students for the third year small and large animal 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.

X. Course goals (Instructor's point of view)

- To prepare the students for the third-year veterinary curriculum
- To help the students develop clinical problem-solving skills, medical record skills, professional development and experience with case work up,
- To learn how to select appropriate diagnostic tests
- To reinforce continuing education and research appreciation
- To introduce medical and surgical disease presentation in Small Animal, Equine, and Large Animal species in the following systems: Cardiology, Liver, Renal, GI, Endocrine, Ophthalmology, Dermatology, Theriogenology, Emergency and Critical Care, Respiratory and Oncology.
- To introduce the specialty of Neurology and act as the first part in the teaching of Clinical Neurology
- To learn indications for and practice fluid therapy in SA, EQ, and LA species.
- To introduce biosecurity and biosafety in SA and LA systems.

XI. Course-level objectives/Learning Outcomes

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

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

6. Analyze clinical data to accurately localize and diagnose neurologic abnormalities
7. Select a research topic to model lifelong learning and practice self-reflection

XII. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXIV after the Course Schedule.

XIII. Lesson and Laboratory Level Outcomes.

See Appendix XXIV after the Course Schedule.

XIV. Course Schedule

Attached at the end of this document

XV. Grading and assessment policy, and grading rubrics

- There will be 2 examinations worth a **total of 90% of the class grade**. The exam material will come from lectures and in class discussions. There will be **approximately** 3 questions/lecture of new material for both the midterm exam and the final exam, there will be an additional 1 question/lecture of review material on the final. These examinations take place on ExamSoft and comprise of Multiple-Choice Questions (MCQ's).
- There will be several 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 10% of your final grade.**
- 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

XVI. E-value use for outcomes assessment evaluation

None currently

XVII. Recommended study strategies

Office hours will be arranged to fit the class schedule, these are group office hours where the examination material is discussed and practiced. The BEST recommendation is to attend these hours; it is a review of the material with clinical examples and practice on examination type questions. These have been exceedingly helpful to the students who have attended in the past. Additional office hours can be made by appointment. Additional recommendations:

- Prior to class, reading the complementary chapters in the recommended textbooks (namely Ettinger's Textbook of Small Animal Internal Medicine)
- Class attendance and active participation
- Office hours attendance and active participation
- 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

XVIII. Instructor's expectations of the student

To attend class and office hours, pre-reading the lecture outline, Ettinger or Nelson and Couto or Smith sections in the text will be exceedingly helpful to your success.

XIX. 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 in class and turn cell phones off or silent them during lectures.

XX. Attendance policy

Attendance to lectures is expected; the course notes will be posted on Sakai, and available on Sonic Foundry the exam material will come from lectures and in class discussions. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. Greater than 2 unexcused absences may result in a 0.5 decrease in your overall grade point for the course. 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/year ONLY, and then you need a medical leave of absence. 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.

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

Missed examinations: A make-up exam will be given ONLY when an excuse from the student clinic is presented. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic PRIOR to the time of the test. Excuses that are issued after the examination 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. SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desktop. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an ESSAY or Short-Answer Format and will take place using Exam Soft.

XXII. ExamSoft policy

You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. ExamSoft can track testing behaviors, i.e. testing time, testing location, and any deviations from the honor code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honor Code in the student handbook. If you have a computer problem, go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam. You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in Exam Soft so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email after to ensure that your answer file has been uploaded. SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desktop. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam.

Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.

Any make-up exams may be given in an ESSAY or Short-Answer Format and will take place using Exam Soft

XXIII. 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.

XXIV. Appendices: Schedule

Lecture Time	Day/Dates	LECTURE TOPIC	Instructor
Week 1			
11:30	**Tues. 1/21**	Course Orientation: Clinical reasoning	Karasek
11:30	**Wed. 1/22**	Small animal cases- CBC/Chem/UA	Corrigan
11:30	**Thurs. 1/23**	Introduction to fluid therapy- equations/considerations, acid/base, electrolytes	Corrigan
11:30	**Fri. 1/24**	Large animal cases-CBC/Chem/UA	Byers
Week 2			
11:30	**Mon. 1/27**	Introduction to fluid therapy- equations/considerations, acid/base, electrolytes	Corrigan
11:30	**Tues. 1/28**	Fluid therapy LA cases	Byers
11:30	**Wed. 1/29**	Fluid therapy EQ cases	Werners-Butler
11:30	**Fri. 1/31**	Fluid Types	Guttin
Week 3			
11:30	**Mon. 2/3**	Fluid therapy SA cases 1	Guttin
10:30	**Tues. 2/4**	Fluid therapy SA cases 2	Guttin
11:30	**Tues. 2/4**	Complex fluid therapy	Guttin
11:30	**Wed. 2/5**	Dermatology Introduction	Paterson
11:30	**Thurs. 2/6**	Derm Diagnostics/SA cases	Paterson
Week 4			
11:30	**Mon. 2/10**	SA Behavior	Bain
11:30	**Tues. 2/11**	LA Behavior	Bain
11:30	**Fri. 2/14**	EQ Dermatology introduction	Werners-Butler
Week 5			
11:30	**Tues. 2/18**	Intro to Neurology-comparative	Narak
11:30	**Wed 2/19**	Localizing/Neuroimaging intra-species	Narak
10:30	**Thurs. 2/20**	SA Neuro cases	Narak

Week 6			
11:30	**Mon. 2/24**	FA Dermatology introduction	Nigito
11:30	**Tues. 2/25**	GI Physiology Review LA	Byers
10:30	**Thurs. 2/27**	GI Physiology Review SA	Guttin
11:30	**Fri. 2/28**	GI SA cases	Guttin
Week 7			
10:30	**Thurs 3/5**	GI FA cases	Byers
8:30	**Fri 3/6**	Introduction to Production Animal Medicine	Byers
Week 8 8:30	**Midterm EXAM Friday 3/13**		25
Week 9			
11:30	**Mon 3/16**	Beef Production	Cooksey
11:30	**Tues 3/17**	Small Ruminant Production	Cooksey
11:30	**Wed 3/18**	Renal Physiology Review comparative SA vs. LA	Guttin
10:30	**Thurs 3/19**	Azotemia & Urolithiasis	Guttin
11:30	**Fri 3/20**	PU/PD	Guttin
Week 10			
11:30	**Mon 3/23**	Intro to Respiratory – PE, physiology comparative	Corrigan
11:30	**Tues 3/24**	SA Respiratory Cases	Corrigan
11:30	**Wed 3/25**	EQ Respiratory Cases	Wise
11:30	**Thurs 3/26**	LA Respiratory Cases	Nigito
Week 11			
11:30	**Mon 3/30**	Intro to Oncology	KJ
11:30	**Tues. 3/31**	Intro to cardiology- history, clinical signs, PE across species	Corrigan
11:30	**Wed. 4/1**	Diagnostics for cardio- ECG, radiology, echo	Corrigan
10:30	**Thurs. 4/2**	SA Cardio cases	Corrigan

11:30	**Fri. 4/3**	EQ Cardio cases	Werners-Butler
Week 12			
11:30	**Mon. 4/6**	EQ/LA sick animal nutrition	Werners-Butler
10:30	**Tues. 4/7**	SA nutrition for sick animals	Guttin
11:30	**Tues. 4/7**	LA theriogenology intro	Khan
11:30	**Wed. 4/8**	EQ theriogenology intro	Khan
10:30	**Thurs. 4/9**	SA theriogenology intro	Khan
Week 13			
11:30	**Tues. 4/14**	**Introduction to Endocrine**	Corrigan
11:30	**Wed. 4/15**	Common Endocrine Diseases	Corrigan
10:30	**Thurs. 4/16**	Common Endocrine/Equine endocrine	Corrigan
10:30	**Fri. 4/17**	ECCM: Patient Assessment and Triage and Shock	Guttin
11:30	**Fri. 4/17**	Dairy Production	Nigito
Week 14			
11:30	**Mon. 4/20**	Liver Physiology Review	Guttin
11:30	**Tues. 4/21**	SA Liver Diagnostics/Cases	Guttin
11:30	**Wed. 4/22**	FA Liver-Cases	Byers
9:30	**Thurs. 4/23**	EQ Liver-Cases	Wise
10:30	**Thurs. 4/23**	Biosafety and Biosecurity	Karasek
11:30	**Fri. 4/24**	Equine Neuro	Karasek
Week 15			
11:30	**Mon 4/27**	Equine GI Intro	Karasek
11:30	**Tues. 4/28**	Equine GI cases	Karasek
11:30	**Wed 4/29**	Poultry & Pork Production	Byers
10:30	**Thurs 4/30**	Introduction to lameness SA & EQ	Janicke

11:30	**Thurs 4/30**	Large Animal Emergency- situational/environmental concerns	Karasek
Week 17 8:30	**Final EXAM Wed 5/13**		

Appendices, Mapping Outcomes:

Course Level Outcomes:

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

Mapping to Program Level Outcomes and AVMA Competencies:

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
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
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
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
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

Analyze clinical data to accurately localize and diagnose neurologic abnormalities	A1, A2, A3, A4, A5, A6, A7, C1, C5, C6,	Abdch
Select a research topic to model lifelong learning and practice self-reflection	A6, A11 B1, B4, B6, C8, C9	Cd efg

Lecture Learning Outcomes:

	Lecture/lab Learning Outcome	Course learning outcome Number/s
Introduction Critical Thinking and Bloodwork Section	1. Recognize and utilize appropriate terminology	1 2 3 4 5 6
	2. Understand and utilize the SOAP medical records format and the problem-oriented approach to medicine	1 2 3
	3. Compare and contrast disease vs. failure	1 2 3 4
	4. Describe the etiology for clinical signs of disease	1 4 6
	5. Utilize/use the DAMNIT scheme for differential diagnosis development	1 2 3 6
	6. Utilize/use signalment, clinical signs, relevant history, physical examination findings to create a differential diagnosis/rule out list and select appropriate diagnostic testing for all systems and both large and small animal species	1 2 3 4 6
	7. Compare and contrast PU/PD and pollakiuria	1
	8. Review and analyze CBC, Serum Chemistry and Urinalysis results and use them to create differential diagnoses/rule outs	2 3
	9. Recognize and understand the implications of different leukogram patterns	2
	10. Compare and contrast ALT, AST and ALP	2 3
	11. Assess liver function with a serum chemistry and select additional diagnostics	3

	12. Understand electrolyte balance and control mechanisms	2 3 5
	13. Explain rule outs for hyper and hypocalcemia, and interpret bloodwork and select additional diagnostic testing	2 3 4
	14. Understand and interpret Anion Gap	2 3 5
	15. Utilize the USG to interpret renal function	2 3 4
	16. Describe the benefits to evaluating a blood smear	2 4
	17. Compare and contrast regenerative and non-regenerative anemias	1 2 3
	18. Calculate a corrected reticulocyte percent	2
	19. Describe CBC findings to help you interpret erythrocyte regeneration	2
	20. Compare and contrast Rouleau and agglutination and select appropriate additional diagnostics	2 3
	21. Compare and contrast primary and secondary hemostasis	1 2 3
	22. Recognize the importance of platelets and select appropriate diagnostic testing	2 3
	23. Describe coagulation tests and appropriately select tests based on clinical signs, presenting complaints, and PE findings	1 2 3 4
	24. Describe coagulation factors, how to test for them, and develop differential diagnoses/rule outs for given clinical examples	1 2 3 4
Diagnostic testing	25. Differentiate between sensitivity and specificity of diagnostic tests	3
	26. Describe the basic principles of immunodiagnostic and pathogen testing including selecting the appropriate test and knowing its limitations	3
	27. Interpret basic immunodiagnostic and pathogen specific test results	3

Oncology Introduction	28. Describe how to diagnose cancer, the limitations of each procedure, and which procedure is appropriate for diagnosis	1 2 3
	29. Describe how to diagnose lymphoma compared to other differential diagnoses for enlarged lymph nodes	1 2 3
	30. Interpret lab work associated with a cancer patient	2 3
	31. Formulate a problem list and a list of differential diagnoses for a cancer patient	2 3
	32. Recommend diagnostic procedures appropriate for a cancer patient based on presentation	1 2 3 4
SA Dermatology Introduction	33. List the basic structures of the skin & cite the functions of the skin	1
	34. Explain the difference between primary & secondary derm lesions; give examples of each	1 2
	35. Describe the following dermatologic lesions and cite one dermatological disease in which that lesion is manifested: macule, patch, hyperpigmentation, hypopigmentation, papule, pustule, nodule, wheal, abscess, vesicle, bulla, erosion, ulcer, excoriation, lichenification, epidermal collarette, comedo, alopecia, crust, scale	1 2
	36. List the diagnostic tools appropriate for working up a suspected case of parasitic dermatitis. Explain the specific indication(s) for each diagnostic test.	3
	37. Identify common parasitic species causing disease in dogs and cats.	2
	38. Describe the various techniques for obtaining samples for cytology when concerned about bacterial or yeast infection. List other indications for performing cytology.	3
	39. Identify the following microbes: cocci bacteria, rod-shaped bacteria, yeast	3
	40. List the diagnostic tools appropriate for working up a suspected case of dermatophytosis. Discuss the	3

	diagnostic limitations associated with Wood's lamp.	
	41. Cite the indications for trichography	3
	42. List the diagnostic tools appropriate for working up a nodular lesion	3
	43. List the diagnostic tools that would be helpful in working up a case of suspected allergy.	3
	44. State the diagnostic tests which comprise the dermatology minimum database.	3
	45. Explain the steps taken to thoroughly work up a dermatologic case. Be sure to include distant examination, physical examination, dermatologic examination, diagnostics, differential diagnoses and plan.	1 2 3
	46. Discuss the importance of obtaining a thorough history and explain SHED-C	1 2
	47. Know the correct spelling of pruritus and explain the benefits of obtaining an itch score when working up a pruritic patient.	1
Equine Dermatology	48. Recognize pathological conditions of the equine skin and determine whether they are medical or surgical	1 2
	49. Choose appropriate additional diagnostic tests in order to get a final diagnosis in a horse with a skin condition	3
	50. Develop a treatment and management plan for the different equine skin conditions	1 2 3
Neurology Introduction Section	51. Utilize and recognize appropriate terminology	1 2 3 4 5 6
	52. Identify a patient's problem based on one word or phrase	1 4 6
	53. Describe the functions and locations of upper and lower motor neurons	1 2 6

	54. Compare and contrast motor function, postural reactions, muscle tone and reflexes and be able to localize a lesion	1 2 3 6
	55. Compare UMN vs. LMN bladder	1 2 3 4 6
	56. Describe the basic mechanisms of action of uropharmacologics used for UMN bladder	1 6
	57. List the functions of the brainstem.	1 2 6
	58. List the clinical signs of brainstem dysfunction.	1 6
	59. List the cranial nerves, including origin and function(s).	1 2 3 6
	60. List the ways vision is assessed on a neurologic examination.	1 2 6
	61. Using PLRs as a guide, neurolocalize blindness	1 2 6
	62. List the four cardinal signs of Horner's syndrome in small animals	1 6
	63. Describe the functions of the cerebellum.	1 6
	64. List the clinical signs of cerebellar syndrome.	1 6
	65. Describe the functions of the vestibular system	1 6
	66. Compare and contrast head tilt, falling, nystagmus, and postural reactions to localize vestibular disease	1 2 3 6
	67. List the components (and corresponding functions) of the forebrain.	1 2 6
	68. List the constellation of clinical signs for forebrain disease.	1 6
	69. List the clinical signs associated with myopathic syndrome.	1 6
	70. List the clinical signs associated with junctionopathies/diffuse lower motor neuron disease.	1 6
	71. List the clinical signs associated with motor neuropathy vs. sensory neuropathy	1 6

Equine Neurology	72. Be able to perform a thorough neurological exam in the horse including cranial nerve examination, assessment of autonomic function, and a dynamic neurologic exam (gait analysis + assessment of proprioceptive deficits)	1 2 3 6
	73. Choose appropriate diagnostic tests in order to obtain a final diagnosis in a horse with a neurologic condition	1 2 3 6
Fluid Therapy Section SA, EQ, and FA	74. Review physiology basics of fluid compartments, Starlings' forces, and homeostatic mechanisms to be able to determine fluid therapy needs of a given patient in a variety of species	1 2 3 4 5 6
	75. Determine if your patient needs shock vs. dehydration fluid therapy in a variety of species	1 4 5
	76. Calculate shock doses in a variety of species	4 5
	77. Calculate dehydration fluids via the MDO method in a variety of species	1 2 4 5
	78. Formulate a fluid therapy plan for patients, including route of fluid delivery, type of fluids, rate of fluid delivery, and over what time period in a variety of species	1 2 4 5
	79. Compare and contrast crystalloids vs. colloids and the indications for use in a variety of species	4 5
	80. Compare and contrast a variety of crystalloid fluid types and the indications for use in a variety of species	4 5 6
	81. Compare and contrast the different routes of fluid therapy and the indications for use in a variety of species	4 5
	82. Describe appropriate catheter selection and placement in a variety of species	4 5
	83. Describe how to monitor a patient receiving fluid therapy in a variety of species	4 5 6
	84. Describe common electrolyte abnormalities including diagnosis and treatment plans in a variety of species	4 5 6

	85. Review acid/base balance and interpret a variety of venous and arterial blood gas case examples	4 5
	86. Calculate and interpret anion gap	4 5
Gastrointestinal Section SA, FA and Equine	87. Review gastrointestinal anatomy and physiology as it relates to clinical signs in a variety of species	1 2
	88. Interrogate owners about specific GI clinical signs, including differentiating vomiting from regurgitation, and differentiating small intestinal vs. large intestinal diarrhea, and use these clinical signs to identify the anatomic region of focus in a variety of species	1 2
	89. Based on clinical signs (dysphagia, regurgitation, vomiting, diarrhea), and anatomic localization of the signs, be able to formulate a problem list, differential diagnoses, and diagnostic plan in a variety of species	1 2 3
	90. Place diagnostics in priority order based on how common or rare the differential diagnoses are in a variety of species	2 3 4
	91. Explain the etiology and pathophysiology for common causes of colic in the horse	1 2 4
	92. Describe history and risk factors commonly associated with colic in the horse	1
Equine Liver Section	93. Explain the etiology and pathophysiology of common equine liver diseases	1 2 3
	94. Formulate an appropriate diagnostic testing plan and differential list for a horse presenting for suspect liver dysfunction	2 3 4
	95. Interpret liver specific diagnostic test results	3
	96. Diagnose cases of Theiler's disease (serum sickness), Tyzzer's disease, aflatoxicosis, bacterial cholangiohepatitis, cholelithiasis, chronic active hepatitis, hyperlipemia/hepatic lipidosis and pyrrolizidine alkaloid/clover toxicity based on the presenting complaints, relevant historical information, physical exam findings and diagnostic test results	1 2 3 4 6

	97. Construct a therapeutic and management plan for horses with aforementioned diseases	1 2 3 4 5 6
	98. Discuss the prognosis of horses suffering from liver disease	1 2 3
SA Liver Section	99. Utilize history, clinical signs, physical exam findings, and blood work to categorize liver patients: acute vs. chronic, hepatocellular vs. cholestatic, subclinical vs. clinical	1 2 3 4 5 6
	100. Construct a VITAMIN-D differential list based on liver disease categorization, and make a diagnostic plan for that patient	1 2 3 4 6
	101. Categorize icteric patients into pre-hepatic, hepatic, and post-hepatic, and make a diagnostic plan to differentiate these causes	1 2 3 4 6
	102. Identify the limitations of the liver diagnostic tests	3
Emergency and Critical Care Section	103. Recognize the clinical signs of shock	1 2 4
	104. Identify the different categories and explain the pathophysiology behind them	1 2 4
	105. Use the categories to direct treatments	1 2 4 5
	106. Describe a goal-directed therapy approach to treatment	4 5
Renal Section	107. Distinguish lower urinary tract signs from upper urinary tract signs, using patient history, interrogation of owners, clinical signs, and physical exam findings	1
	108. Differentiate pre-renal azotemia, renal azotemia, and post-renal azotemia	1 2 3 4
	109. Identify differentiating characteristics of acute kidney injury vs. chronic kidney disease, and develop differential diagnoses list and diagnostic plan for each	1 2 3 4
	110. Using laboratory abnormalities, identify the subtypes of renal disease: glomerular and tubular diseases	2 3

	111. Construct a diagnostic plan for renal and urinary diseases	2,3
Endocrine section SA and EQ	112. Review and explain the anatomy and physiology/pathophysiology of the major endocrine organs	1
	113. Compare and contrast different endocrine diagnostic tests, understand how to perform them and using epidemiology concepts select an appropriate test in dogs, cats and horses	1 3
	114. Using presenting complaints, clinical signs, history and PE findings develop a differential diagnosis/rule out list and select appropriate testing to diagnose Diabetes mellitus, hyperthyroidism, hyperadrenocorticism, PPID and Equine metabolic syndrome.	1 2 3 4 6
Respiratory system SA and EQ	115. Review anatomy and physiology and discuss the diagnostic tests to choose for a given anatomical area in a variety of species	1 2 3 4
	116. Using presenting complaints, clinical signs, history PE so select appropriate diagnostic tests and be able to diagnose foreign bodies, fungal infections, neoplasia and nasopharyngeal polyps, laryngeal paralysis, brachycephalic airway syndrome, collapsing trachea, infectious and inflammatory parenchymal diseases, and guttural pouch disease	1 2 3 4 5 6
	117. Compare and contrast airway sampling techniques for a variety of species and be able to select the appropriate choice for a given case example	1 2 3
	118. Distinguish between hypoxemia and hypoxia	2
	119. Explain the A-a gradient	3
	120. Calculate the PaO2 for a given inspired oxygen concentration	3
Food Animal Production	121. Discuss the importance of FA production and the social and economic impact	1

	122. Discuss food safety and biosecurity issues	1
	123. Compare and contrast dairy and beef production. Discuss pork, poultry and small ruminant production and the different strategies that are utilized	1
	124. Review the major breeds in dairy, beef, pork, poultry and small ruminant production and industry standards and statistics	1
Cardiology Section	125. Review pertinent anatomy and physiology and apply it to case examples	1 2 4
	126. Describe common clinical signs of cardiac disease and explain the physiology/pathophysiology	1 2 4
	127. Evaluate the heart's priorities and utilize this to explain CHF	1 2 4
	128. Discuss and recognize the clinical signs of CHF	1 4
	129. Compare and contrast the major diagnostic tests available for cardiac patients and know when to select appropriate choices	2 3 4
	130. Describe common murmurs and be able to grade them	1
	131. Describe the importance of systemic blood pressure monitoring for a variety of diseases	1 2
	132. Compare and contrast systemic hypertension with pulmonary hypertension	1 2
	133. Describe common arrhythmias present in a variety of species	1 3 4
	134. Using presenting complaints, clinical signs, history and PE finding to select appropriate diagnostic tests and be able to diagnose CHF, MVD, HCM, DCM, systemic hypertension, pulmonary hypertension, atrial vs. ventricular arrhythmias, ventricular tachycardia, atrial fibrillation, and heart blocks	1 2 3 4

	135. Compare and contrast syncope and seizures	1 4 6
	136. Compare and contrast obtaining an ECG's in small animals' vs equines	3
	137. Describe the MEA and discuss the implications for a given patient	3
Biosecurity Section	138. Define biosecurity	2
	139. Explain the importance of biosecurity in disease control	2
	140. Review ways diseases might be spread to you, your family, small animal clinic situations, animals on a farm/stable and at exhibitions	1 2 3
	141. Describe measures to prevent disease spread to you, your family, small animal clinic situations, animals on a farm/stable and at exhibitions	1 2 3
Theriogenology Section	142. Review clinical reproductive anatomy and physiology of cattle and compare it briefly with those of sheep, goats and pigs 143. Identify reproductive abnormalities based on history and clinical signs 144. Formulate diagnostic and treatment/prevention plans 145. Design appropriate breeding plans 146. Review equine clinical reproductive anatomy and physiology of horses 147. Identify reproductive abnormalities based on history and clinical signs 148. Formulate diagnostic and treatment/prevention plans 149. Design appropriate breeding plans 150. Review SA clinical reproductive anatomy and physiology of dogs and compare it briefly with those of cats 151. Identify reproductive abnormalities based on history and clinical signs 152. Formulate diagnostic and treatment/prevention plans 153. Design appropriate breeding plans	1 2 3
Lameness/Musculoskeletal Section	154. Identify possible species-specific causes of lameness 155. Describe how to localize a lameness 156. Identify appropriate diagnostic tests to identify the cause of lameness	1 2 3

LAMS 505
Dr. Nicki Wise & Dr. Catherine Werners-Butler

Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
[Muscle] Lectures: 1. Muscle 1 2. Muscle 2	[Muscle] Lectures via Panopto: 1. Muscle 1 2. Muscle 2	March 23-29	Fill out myopathy chart during lecture. Submit on sakai Open March 23rd Due April 5th [10 points]
[Hemolymphatic] Lectures: 1. Hemo 1 2. Hemo 2	[Hemolymphatic] Lectures via Panopto: 1. Hemo 1 2. Hemo 2	March 23-29	Case Work Up on Sakai Tests and Quizzes Open March 23rd Due April 5th [10 points]
[Liver & Urinary] Lectures: 1. Liver 1 2. Liver 2 3. Urinary 1 4. Urinary 2	[Liver & Urinary] Lectures via Panopto: 1. Liver 1 2. Liver 2 3. Urinary 1 4. Urinary 2	March 30-April 5	Case Work Up on Sakai Tests & Quizzes Open March 30th Due April 12th [10 points]
[Cardio & Respiratory] Lectures: 1. Cardio 2. Resp 1 3. Resp 2 4. Resp 3 5. Clin Pharm Resp	[Cardio & Respiratory] Lectures via Panopto: 1. Cardio 2. Resp 1 3. Resp 2 4. Resp 3	April 6-12	Case Work Up on Sakai Tests & Quizzes Open April 6th Due April 19th [10 points]
[Inf Dz & Ophtho] Lectures: 1. InfDz 1 2. InfDz 2 3. Ophtho 1	[Inf Dz & Ophtho] Lectures: 1. InfDz 1 2. InfDz 2 3. Ophtho 1	April 13-19	Inf Dz – Chart to fill out during lecture. Submit on sakai. Open April 13th Due April 27th [10 points]

[Neonatology] Lectures: 1. Foal Intro 2. Foal Cases 1 3. Foal Cases 2 4. Neonate Clin Pharm	[Neonatology] Lectures: 1. Foal Intro 2. Foal Cases 1 3. Foal Cases 2	April 20-24	Case Work Up on Sakai Tests & Quizzes Open April 20th Due May 4th [10 points]
EXAM REVIEW (2 hours)			CANCELLED
Total lectures: 21	Total lectures (Panopto): 17		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _100__ *Total points breakdown:* 40 Midterm 60 Final	Total points = 100___ *Total points breakdown:* 40 Midterm 60 Assignments (see above) [include added assignments/low stakes assessments]

Learning outcomes: please list any CLO or LLO's which were omitted below:

*The respiratory and neonate clinical pharmacology lectures were to be new this term so no course content has been omitted.

SVM Course Code: LAMS 515
Course Director: Dr. Stacey Byers
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Lectures: lecture numbers correspond to original syllabus. See syllabus for LLOs. None have been dropped for the remainder of the term: Originally listed as lectures: 47-58.Gastrointestinal tract	Lectures via Panopto: 1. Oral cavity and esophagus 2. Oral cavity and esophagus 3. Rumen, reticulum, omasum 4. Rumen, reticulum, omasum 5. Rumen, reticulum, omasum	March 9-13	This topics were covered after midterms but before the change in course delivery. The materials will be covered in the quizzes.
	Lectures via Panopto: 6. Abomasum 7. Vagal syndrome 8. GIT – Intestines and Diarrhea Part 1 9. GIT – Intestines Part 2 Zoom office hours	March 23-29 GIT panopto: Abomasal Diseases Vagal Syndrome Intestines and Diarrhea part 1 Intestines and Diarrhea part 2	
59. Euthanasia 60-61. Hemolymphatics 62-63. Ophthalmology	Lectures via Panopto: 10. Euthanasia 11. Hemolymphatics 12. Hemolymphatics 13. Ophthalmology Zoom office hours	March 30-April 5 Euthanasia Panopto 1 Hemolymphatics panopto 1-2 Ophthalmology panopto 1	**Sakai Quiz 1 Opens Monday March 30, 8:00 am AST;** Covers Panopto Lectures 1-9 (45 points)
65-67. Cardiology 68-72. Neurology	Lectures via Panopto: 14. Cardiology 15. Cardiology 16. Cardiology 17. Neurology 18. Neurology Zoom office hours	April 6-12 Cardiology panopto 1-3 Neurology panopto 1-2	**Sakai Quiz 1 closes Monday April 6, 8:00 am AST**

73-75. Multisystemic	Lectures via Panopto: 19. Neurology 20. Neurology 21. Multisystemic 22. Multisystemic 23. Multisystemic Zoom office hours	April 13-19 Neurology panopto 3-4 Multisystemic 1-3	**Sakai Quiz 2 Opens Saturday April 18, 8:00 am AST;** Covers Panopto Lectures 10-23 (45 points)
		April 20-May 3	
		May 4-May 10	**Sakai Quiz 2 closes Monday May 4, 8:00 am AST**

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 199 *Total points breakdown:* Quiz 1 14 pts Midterm 76 pts Quiz 2 13 pts Final 96 pts	Total points = 180 pts *Total points breakdown:* Through midterm (already completed) 90 pts Quiz 1: 45 pts Quiz 2: 45 pts

Learning outcomes: please list any CLO or LLO's which were omitted below:

No LLOs or CLOs were omitted in this course.

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
***FOOD ANIMAL INTERNAL MEDICINE* (5 Credits)**
LAMS 515 TERM 6

Spring 2020 Online Course Completion

Course Director: Dr. Stacey Byers, sbyers1@sgu.edu

A. Please email me if you have questions or concerns. If the information is relevant to the entire class, I'll post in Forums in the class Sakai folder.

B. Please check the Sakai folder on a regular basis.

C. Lecture notes will be added to the resources folder.

D. **All courses will be recorded and delivered via Panopto** and released at the start of each week on Sakai. Please keep up to date on the videos so you aren't trying to cram for the quizzes. **There will be some questions embedded into the Panopto** videos to replace the Turning Point questions.

E. **There will be weekly Zoom sessions for office hours.** These will be on Fridays from 1-2 pm AST so all time zones can participate. They will also be recorded and uploaded into Sakai. I'll send out announcements as we get closer to those times.

F. Sakai Quizzes 1 and 2 will be available for at least 1 week. Quizzes will have a limited time for completion. **I will NOT allow late submissions without prior notification**. If you are unable to take the quiz in the allotted window, please notify me ASAP. Special accommodation times will be provided if needed. More information will be provided prior to the quiz.

G. Grading scheme for this course:
Beginning of term to midterm = 90 pts
Post midterm to end of term = 90 pts

The schedule for the remainder of the term is as follows.

Lecture No.	Topic	Assessments
Week of March 9		
1	Gastrointestinal Tract – oral cavity and esophagus	Note: these lectures have already been given 😊. The slides have been placed in the March 9 Resources folder and Panopto folder.
2	GIT – oral cavity and esophagus	
3	GIT – Rumen, reticulum, omasum	
4	GIT – Rumen, reticulum, omasum	
5	GIT – Rumen, reticulum, omasum	
Week of March 23		
6	GIT – Abomasum and vagal syndrome	
7	GIT Vagal Syndrome	
8	GIT – Intestines and Diarrhea Part 1	
9	GIT – Intestines and Diarrhea Part 2	
	Zoom office hours	Friday 1-2 pm AST
Week of March 30		
		Sakai Quiz 1 Opens Saturday March 28, 8:00 am AST; Lectures 1-9 (45 points)
10	Euthanasia	
11	Hemolymphatics Part 1	
12	Hemolymphatics Part 2	
13	Ophthalmology	
	Zoom office hours	Friday 1-2 pm AST
Week of April 6		
14	Cardiology	**Sakai Quiz 1 Closes Monday April 6, 8 am AST**
15	Cardiology	
16	Cardiology	
17	Neurology	
18	Neurology	
	Zoom office hours	Friday 1-2 pm AST

Week of April 13		
19	Neurology	
20	Neurology	
21	Multisystemic	
22	Multisystemic	
23	Multisystemic	
	Zoom office hours	Friday 1-2 pm AST
		Sakai Quiz 2 Opens Saturday April 18, 8:00 AST; Lectures 10-23 (45 points)
Week of April 20		**Nothing due**
Week of May 4		**Sakai Quiz 2 closes Monday May 4, 8:00 am AST**

Grading scheme for this course:

Beginning of term – midterm was worth 90 points

Post-midterm to end of term is worth 90 points

Lesson level outcomes

A. 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.

B. Gastrointestinal tract

1. Review the gastrointestinal tract anatomy and physiology of the different livestock species.
2. Describe the etiology and pathophysiology of gastrointestinal diseases of livestock.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.
6. Describe the types of vagal indigestion, the underlying causes, and how to distinguish between them diagnostically and clinically.

C. Ophthalmology

1. Explain normal and abnormal ocular findings.
2. Describe the etiology and pathophysiology of ocular disorders in livestock.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests for a variety of husbandry situations and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

D. 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.

E. 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.

F. Cardiovascular system

1. Describe the etiology and pathophysiology of cardiovascular disorders.
2. Develop an appropriate differential diagnosis list.

3. Select appropriate diagnostic tests and explain test results.
4. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

G. Multisystemic diseases

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.

H. Zoonotic and Reportable diseases

1. Identify zoonotic diseases and how to appropriately manage them.
2. Identify the vesicular diseases that occur in livestock and the veterinarian's role a vesicular disease outbreak.

SVM Course Code: LAMS 516
Course Director: Dr Heidi Janicke
Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Equine female urogenital tract conditions Lectures: 1. Equine female urogenital tract conditions 2. Equine female urogenital tract cases	Equine female urogenital tract conditions Lectures via Panopto: 1. Equine female urogenital tract conditions Zoom interactive session (optional) 2. Equine female urogenital tract cases	March 23-27 Date and time TBC	Formative MCQs on Sakai: Tests & Quizzes No points Open March 27th – end of term Please use these questions to inform your learning
Bovine gastrointestinal tract conditions Lectures: 1. Bovine GI tract conditions 2. Bovine GI tract conditions 3. Bovine GI tract cases	Bovine gastrointestinal tract conditions Lectures via Panopto: 1. Bovine GI tract conditions 2. Bovine GI tract conditions Zoom interactive session (optional) 3. Bovine GI tract cases	March 30 – April 3 Date and time TBC	Formative MCQs on Sakai: Tests & Quizzes No points Open April 3rd – end of term Please use these questions to inform your learning
Bovine musculoskeletal tract conditions Lectures: 1. Bovine musculoskeletal tract conditions 2. Bovine musculoskeletal tract cases	Bovine musculoskeletal tract conditions Lectures via Panopto: 1. Bovine musculoskeletal tract conditions Zoom interactive session (optional) 2. Bovine musculoskeletal tract cases	April 6 – 10 Date and time TBC	Formative MCQs on Sakai: Tests & Quizzes No points Open April 10th – end of term Please use these questions to inform your learning

Eye & horn conditions Lectures: 1. Eye & horn conditions 2. Eye & horn cases	Eye & horn conditions Lectures via Panopto: 1. Eye & horn conditions Zoom interactive session (optional) 2. Eye & horn cases	April 13 -17 Date and time TBC	Formative MCQs on Sakai: Tests & Quizzes No points Open April 17th – end of term Please use these questions to inform your learning
Miscellaneous conditions Lectures: 1. Teat conditions 2. Umbilical masses and selected surgeries	Miscellaneous conditions Lectures via Panopto: 1. Teat conditions 2. Umbilical masses and selected surgeries	April 20-24	Formative MCQs on Sakai: Tests & Quizzes No points Open April 24th – end of term Please use these questions to inform your learning
Wounds and skin conditions Lectures: 1. Wounds and skin conditions 2. Wounds and skin conditions 3. Wounds and skin cases 4. Wounds and skin cases	Wounds and skin conditions Lectures vis Panopto 1. Wounds and skin conditions 2. Wounds and skin conditions Zoom interactive session (optional) 3. Wounds and skin cases (double session)	April 27-30 Date and time TBC	Formative MCQs on Sakai: Tests & Quizzes No points Open April 24th – end of term Please use these questions to inform your learning
	Zoom interactive session (optional) Review session	May 4 – 8 Time and date TBC	May 15th Final (55 points)
Total lectures: 15	Total lectures (Panopto): 9 Zoom interactive sessions (optional): 5		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 75 *Total points breakdown:* Midterm exam 20 points (already achieved) Final exam 55 points	Total points =74 *Total points breakdown:* Midterm exam 20 points (already achieved) Final exam 55 points

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

Due to the already condensed version of this course it was unnecessary to omit any LOs.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

LAMS

***LARGE ANIMAL SURGERY I* (2 CREDITS)**

LAMS 516 TERM 5

Spring 2020

I. Course Faculty and Staff Information

Dr Heidi Janicke, VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA
Associate Professor in Large Animal Surgery
Office: Cassia Building (SGU campus map: # 17)
Tel: 444 - 4175 ext 3306
Email: hjanicke@sgu.edu
Office Hours: by appointment

II. Course location

Ray & Jan Sis Lecture Theatre 1

III. Prerequisite 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
- Adams' Lameness in Horses
- Blowey: Cattle Lameness and Hoofcare: An illustrated guide
- Dyson & Ross: Diagnosis and Management of Lameness in the Horse
- Fubini & Ducharme: Farm Animal Surgery
- Knottenbelt: Handbook of Equine Wound Management
- McIlwraith & Turner: Techniques in Large Animal Surgery

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

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

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

VI. Special accommodation

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

VII. Other requirements

N/A

VIII. Course rationale

This purely didactic class aims to prepare students for 4th year clinics, the NAVLE and their future career. It aims to introduce students to surgical conditions, including trauma, encountered in the livestock 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 with be honed using case-based scenarios, which in addition will encourage better in-depth learning of the material.

IX. Course-level 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 and equine species.
3. Recognize the clinical signs of surgical conditions of the major organ systems in the livestock and equine species.
4. Determine appropriate techniques for diagnosis of surgical conditions of the major organ systems in the livestock and equine species.
5. Determine treatment and management plans for surgical conditions of the major organ systems in the livestock and equine species.
6. Provide a prognosis for individual cases of surgical conditions of the major organ systems in the livestock and equine species.

X. Lesson-level outcomes

See appendix I

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course level outcome	SVM 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. PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases. PLO 9 Apply the principles of veterinary public health for the promotion of human and animal health. **B. Core Professional Attributes** PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences. **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.
CLO B Identify the aetiology and pathogenesis of surgical conditions of the major organ systems in the	**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.

livestock and equine species.	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.
CLO C Recognize the clinical signs of surgical conditions of the major organ systems in the livestock and equine species.	**A. Core Medical Knowledge** PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 4 Explain the relationship between disease processes and clinical signs. PLO 7 Evaluate and analyze normal versus abnormal animal behavior.
CLO D Determine appropriate techniques for diagnosis of surgical conditions of the major organ systems in the livestock and equine species.	**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. **B. Core Professional Attributes** PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. **C. Core Clinical Competencies (Skills)** PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
CLO E Determine treatment and management plans for surgical conditions of the major organ systems in the livestock and equine species	**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. **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 15 Model lifelong continuing education and professional development.

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

XII. Course Schedule

See Appendix II

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 two graded exams during the course with 75 questions overall.

The exam material will come from resources on MyCourses, lectures and in class discussions. Questions will be multiple-choice questions with one single best answer and all questions will be of equal value.

The number of questions from each hour of lecture will be relatively equal (approximately 3 per session).

The Final exam will be comprehensive (questions may include all information assigned and lectured on prior to the exam).

The listing of lectures relative to exams might vary from that in the syllabus. We will discuss during the lecture preceding each exam where the exam will start and end, relative to the lectures and the lecture notes.

All other exam policies are followed according to the SGU Assessment Guidelines and the Student Handbook.

Listing of lectures relative to exams (approximate)

Lecture #	**Midterm**	**Final**
1-11	20	10
12-28		45
MCQs/exam	20 (30 minutes)	55 (75 minutes)

XIV. Recommended study strategies

A number of 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 to the lecture to add information during the discussions.

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.

Review of the course every night 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 come to 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 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 in the classroom, so please speak up.

XVI. Professionalism statement

The 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.

Please exhibit professional behavior in class. Students are expected to **arrive on time** for lectures and exams. **The use of mobile phones is not allowed** during class and exams.

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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.

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

Make-up exams may include MCQs, short answer questions and short essay questions.

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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. 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.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and

ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.

9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

    *No other personal belongings will be permitted.

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 I: Lesson Level Outcomes

Session title	Learning outcomes
Lecture: Introduction to LAMS516	
Lecture: Principles of large animal surgery	Recognize the challenges specific to large animal surgery Identify appropriate suture materials and patterns for use in large animals Determine appropriate analgesic and anaesthetic techniques for surgery in large animals
Lecture: Female livestock urogenital tract conditions	Review the clinical anatomy of the urogenital tract in female livestock Identify surgical conditions of the urogenital tract of female livestock Determine the appropriate treatment for these conditions and recognise their advantages and limitations
Lecture: Female livestock urogenital tract conditions	
Case studies: Female livestock urogenital tract cases	
Lecture: Male livestock urogenital tract conditions	Review the clinical anatomy of the urogenital tract in male livestock Determine the appropriate surgical treatment for teaser bulls and recognise their advantages and limitations Determine the appropriate surgical treatment for urolithiasis and other conditions of the urogenital tract depending on the signalment of the individual animal and recognise their advantages and limitations
Case studies: Male livestock urogenital tract cases	
Lecture: Castration	Review the clinical anatomy of the testes in livestock and horses Appreciate the indications for castration in the different species Appreciate pre-operative considerations in the different species and determine appropriate restraint and analgesia/anaesthesia Determine the appropriate castration method, depending on the signalment of the individual animal

Lecture: Castration complications	Identify complications of castration Determine the appropriate method of treatment for castration complications.
Lecture: Male equine urogenital tract conditions	Review the clinical anatomy of the urogenital tract in the male horse Identify surgical conditions of the urogenital tract in the male horse Determine the appropriate treatment for these conditions and recognise their advantages and limitations
Lecture: Female equine urogenital tract conditions **Case studies**: Female equine urogenital tract cases	Review the clinical anatomy and physical examination technique of the urogenital tract in the female horse Identify surgical conditions of the urogenital tract in the female horse Determine the appropriate treatment for these conditions and recognise their advantages and limitations
Lecture: Bovine GI tract conditions **Case studies**: Bovine GI tract cases	Identify surgical conditions of the bovine gastrointestinal tract Determine appropriate surgical approaches to bovine gastrointestinal conditions
Lecture: Bovine musculoskeletal conditions **Case studies**: Bovine musculoskeletal cases	Describe how to carry out a lameness examination and foot trim in cattle Identify surgical conditions of the musculoskeletal system in livestock Determine the appropriate treatment for these conditions and recognise their advantages and limitations
Lecture: Eye & horn conditions **Case studies**: Eye & horn cases	Determine appropriate analgesia/ anaesthesia for surgery of the eye and horn Identify surgical conditions of the eye and describe simple surgical procedures of the eye Determine the appropriate method of dehorning, depending on the signalment of the individual animal
Lecture: Teat surgery	Review the clinical anatomy of the teat and safe handling/ examination of the mammary glands Determine appropriate analgesia/ anaesthesia for surgery of the teat

	Identify surgical conditions of the teats and describe simple surgical procedures of the teat
Lecture: Umbilical masses and selected other surgeries	Review the clinical anatomy of the umbilicus Differentiate between causes of umbilical masses and identify the appropriate surgical treatment of each Appreciate reasons for and determine the appropriate method of tail docking, depending on the signalment of the individual animal Identify rectal prolapse in pigs and describe corrective procedures Determine the appropriate method of castration and canine tooth removal in llamas
Lecture: Wounds and skin conditions	Identify the appropriate method of 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
Case studies: Wounds and skin cases	

APPENDIX II: Course Schedule

Lecturer: Dr Heidi Janicke, PhD, MRCVS, DECVS, SFHEA, Associate Professor

Week	Hr	Date	Session title
1	1	20th Jan 3:30	**Lecture**: Introduction to Large Animal Surgery
	2	23rd Jan 4:30	**Lecture**: Principles of Large Animal Surgery
3	3	6th Feb 2:30	**Lecture**: Female livestock urogenital tract conditions
	4	6th Feb 3:30	**Lecture**: Female livestock urogenital tract conditions
4	5	10th Feb 4:30	**Case studies**: Female livestock urogenital tract cases
	6	11th Feb 3:30	**Lecture**: Male livestock urogenital tract conditions
	7	13th Feb 3:30	**Case studies**: Male livestock urogenital tract cases
	8	14th Feb 2:30	**Combined LA Sx/Med urogenital case**
5	9	18th Feb 1:30	**Lecture**: Castration
	10	20th Feb 1:30	**Lecture**: Castration complications
6	11	24th Feb 4:30	**Lecture**: Male equine urogenital tract conditions
8		**9th Mar 1:30**	**MIDTERM**
9	12	16th Mar 3:30	**Lecture**: Female equine urogenital tract conditions
	13	17th Mar 3:30	**Lecture**: Female equine urogenital tract conditions
	14	18th Mar 3:30	**Case studies**: Female equine urogenital tract cases
11	15	31st Mar 3:30	**Lecture**: Bovine GI tract conditions
	16	2nd Apr 4:30	**Case studies**: Bovine GI tract cases
13	17	14th Apr 3:30	**Combined LA Sx/Med GIT case**
	18	15th Apr 3:30	**Lecture**: Bovine musculoskeletal conditions
	19	16th Apr 1:30	**Case studies**: Bovine musculoskeletal cases

14	20	23rd Apr 1:30	**Lecture**: Eye & horn conditions
15	21	27th Apr 1:30	**Case studies**: Eye & horn cases
	22	29th Apr 2:30	**Combined LA Sx/Med eye case**
	23	30th Apr 4:30	**Lecture**: Teat surgery
16	24	4th May 1:30	**Lecture**: Umbilical masses and selected other surgeries
	25	5th May 1:30	**Lecture**: Wounds and skin conditions
	26	5th May 2:30	**Lecture**: Wounds and skin conditions
	27	6th May 1:30	**Case studies**: Wounds and skin cases
	28	7th May 4:30	**Case studies**: Wounds and skin cases
17		**11th May 1:30**	**FINAL**

SVM Course Code: LAMS 519
Course Director: Dr. Firdous Khan
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Equine theriogenology Lectures: 1. Diagnosis of pregnancy 2. Infectious pregnancy losses 3. Non-infectious pregnancy losses 4. Parturition and dystocia 5. Postpartum problems 6. Infertility 7. Assisted reproductive techniques 8. Clinical reproductive physiology and breeding soundness evaluation of the stallion 9. Stallion infertility	Equine theriogenology Lectures via Panopto: 1. Diagnosis of pregnancy 2. Infectious pregnancy losses 3. Non-infectious pregnancy losses 4. Parturition and dystocia 5. Postpartum problems 6. Infertility 7. Assisted reproductive techniques 8. Clinical reproductive physiology and breeding soundness evaluation of the stallion 9. Stallion infertility	**March 23-29:** Equine theriogenology Panopto 1-3 **March 30-April 5:** Equine theriogenology Panopto 4-6 **April 6-12:** Equine theriogenology Panopto 7-9	Quizzes within Panopto recordings for formative assessment Quizzes within Panopto recordings for formative assessment Quizzes within Panopto recordings for formative assessment Sakai quiz (**Opens April 12, *Due May 19, 27 points***)
Canine theriogenology Lectures: 1. Clinical reproductive anatomy and physiology of the bitch 2. Breeding management I 3. Breeding management II 4. Pregnancy and parturition 5. Obstetrics 6. Gestational and postpartum problems 7. Control of reproduction 8. Female infertility I 9. Female infertility II 10. Male breeding soundness examination and infertility	Canine theriogenology Lectures via Panopto: 1. Clinical reproductive anatomy and physiology of the bitch 2. Breeding management 3. Pregnancy and parturition 4. Obstetrics 5. Gestational and postpartum problems 6. Control of reproduction 7. Female infertility I 8. Female infertility II 9. Male breeding soundness examination and infertility	**April 13-19:** Canine theriogenology Panopto 1-3 **April 20-26:** Canine theriogenology Panopto 4-6 **April 27-May 3:** Canine theriogenology Panopto 7-9	Quizzes within Panopto recordings for formative assessment Quizzes within Panopto recordings for formative assessment Quizzes within Panopto recordings for formative assessment Sakai quiz **(Opens May 3, *Due May 19, 27 points*)**

Feline theriogenology Lectures: 1. Feline reproduction I 2. Feline reproduction II	Feline theriogenology Lectures via Panopto: 1. Feline reproduction I 2. Feline reproduction II	**May 4-10:** Feline theriogenology Panopto 1-2	Quizzes within Panopto recordings for formative assessment Sakai quiz (**Opens May 6, *Due May 19, 4 points***)
Reproduction in Exotics Intro Lecture	Panopto recording (Optional)		
Total lectures: 22	Total lectures (Panopto): 20		
Previous Course Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Obstetrics Lab: 1. Demonstrate how to use obstetrical equipment 2. Identify presentation, position and posture correctly 3. Explain how to perform fetotomy	Obstetrics resources via Sakai: 1. Explain how to use obstetrical equipment 2. Identify presentation, position and posture correctly 3. Explain how to perform fetotomy	**March 30-April 5:** Lab resources including text, pictures and videos	Lab quiz on Sakai (**Opens April 5, *Due May 19, 2 points***) **Note: This is only for students who had this lab scheduled after midterms**
Transrectal ultrasonography Lab: 1. Perform transrectal ultrasonography in a cow 2. Interpret the clinical findings	Transrectal ultrasonography resources via Sakai: 1. Explain how to perform transrectal ultrasonography in a cow 2. Interpret clinical findings from a model transrectal ultrasonographic exam	**April 6-12:** Lab resources including text, pictures and videos	Lab quiz on Sakai (**Opens April 12, *Due May 19, 2 points***) **Note: This is only for students who had this lab scheduled after midterms**
Mare breeding soundness evaluation (BSE) lab: 1. Demonstrate how to perform a mare BSE 2. Interpret clinical findings from a mare BSE	Mare BSE resources via Sakai 1. List the steps involved in a mare BSE 2. Interpret findings from a model mare BSE	**April 13-19:** Lab resources including text and a video demonstrating how to perform a mare BSE	Lab quiz on Sakai (**Opens April 13, *Due May 19, 2 points***)
Small animal reproduction lab: 1. Demonstration how to perform vaginal cytology in a bitch 2. Demonstrate how to collect semen from a dog 3. Interpret clinical findings from a canine pre-breeding exam	Small Animal repro resources via Sakai: 1. Explain how to perform vaginal cytology in a bitch 2. Explain how to collect semen from a dog 3. Interpret clinical findings from a model canine pre-breeding exam.	**April 20-26:** Lab resources including text, pictures and videos	Lab quiz on Sakai (**Opens April 26, *Due May 19, 2 points***)

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 100 *Total points breakdown:* Quiz 1: 16 points Midterm exam: 16 points Quiz 2: 16 points Final exam: 45 points Lab quizzes: 7 points	Total points = 100 *Total points breakdown:* Quiz 1: 16 points Midterm exam: 16 points Sakai quizzes: 58 points Lab quizzes: 10 points

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. State the basic features of reproductive management in selected exotic species

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT

***THERIOGENOLOGY SYLLABUS* (4 credits)**

LAMS 519 TERM 5

SPRING 2020

I. Course Faculty and Staff Information

Course Director:
Dr. Firdous Khan, BVSc, MVSc, DVSc, Diplomate ACT
Associate Professor, Department of Large Animal Medicine and Surgery
Office Location: Large Animal Resource Facility (LARF)
Email: fkhan8@sgu.edu; Phone: 444-4175 ext. 3343
Office Hours: By appointment

Supporting faculty:
Dr. Elizabeth Cooksey, DVM
Instructor, Department of Large Animal Medicine and Surgery
Email: ECookse1@sgu.edu

Dr. Kerri Nigito, DVM
Instructor, Department of Large Animal Medicine and Surgery
Email: nigker1@sgu.edu

Dr. Zainab Momoh, DVM, MVPH
Demonstrator, Department of Large Animal Medicine and Surgery
Email: ZMomoh@sgu.edu

Dr. Afroza Khanam, BSc, MSc, Phd
Instructor, Department of Large Animal Medicine and Surgery
Email: afrozachem@gmail.com

II. Course location

Ray & Jan Sis Term 5 lecture hall for all lectures; LARF, Simulation Lab, Necropsy Lab and Charter Hall Lab for lab sessions

III. Prerequisite and/or co-requisite courses

Current 5th term SVM student

- 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 (texts, journal articles, course notes, laptop specs, etc.)

Study material posted on Sakai (lecture slides, lab notes and any other additional information posted on the course website or discussed in the lectures and lab sessions)

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

Recommended textbooks:

• Pathways to Pregnancy and Parturition – P.L. Senger (ISBN 0-9657648-1-8)
• Current Therapy in Large Animal Theriogenology (2nd Ed) – R.S. Youngquist & W.R. Threlfall (ISBN 0-7216-9323-7)
• Veterinary Reproduction and Obstetrics (9th Ed) – D.E. Noakes, T.J. Parkinson & G.C.W. England (ISBN 978-0-7020-2887-8)
• Canine and Feline Theriogenology – S.D. Johnston, M.V. Root Kustritz & P.N.S. Olsen (ISBN 0-7216-5607-2)
• BSAVA Manual of Canine and Feline Reproduction and Neonatology – G.C.W. England & A. von Heimendahl (ISBN 1-905319-19-0)
• Current therapy in equine reproduction – J.C. Samper, J.E. Pycock & A.O. McKinnon (ISBN 0-7216-0252-5)
• Manual of Equine Reproduction (3rd Ed) Steven Brinsko et al. (ISBN-13: 978-0-323-06482-8)
• Equine Reproductive Procedures (1st Ed) J. Dascanio & P. McCue (ISBN 978-0-470-96039-4)
•Equine Reproduction (2nd Ed) – A.O. McKinnon et al. (ISBN 978-0-8138-1971-6)

VI. Special accommodation

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

VII. Other requirements

Scrubs, gumboots, closed toe shoes, white lab coat

VIII. Course rationale (catalogue course description)

This course aims to equip students with an integrated and holistic view of all aspects of reproduction as it relates to cows, horses, small stock, dogs and cats using various techniques such as lectures and wet labs where students will learn various procedures and examination techniques.

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
- State the basic features of reproductive management in selected exotic species

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
	7. Discuss the major events and regulation of bovine pregnancy

Pregnancy and parturition	**8.** Analyze information about history, clinical findings from transrectal palpation and/or ultrasonography, and laboratory findings to diagnose pregnancy and differentiate it from other conditions (e.g. pyometra, mucometra, mummification, maceration etc.)
	9. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	10. Choose a method for induction of parturition/termination of pregnancy appropriate to the stage of gestation
Gestational abnormalities	**11.** Explain the pathogenesis of important gestational abnormalities (mummification, maceration, hydrops, vaginal prolapse)
	12. Differentiate between the important gestational abnormalities based on information about history and clinical findings
	13. List the treatment(s) and state the prognosis for each of the abnormalities
Obstetrics and dystocia	**14.** Classify the common causes of dystocia in the cow
	15. Analyze information about the birth canal and fetal viability and disposition to select the most appropriate obstetrical method
	16. Identify common obstetrical instruments and state their use
The puerperium	**17.** Describe the events that occur during the puerperal period and determine how they can affect reproductive efficiency
	18. Distinguish between different postpartum abnormalities and select the most appropriate method of treatment
Failure of pregnancy	**19.** List the infectious and non-infectious causes of failure of pregnancy in the cow
	20. Explain how to investigate and treat infertility or pregnancy failures in a herd
Assisted reproductive techniques	**21.** List the common assisted reproductive techniques used in the cow
	22. Illustrate how the common assisted reproductive techniques are employed for improving reproductive efficiency or herd productivity
Male reproduction	**23.** State how to perform a breeding soundness evaluation in a bull
	24. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Equine	
Comparative anatomy and physiology	**25.** List the anatomical and physiological differences from cattle and explain how they affect reproductive management in this species
Breeding management	**26.** Discuss breeding soundness evaluation in a mare
	27. List and explain the methods used for hastening the onset of breeding season in mares
	28. Describe the different breeding systems used in mares
Pregnancy and parturition	**29.** Discuss the major events and regulation of equine pregnancy
	30. State how to diagnose pregnancy in a mare with special emphasis on twin pregnancy diagnosis and management
	31. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	32. Describe the examination of fetal membranes postpartum and discuss the implications of abnormal findings
Obstetrics and dystocia	**33.** Classify the common causes of dystocia in the mare

	34. Analyze information about the birth canal and fetal viability and disposition to select the most appropriate obstetrical method
	35. Discuss the important conditions/reproductive problems associated with parturition in the mare
Failure of pregnancy	**36.** List the infectious and non-infectious causes of pregnancy failure in the mare
	37. Analyze history and clinical findings to provide a diagnosis of common gestational problems and choose the most appropriate treatment
	38. Describe how to diagnose and treat infertility in the mare
Assisted reproductive techniques	**39.** List the common assisted reproductive techniques used in equine reproduction
	40. Illustrate how the common assisted reproductive techniques are employed for improving reproductive efficiency or control of infertility
Male reproduction	**41.** State how to perform a breeding soundness evaluation in a stallion
	42. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Canine	
Comparative anatomy and physiology	**43.** List the anatomical and physiological differences from cattle and explain how they affect reproductive management in this species
	44. Describe how to monitor a bitch for ovulation and state the optimal time of breeding
	45. Identify normal and abnormal estrous cycles based on the provided history and clinical findings
Pregnancy and parturition	**46.** Discuss the major events and regulation of canine pregnancy
	47. State how to diagnose pregnancy and estimate the litter size in a bitch
	48. Identify the stages of parturition and determine if and when assistance is required for delivery of the fetus
	49. Explain how to determine the expected date of whelping and the appropriate time for an elective cesarean section
Obstetrics and dystocia	**50.** List the common causes of dystocia in the bitch
	51. Select the most appropriate obstetrical method based on the provided history and clinical findings
	52. Identify the common postpartum problems in a bitch and state the most appropriate treatment
Female infertility	**53.** List the common causes of infertility in the bitch
	54. Analyze the provided history and clinical findings to identify the cause of infertility
	55. State the methods for treating infertility including the use of assisted reproductive techniques
Contraception/Control of reproduction	**56.** List and explain the methods (surgical and non-surgical) to prevent, postpone or suppress reproduction in the bitch
	57. State the methods used to prevent or terminate unwanted pregnancy in the bitch
Male reproduction	**58.** State how to perform a breeding soundness evaluation in the dog

	59. Identify the common male reproductive abnormalities and state the most appropriate treatment, preventive measures, and prognosis for future fertility
Small ruminant reproduction	**60.** List the comparative anatomical and physiological features of small ruminants (using bovine for comparison) and explain how the differences impact their reproductive management
	61. Discuss the methods used in reproductive management of small ruminants
	62. State how to diagnose and manage the common reproductive abnormalities in small ruminants
Porcine reproduction	**63.** List the comparative anatomical and physiological features of pigs and explain how the differences impact their reproductive management
	64. Discuss the methods used in reproductive management of pigs
	65. State how to diagnose and manage the common reproductive abnormalities in pigs
Feline reproduction	**66.** List the comparative anatomical and physiological features of cats (using canine for comparison) and explain how the differences impact their reproductive management
	67. Discuss breeding management and control of reproduction in cats
	68. State how to diagnose and manage the common reproductive abnormalities in the cat
Exotics	**69.** Discuss the basic anatomical and physiological aspects of reproduction in selected exotic species
	70. List the most common reproductive abnormalities and discuss their management
Labs	
Reproductive anatomy	**71.** Identify different parts of the reproductive tract
	72. State the clinical relevance of different organs of the reproductive tract
Bovine transrectal palpation	**73.** List the preparatory steps and precautions that need to be taken before and during rectal palpation in the cow
	74. Safely perform transrectal palpation for pregnancy diagnosis in a cow
	75. List the definitive and suggestive signs of bovine pregnancy
Bull breeding soundness evaluation	**76.** List the essential components of a bull breeding soundness evaluation (BSE)
	77. Perform BSE in a bull safely
	78. Interpret the findings of the BSE to classify the bull as being a satisfactory, questionable or unsatisfactory breeder.
Obstetrics	**79.** Identify the common obstetric equipment and state their use
	80. Assess the presentation, position and posture of the fetus
	81. Demonstrate how to determine fetal viability using different reflexes
	82. Demonstrate how to perform epidural anesthesia in a cow
Mare breeding soundness evaluation	**83.** List the components of a mare breeding soundness evaluation (BSE)
	84. State how to safely perform BSE in a mare
	85. Interpret the findings of a mare BSE
Canine reproduction	**86.** Demonstrate how to collect and evaluate semen in a dog

	87. Demonstrate how to perform vaginal cytology in a bitch
	88. Examine a vaginal smear 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
Discuss and illustrate the normal reproductive cycles of domestic animal species	**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. **B. Core Professional Attributes** Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.
Apply the knowledge of reproductive physiology and endocrinology to control or manage domestic animal reproduction	**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. **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.

	C. Core Clinical Competencies (Skills) Analyze, design and execute appropriate plans for medical case management. Design and execute plans for health promotion, disease prevention, and food safety. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
Identify reproductive abnormalities and formulate therapeutic or preventative management strategies	**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. **B. Core Professional Attributes** Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. **C. Core Clinical Competencies (Skills)** Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create comprehensive treatment plans.
Discuss various reproductive techniques employed in management of reproduction or control of infertility	**A. Core Medical Knowledge** Recall, understand, and adequately utilize knowledge of and apply principles of therapeutic agents and their application, including relevant legislation and guidelines on the use of medicines. **B. Core Professional Attributes**

	Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy. Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. **C. Core Clinical Competencies (Skills)** Analyze, design and execute appropriate plans for medical case management. Design and execute plans for health promotion, disease prevention, and food safety.
State the basic features of reproductive management in selected exotic species	**A. Core Medical Knowledge** Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.

XII. Course Schedule

LAMS 519 Lecture Schedule Spring 2020 (Lecturer: Dr. Firdous Khan)					
Lecture No.	**Date**	**Day**	**Time**	**Section**	**Lecture title(s)**
1	20th January	Monday	4:30-5:20 pm	Bovine	Reproductive anatomy and physiology review
2	21st January	Tuesday	3:30-4:20 pm		Follicular dynamics and endocrinology review
3	22nd January	Wednesday	3:30-4:20 pm		Estrus synchronization and artificial insemination
4	23rd January	Thursday	3:30-4:20 pm		Pregnancy
5	27th January	Monday	3:30-4:20 pm		Diagnosis of pregnancy
6	30th January	Thursday	1:30-2:20 pm		Accidents of gestation
7	31st January	Friday	1:30-2:20 pm		Parturition
8	3rd February	Monday	4:30-5:20 pm		Dystocia

9	4th February	Tuesday	1:30-2:20 pm		Postpartum problems
10	5th February	Wednesday	1:30-2:20 pm		Abortion I
11	6th February	Thursday	4:30-5:20 pm		Abortion II
	10th February	**Monday**	**1:30-2:20 pm**		**Quiz # 1**
12	12th February	Wednesday	1:30-2:20 pm		Infertility
13	13th February	Thursday	1:30-2:20 pm		Assisted reproductive techniques
14	14th February	Friday	3:30-4:20 pm		Clinical reproductive physiology and breeding soundness evaluation of the bull
15	17th February	Monday	1:30-2:20 pm		Bull infertility
16	19th February	Wednesday	1:30-2:20 pm	Small ruminants	Small ruminant reproduction I
17	24th February	Monday	3:30-4:20 pm		Small ruminant reproduction II
18	25th February	Tuesday	4:30-5:20 pm		Small ruminant reproduction III
19	26th February	Wednesday	1:30-2:20 pm	Porcine	Porcine reproduction I
20	27th February	Thursday	4:30-5:20 pm		Porcine reproduction II
21	28th February	Friday	1:30-2:20 pm	Equine	Clinical reproductive anatomy and physiology of the mare
22	2nd March	Monday	3:30-4:20 pm		Manipulation of the estrous cycle
23	4th March	Wednesday	3:30-4:20 pm		Breeding soundness evaluation
24	4th March	Wednesday	4:30-5:20 pm		Breeding management
25	5th March	Thursday	4:30-5:20 pm		Pregnancy
	13th March	**Friday**	**1:30-2:20 pm**		**Midterm exam**
26	16th March	Monday	4:30-5:20 pm		Diagnosis of pregnancy
27	17th March	Tuesday	1:30-2:20 pm		Infectious pregnancy losses
28	18th March	Wednesday	4:30-5:20 pm		Non-infectious pregnancy losses

29	19th March	Thursday	1:30-2:20 pm		Parturition and dystocia
30	20th March	Friday	3:30-4:20 pm		Postpartum problems
31	23rd March	Monday	3:30-4:20 pm		Infertility
32	25th March	Wednesday	3:30-4:20 pm		Assisted reproductive techniques
33	26th March	Thursday	2:30-3:20 pm		Clinical reproductive physiology and breeding soundness evaluation of the stallion
	30th March	**Monday**	**1:30-2:20 pm**		**Quiz # 2**
34	31st March	Tuesday	1:30-2:20 pm		Stallion infertility
35	1st April	Wednesday	2:30-3:20 pm	Canine	Clinical reproductive anatomy and physiology of the bitch
36	2nd April	Thursday	1:30-2:20 pm		Breeding management I
37	2nd April	Thursday	2:30-3:20 pm		Breeding management II
38	3rd April	Friday	3:30-4:20 pm		Pregnancy and parturition
39	7th April	Tuesday	1:30-2:20 pm		Obstetrics
40	8th April	Wednesday	4:30-5:20 pm		Gestational and postpartum problems
41	9th April	Thursday	1:30-2:20 pm		Control of reproduction
42	14th April	Tuesday	4:30-5:20 pm		Female infertility I
43	15th April	Wednesday	1:30-2:20 pm		Female infertility II
44	22nd April	Wednesday	1:30-2:20 pm		Male breeding soundness examination and infertility
45	24th April	Friday	1:30-2:20 pm	Feline	Feline reproduction I
46	29th April	Wednesday	4:30-5:20 pm		Feline reproduction II
47	5th May	Tuesday	4:30-5:20 pm	Exotics	Exotic animal reproduction
48	6th May	Wednesday	4:30-5:20 pm		Clinical cases
	12th May	**Tuesday**	**1:30-3:30 pm**		**Final exam**

	LAMS 519 (Theriogenology) Lab Schedule Spring 2020					
Week	**Day**	**Date**	**Time**	**Lab**	**Groups**	**Location**
1	**Tue**	21-Jan	8:30-10:20 am	Reproductive Anatomy	**Group C**	Necropsy lab
	Wed	22-Jan	8:30-10:20 am	Reproductive Anatomy	**Group B**	Necropsy lab
	Thur	23-Jan	8:30-10:20 am	Reproductive Anatomy	**Group A**	Necropsy lab
2	**Tue**	28-Jan	8:30-9:20 am	Bovine transrectal palpation I	**Groups C1-C3**	LARF
			9:30-10:20 am	Bovine transrectal palpation I	**Groups C4-C6**	LARF
	Wed	29-Jan	8:30-10:20 am	Bull BSE	**Groups B1-B4**	LARF
	Fri	31-Jan	8:30-10:20 am	Bull BSE	**Groups A1-A4**	LARF
3	**Tue**	4-Feb	8:30-9:20 am	Bovine transrectal palpation I	**Groups B1-B3**	LARF
			9:30-10:20 am	Bovine transrectal palpation I	**Groups B4-B6**	LARF
	Wed	5-Feb	8:30-10:20 am	Bull BSE	**Groups A9+B5-B8**	LARF
4	**Tue**	11-Feb	8:30-9:20 am	Bovine transrectal palpation I	**Groups A1-A3**	LARF
			9:30-10:20 am	Bovine transrectal palpation I	**Groups A4-A6**	LARF
	Wed	12-Feb	8:30-10:20 am	Obstetrics & calving equipment	**Groups A6-A9**	Simulation lab
	Fri	14-Feb	8:30-10:20 am	Obstetrics & calving equipment	**Groups C6-C9**	Simulation lab
5	**Tue**	18-Feb	8:30-9:20 am	Bovine transrectal palpation I	**Groups B7-B8**	LARF
			9:30-10:20 am	Bovine transrectal palpation I	**Groups C7-C9**	LARF
	Wed	19-Feb	8:30-10:20 am	Bull BSE	**Groups C1-C4**	LARF
6	**Tue**	25-Feb	8:30-9:20 am	Bovine transrectal palpation I	**Groups A7-A9**	LARF
	Wed	26-Feb	8:30-10:20 am	Obstetrics & calving equipment	**Groups B1-B4**	Simulation lab
	Thur	27-Feb	8:30-10:20 am	Bull BSE	**Groups C5-C9**	LARF
	Fri	28-Feb	8:30-10:20 am	Obstetrics & calving equipment	**Groups B5-B8**	Simulation lab
7	**Tue**	3-Mar	8:30-9:20 am	Bovine transrectal palpation II	**Groups C1-C3**	LARF
			9:30-10:20 am	Bovine transrectal palpation II	**Groups C4-C6**	LARF
	Thur	5-Mar	8:30-10:20 am	Bull BSE	**Groups A5-A8**	LARF
9	**Tue**	17-Mar	8:30-9:20 am	Bovine transrectal palpation II	**Groups A1-A3**	LARF
			9:30-10:20 am	Bovine transrectal palpation II	**Groups A4-A6**	LARF
	Wed	18-Mar	8:30-10:20 am	Obstetrics & calving equipment	**Groups A1-A5**	Simulation lab
	Thur	19-Mar	8:30-10:20 am	Mare BSE	**Groups C1-C4**	LARF

10	**Tue**	24-Mar	8:30-9:20 am	Bovine transrectal palpation II	**Groups B1-B3**	LARF
			9:30-10:20 am	Bovine transrectal palpation II	**Groups B4-B6**	LARF
	Wed	25-Mar	8:30-10:20 am	Obstetrics & calving equipment	**Groups C1-C5**	Simulation lab
	Thur	26-Mar	8:30-10:20 am	Mare BSE	**Groups A1-A4**	LARF
11	**Tue**	31-Mar	8:30-9:20 am	Bovine transrectal palpation II	**Groups A7-A9**	LARF
			9:30-10:20 am	Bovine transrectal palpation II	**Groups C7-C9**	LARF
	Wed	1-Apr	8:30-10:20 am	Mare BSE	**Groups B1-B4**	LARF
	Fri	3-Apr	8:30-10:20 am	Mare BSE	**Groups C5-C7**	LARF
12	**Tue**	7-Apr	8:30-9:20 am	Bovine transrectal palpation II	**Groups B7-B8**	LARF
	Thur	9-Apr	8:30-10:20 am	Mare BSE	**Groups A5-A8**	LARF
13	**Tue**	14-Apr	8:30-10:20 am	Mare BSE	**Groups A9+C8-C9**	LARF
	Thur	16-Apr	8:30-10:20 am	Mare BSE	**Groups B5-B8**	LARF
14	**Tue**	21-Apr	8:30-10:20 am	Small Animal Reproduction	**Group A**	Charter Hall Lab
	Thur	23-Apr	8:30-10:20 am	Small Animal Reproduction	**Group C**	Charter Hall Lab
15	**Tue**	28-Apr	8:30-10:20 am	Small Animal Reproduction	**Group B**	Charter Hall Lab

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

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**
7 pre-lab quizzes	7%
Quiz 1	16%
Quiz 2	16%
Midterm	16%
Final cumulative exam	45%

• Quiz and exam material will come from lectures and in class/wet lab discussions. Questions will be asked in multiple choice format. Class attendance is expected.

• There will be 7 pre-lab quizzes worth 7% of the total grade (each pre-lab quiz worth 1%).

The clinical skills taught in this course are part of the Term 6 OSCE.

XIV. Recommended study strategies

Pre-reading lecture material and class attendance will go a long way to help understanding the material. Understanding the material, rather than parrot-fashion learning, is encouraged, as is making comparisons of similar conditions between different species. Active participation in discussions and clicker questions during the lectures is highly recommended.

XV. Instructor's expectations of the student

The student is expected to come prepared for lectures and lab sessions by having read the lecture slides and lab worksheets or any additional information posted on SAKAI. Active participation is highly encouraged.

XVI. Professionalism statement

Please exhibit professional behavior in class. Students are expected to **arrive on time** for lectures, wet labs and exams. **The use of mobile phones is not allowed** during class and exams.

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

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

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

Laboratory session attendance policy: Attendance of **all** wet labs is **mandatory**. If you are unable to make a lab, please email the course director (Dr. Firdous Khan: email fkhan8@sgu.edu) and organize to make up the lab. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. Greater than 1 unexcused absence will result in failure of the course. If an extended absence is required, a leave of absence form

from the Dean of Students office must be submitted.

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. 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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam

or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

*No other personal belongings will be permitted.

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.

LAMS 533

Dr. Nicki Wise

Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Communication Labs	**Communication Exercises** See details below and posted in sakai. *ONLY FOR STUDENTS WHO DID NOT COMPLETE COMM LABS!* **Groups 2, 4, 6, 8, 10**	ANYTIME	Exercise 1 – Sakai assignments Exercise 2- Sakai Tests and Quizzes BOTH: Open March 23rd **Due May 1st**
Financial Aid for Clinical Yr Lectures: 1. CY Financial Aid 2. Loan repayment with DWQ	Financial Aid for Clinical Yr Panopto Lecture 1. 4th Yr Financial Aid 2. Loan repayment with DWQ – **OPTIONAL** *Zoom* Session	April 6-10 for lecture April 16th ZOOM session – **Time TBD**	N/A
Mindset Giving & Receiving Feedback Lectures: 1. Mindset 2. Feedback	Mindset Giving & Receiving Feedback Lectures via Panopto: 1. Feedback 2. TEd Talk – see sakai & below for details	April 13-17	Reflective journal mindset and feedback Sakai Assignments Open April 6 **Due May 1**
Wellness Lecture: 1. Wellness Check In	Wellness 1. TEd Talk – see sakai assignments for details		Wellness Worksheet Sakai Assignments Open April 10th **Due April 19th**

Liability and Veterinary Malpractice Lectures: 1. AVMA PLIT Lecture	Liability and Veterinary Malpractice Lectures: 1. Remote AVMA PLIT Lecture	TBD	N/A
Total lectures: 5	Total remote lectures/videos: 5 + optional zoom session		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = No points, P/F course based on attendance and assignment submission *Total points breakdown:* n/a	Total points = P/F course based on assignment submission *Total points breakdown:* n/a

Learning outcomes: please list any CLO or LLO's which were omitted below:

*Groups 2, 4, 6, 8 & 10 were unable to participate in the client communication simulations. A remote exercise was conducted but is not a perfect substitute for practicing those skills.

Assignment Details:

Communication Lab Exercises

Are you on this list? If so, you need to complete this exercise. If not, please complete your self-assessment on sakai from your comm lab

Group 2	Group 4	Group 6	Group 8	Group 10
Samantha Kause	Alexa Crise	Mariana Reyes	Chaneille Malcolm	Maria Barandica
Carley Jones	Teresa Monroe	Sophia Sullivan	Jennifer Davis	Ashley Schimschock
Catilin Mahoney	Kaitlynn Samborsky	Kathryn Peters	Margie Garza	Bumgyun Miga Choi
Samantha Guzman	Alexus Counce Hooker	Andrew Mordasky	Daniel York	Danielle Raiano
Eloisia Seligson	Katherine Murray	Tiffany McElroy	Lisa Drayer	Kaylene Passione
Kiersten Campbell	Genesis Feliz	Kari Schultz	Marissa Connell	Alicia Royer
Kailah Buchanan	Jacquelyn Garcia	Jaclyn Gremley	Meghan Jeffcoat	Katelyn Thille
Katharine Jones	Michael Gonzalez	Kelly Larabee	Rebecca Risteen	Bryan Hatton
Sibel Catto	Heather Brown	Melissa McNabb	Michael Cali	Colleen McCarthy
Alexis Garbarino	Fredrick Adams	Peggy Chang	Morgan Magelinski	Elizabeth Bohannon
Sloane Hoffman				

Exercise 1:
Watch these two videos
https://www.youtube.com/watch?v=1Evwgu369Jw&t=8s

https://www.youtube.com/watch?v=-4EDhdAHrOg

Answer the associated questions under “Assignments” in Sakai

Exercise 2: Watch this video:
https://wsu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=3c598907-6dfe-46ec-8fc8-ab3e002faf8a

On sakai, under “Tests and Quizzes”, complete the assessment “Rocket the Colic”

Mindset & Feedback – Reflection

Watch the Panopto feedback lecture AND this video:
https://www.youtube.com/watch?v=0tqq66zwa7g

In sakai assignments, write a short reflective piece (250 words) on a time that you received feedback and whether you received it with a fixed or growth mindset. How will you take this knowledge into clinical year where you will be receiving lots of feedback?

Please complete ALL assignments by MAY 1st, 2020.

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
***Professional Veterinary Development* (2 credits)**
LAMS 533 TERM 6
Spring 2020

I. Course Director

Nicki Wise DVM, PhD, DACVIM
Email: lwise1@sgu.edu
Off island this term but email anytime!

Other faculty/lecturers:

Joanne Buckland
Email: jbuckland@sgu.edu

Heather Douglas DVM, MBA
Email: doctordouglas@douglasanimalhospital.com

Karen Warnette DVM – AVMA PLIT
Email: karen.warnette@avmaplit.com

Diane Beltrani -- Director Financial Aid SGU
Email: dbeltrani@sgu.edu

Adria Rodriguez DVM
Email: airodriguez@sgu.edu

II. Course location: Variable, see schedule for details

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 goals:

- To re-emphasize the professionalism attributes and concepts the AVMA has termed "non-technical competencies"
- To develop a skill set revolving around client communication, emotional intelligence, and giving and receiving feedback effectively
- To provide information essential to all veterinarians before entering their 4th year and career including malpractice and liability
- To relay information related to personal finance, investments, student loan management and budget preparation
- To develop a skill set related to business management in veterinary practice

X. 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

XI. Alignment of course level outcomes with program level outcomes: See Appendix XXI

XII. 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:

- Create a resume and cover letter
- Negotiate salaries
- Develop SMART goals (Specific, Measurable, Attainable, Realistic, Time-Based)
- Create a business plan
- Create a mission, vision, and value statement
- How to establish fees and understand the basic finances behind running a practice
- Understand the veterinarian's role in management
- Develop a marketing plan
- Develop hospital regulatory plans for OSHA, DEA, Hazardous Waste, and Radiology
- Develop a hiring strategy
- Practice interviewing skills

Other Lectures:

- Understand ethical and legal implications facing veterinarians
- Prepare for their 4th clinical year including rotation and externship selection, the NAVLE and accreditation procedures

- Review aspects of personal financial literacy including loan repayment and budgeting
- Understand how to prepare for job interviews and other professional interactions
- Review the concept of effective feedback and review guidelines for giving and receiving it
- Discuss the issues surrounding well-being amongst veterinarians and how to manage these issues

XIII. Alignment of Course Learning Objectives with Program Learning Objectives/Competencies:

See Appendix XXI

XIV. 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.

XIV. Assignments, grading and assessment policy

The course will consist of a mix of lectures, interactive workshops and rotations.

This course is graded pass/fail based on **attendance and assignments.**

Assignments: Students must submit assignments on time in order to pass the course.

1. **Business Assignment**: Students will incorporate the course learning objectives through in-class group work to produce a veterinary business binder that will serve as a reference point for transactions as a veterinary business professional, whether as a business owner or associate. Dr. Heather Douglas will provide details in class and give you the due date.

2. **Communication Rotations and Assignments**: This term, you will attend 2 communication rotations as part of your afternoon rotation schedule.
    - These sessions will be held on Friday afternoons (see schedule under resources for details) in St. Andrews Hall (Attic Space, closest to the sea, follow the signs for SVM Communication Lab).
    - For each session, your group will attend EITHER the 130-320p or the 330-520p segments. You will work in pairs for the simulations.
    - You will be guided through these communication simulations by a faculty member.
    - Each student should attempt to 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).
    - You are responsible for **recording** your own interview. You can use your OWN mobile device OR you can use the video camera in the lab. If you choose the latter, bring your

laptop to download the videos afterward to your computer. These recordings are for your use only – no need to share them.

- **ASSIGNMENTS**: AFTER the session, you are responsible for performing a self-assessment of EACH of your interviews (after watching the recordings). These assessments are posted on Sakai under "Tests and Quizzes". These assessments are due within **2 weeks of your rotation date**.

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

XVI. Recommended study strategies: Not applicable

XVII. Professionalism statement:
Please exhibit professional behavior at all times. Turn cell phones off or silence them during lectures.

XVIII. Attendance policy: ***Attendance*** **is mandatory for all Term 6 students** and participation is expected.

Students are allowed **2 unexcused absences**. These absences are NOT allowed for the communication rotations. Failure to attend your rotation without an excuse will result in course failure. Three or more unexcused absences in other lectures and workshops **will** result in course failure as will failure to submit a required assignment. Students are also expected to be on time! Arriving after attendance has been taken, or leaving before the end of class will count as an absence. Any student unable to adhere to the attendance policies of this course is mandated to complete the online "Medical Excuse Submission" form PRIOR to missing the required activity. Failure to complete the "Medical Excuse Submission" form will result in an unexcused absence.

XIX. Policy regarding missing exams or failure to submit assignments: Failure to submit the 2 assignments will result in course failure.

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

XXI. APPENDIX: PLO, CLO, LLO Mapping:

Mapping CLOs to PLOs and 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 4th 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

SVM Course Code: LAMS 537
Course Director: Karasek
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Clinical Skills Covered:	*Revised Clinical Skills:	Weekly/rotation schedule:	Assessment Schedule:
Ophthalmology lecture and hands-on laboratory Skills: 1. Each pair of students performed a diagnostic test of their choosing 2. Each pair of students accurately demonstrated the appropriate ophthalmic nerve block for examination of the equine eye	Ophthalmology Skills: 1. Observe technique for correct diagnostic testing and ocular blocks 2. Digitally image an animal eye (fundus) using a Smartphone 3. Understand the information provided re. ophthalmology in equine ambulatory practice	March 23-27	-Watch online video demonstrating diagnostic testing and nerve blocks. -Read PDF article in resources: "Ophthalmology in Equine Ambulatory Practice" -Read Fundus photography with a Smartphone -Complete Sakai MCQ on video & PDF entitled: "Ophthalmology Quiz" -Submit via email digital image of animal eye's fundus (dog, cat, horse) Open date: March 23rd Due date: March 30th [5 points]
Equine Rescue Session & Disaster Preparedness Skills: 1. Participate in a simulated evacuation of equines and large animals from a natural disaster 2. Formulate a hurricane plan for the LARF herd	Equine Rescue Session & Disaster Preparedness Skills: 1. Formulate a hurricane plan for the LARF herd 2. Identify 3 weaknesses on the LARF that might pose a danger during a storm.	March 30-April 3	- Read the three PDF's entitled: "Disaster Preparedness for Horses" "Equine Emergency Preparedness in Virginia" "Hurricane planning for horse farms". -Complete "Hurricane plan for SGU LARF herd" Assignment on Sakai Open date: March 30th Due date: April 6th [5 Points]

Mare and Stallion BSE Skills: 1. Each student to understand the correct sequence of steps for a mare BSE 2. Each student to be able to complete a basic stallion BSE	Pregnancy diagnosis in the mare and estimating gestational age of the foal Skills: 1. Identify US findings of a pregnant mare 2. Understand the principles of aging a fetus 3. Have a basic understanding of trans-abdominal ultrasound for pregnancy diagnosis.	April 6-10	-Watch online video of rectal and transabdominal ultrasound of a pregnant mare -Read the article in the Pregnancy diagnosis and gestational aging folder -Complete Sakai Quiz on video & PDF "Pregnancy diagnosis and gestational aging" Open date: April 6th Due date: April 13th [5 Points]
Dentistry lecture and hand floating Skills: 1. Each student demonstrated correct use of a hand-float 2. Each pair of students completed a dental form for the patient	Dentistry Skills: 1. Document dental findings on dental form provided 2. Calculate appropriate sedation dose for the patient 3. Age the patient based on images of teeth	April 13-17	-Watch online video of dental float -Using the resources on Sakai (Dentistry folder) and the video complete Dental Assignment on Sakai (dental form based on video and provided info) (5 points) *-Note there is also an Equine Dentistry Quiz on Sakai (5 points)* Open date: April 13th Due date: April 20th [10 Points]
Colic case with hands-on palpation/NGT/abdominocentesis SIM lab Skills: 1. Each student calculated dosages for a colic patient 2. Each student calculated fluid rate for a colic patient 3. Each student performed a rectal palpation of the SIM model to diagnose the colic	Colic case Skills: 1. Each student calculated dosages for a colic patient 2. Each student calculated fluid rate for a colic patient	April 20-24	-Review the resources on Sakai (Colic folder) and the videos of the clinical skills in the SIM lab. -Complete Colic Assignment on Sakai (5 points) *-Note there is also an Equine Colic Quiz on Sakai (5 points)* Open date: April 20th Due date: April 27th [10 Points]

4. Each student performed an abdominocentesis on the SIM model			
Podiatry class Skills: 1. Review correct hoof anatomy and common conformational issues 2. Recognize a balanced foot/correct trim	Podiatry class 1. Review correct hoof anatomy and common conformational issues 2. Recognize a balanced foot/correct trim	April 27-May 1	-Watch online video of hoof trim and glue-on shoe placement -Using the resources on Sakai (Podiatry folder) and the video complete Podiatry Assignment on Sakai Open date: April 27th Due date: May 4th [5 Points] Final Exam due May 8th (20 pts)
Total lab hours: 12	Total hours: 12 Total optional zoom sessions:1		Total hours of student commitment: 12

Assessment Summary:

Original Percentage Allocation:	Revised Percentage Allocation
Original percentage breakdown: Class participation 10 Journal Article Review 10 3 Sakai Pre-lab quizzes 15 Equine Medical Forms 20 Final Comprehensive Exam 45	*Revised percentage breakdown:* Class participation 5 Journal Article Review 10 3 Sakai Pre-lab quizzes 15 Equine Medical Forms 20 Final Comprehensive Exam 20 6 Sakai Assignments 30

Learning outcomes: please list any clinical skills which were omitted below:

1. Each pair of students performed a diagnostic test of their choosing
2. Each pair of students accurately demonstrated the appropriate ophthalmic nerve block for examination of the equine eye
3. Participate in a simulated evacuation of equines and large animals from a natural disaster
4. Each student to be able to complete a basic stallion BSE
5. Each student demonstrated correct use of a hand-float
6. Each student performed a rectal palpation of the SIM model to diagnose the colic
7. Each student performed an abdominocentesis on the SIM model

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
Large Animal Medicine and Surgery
***Special Topics in Equine Practice* (1 credit)**
LAMS 537 TERM 6
Spring 2020

I. Course Director: Inga Karasek, BSc. DVM, Assistant Professor
Email: ikarasek1@sgu.edu
Phone ext. 3829
Office Location: LARF office block (behind the SAC)
Office Hours: by appointment

Other participating faculty contact information can be found in the directory.

II. Course location: LARF, unless otherwise notified.

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 slides /articles (on Sakai-Resources) and discussions that occur during the lectures.
2) **Large Animal Internal Medicine**, Bradford P. Smith, 5th edition
3) Material covered in previous courses (example: anatomy, physiology, LAMS 501, 502, 503, 516, and 519)

V. Recommended resources: Supplemental reading for specific equine diseases may come from Equine Internal Medicine, Reed, Bayly, & Sellon, 4th edition, Diagnosis and Management of Lameness in the Horse, Ross & Dyson, 2nd edition or newer. LAMS 516-Large Animal Surgery notes/lecture material. Equine Surgery Auer and Stick, 3rd edition or newer.

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

VII. Other requirements: It is important to come to this selective dressed appropriately. A complete set of scrubs or coveralls and rubber boots are appropriate attire for the **LARF**. If a session is to take place in the **SIM lab**, a complete pair of scrubs and closed-toed shoes are the required attire.

VIII. Course rationale: This course is a selective course in the veterinary curriculum. It was designed to give those students with an interest in equine medicine more hands-on experience and further didactic material before fourth year clinical rotations.

IX. Course goals:

- To prepare the students for their equine based clinical rotations
- To help the students develop clinical problem-solving skills with commonly seen equine disorders
- To learn how to select appropriate diagnostic tests, focusing on imaging and palpation skills
- To reinforce continuing education and research appreciation
- To become familiar with commonly performed procedures in equine general practice

X. Course-level outcomes:

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

1. Understand and demonstrate the common lameness tests; palpation, provocative tests, hoof testers and perineural anesthesia
2. Use presenting complaint, history, physical exam findings, and clinical signs to create differential lists and choose appropriate diagnostic tests in the equine patient
3. Be familiar with how to perform a dental floatation, digital radiographs, and basic distal limb ultrasound
4. Perform appropriate stabilization techniques for fracture management
5. Be able to perform basic colic, neurological, ophthalmological, dermatological and BSE examinations
6. Understand the theory and use of complementary therapies
7. Appreciate normal/abnormal equine behaviour and low stress training techniques
8. Become familiar with management of large animals in a natural disaster

XI. Alignment of Course Learning Outcomes with Program Level Outcomes:

See Table 1 at the end of the syllabus.

XII. Lesson and Laboratory level outcomes:

See Table 2 at the end of the syllabus.

XIII. Course Schedule

Changes in this schedule may occur at the course director's discretion, students will be notified at the earliest convenience. See schedule below.

Lecture/Lab #1 Jan 13th -1:30 pm	Equine Behaviour & Welfare and Low stress training techniques
Lecture/Lab #2 Jan 17th -3:30 pm	Equine PE and annual vaccinations
Lecture/Lab #3 Jan 20th -1:30 pm	Acupuncture lecture and hands-on demonstration/practice
Lecture/Lab #4 Jan 24th -10:30 am	Lameness videos, common forelimb and hindlimb causes of lameness, with hands-on full body palpation and flexion tests.
Lecture/Lab #5 Jan 27th -1:30 pm	Equine dermatology lecture and hands-on techniques (skin scraping, brushing, biopsy techniques)
Lecture/Lab #6 Feb 3rd -1:30 pm	Lameness case-carpal disease with hands-on radiographs
Lecture/Lab #7 Feb 10th -1:30 pm	Neurological examination in horses and hands-on practice
Lecture/Lab #8 Feb 14th -10:30 am	Initial fracture stabilization in the field with hands-on splinting/bandaging exercise in the **SIM lab**
Lecture/Lab #9 Feb 24th -2:30 pm	Equine Parasitology
Lecture/Lab #10	

Mar 13th -10:30 am	Ophthalmology lecture and hands-on laboratory (naso-lacrimal flushing, ocular blocks, etc.)
Lecture/Lab #11 Mar 19th -10:30 am	Podiatry/farrier class
Lecture/Lab #12 Mar 27th -10:30 am	Mare and Stallion (Jack) BSE
Lecture/Lab #13 Apr 3rd -10:30 am	Dentistry lecture and hand floating
Lecture/Lab #14 Apr 17th -10:30 am	Colic case in the **SIM lab**
Lecture/Lab # 15 Apr 21st -8:30 am	Equine Rescue in the Field & Disaster Preparedness
Final Exam Apr 24th -1:30 pm	St. John's Hall

XIV. Grading and assessment policy, and grading rubrics

Examinations: There will be 1 exam for this course, a comprehensive final exam, worth 45% of the final grade in the course. Exam material will come from required readings, lectures and in class discussions. Details regarding the format for each exam will be provided by the course director. The exam date and time are listed below, and on the lecture schedule posted on Sakai. Any deviation from the schedule will be announced on Sakai and during class:

- Final Comprehensive Exam (45% of grade) –April 24th at 1:30 pm in a location TBA.

  45 MCQs on Exam Soft

- Class participation – (10 % of grade)
- Journal article review – (10% of the grade)-details in addendum
- 3 Pre-lab Sakai quizzes each worth 5% of the grade (15%)
- Equine medical forms (20 % of the grade) Due on or before April 17th at 10:30 am.
    - Please submit 2 specific equine forms each worth 10 % of the grade (Could be Vaccination/PE, dentistry, neurology, dermatology, BSE, OR acupuncture case reports/forms)
- **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 Exam Soft.

Grading Policy: The final grade for this course reflects the exam scores. Below is the grading scale for this course:

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

XV. E-value use for outcomes assessment evaluation: Not applicable currently**.**

XVI. Recommended study strategies: Review available resources provided after each class. Assigned readings will be given.

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

XVIII. Professionalism statement:

Please always exhibit professional behavior. Turn cell phones off or silence them during lectures. Please arrive on time. Notify faculty of medical or other excuses.

XIX. Attendance policy: Attendance to sessions is mandatory and participation is expected. Please consult the SVM Dean of Students office for additional information regarding acceptable excuses.

XX. Policy regarding missing examinations and/or failure of submission of assignments: A grade of 0 will be given unless a valid medical excuse or LOA has been submitted.

XXI. Exam Soft Policy: You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. Exam Soft can track testing behaviors, i.e. testing time, testing location, and any deviations from the honor code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honor Code in the student handbook. If you have a computer problem, go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam. You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in Exam Soft, so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email after to ensure that your answer file has been uploaded.

XXII. 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.

Table 1.

Course Level Outcome#	**SGU SVM Program Learning Outcome**
	A. Core Medical Knowledge
1	PLO 01 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.
2, 3, 5	PLO 02 Analyze homeostasis and disturbances of basic structures and functions of healthy animals.

2	PLO 03 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations.
3,5, 6	PLO 06 Apply multidisciplinary scientific knowledge to clinical situations and understand evidence-based veterinary medicine.
7	PLO 07 Evaluate and analyze normal versus abnormal animal behavior.
7	PLO 08 Apply principles of animal welfare and articulate relevant legislation, including notifiable diseases.
	B. Core Professional Attributes
8	PLO 12 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.
8	PLO 14 Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team.
	C. Core Clinical Competencies (Skills)
1,2	PLO 20 Execute a comprehensive patient diagnostic plan (differential diagnosis list) and demonstrate problem solving skills to arrive at a diagnosis.
1	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare.
4,5	PLO 25 Analyze, design and execute appropriate plans for emergency and critical care case management.

Table 2.

Lecture/ Lab	Description of Outcomes
1	Equine Behaviour & Welfare and Low stress training techniques • Demonstrate a positive reinforcement training technique • Demonstrate a negative reinforcement training technique
2	Equine PE and annual vaccinations • Each group of 3 performs a complete PE • Each student gives one IM vaccine • Each student group hands in a completed PE and immunization form
3	Acupuncture lecture and hands-on demonstration/practice • Each pair of students completed an Eastern history • Each pair examined the animal; pulse, tongue, temperature and body scan • Each pair of students completed an Eastern medicine acupuncture form • Each student to place a minimum of one needle
4	Lameness videos, common forelimb and hind limb causes of lameness, with hands-on full body palpation and flexion tests • Dynamic lameness's interpreted • Each pair of students demonstrated complete full body examination • Each pair demonstrated one flexion test to the class
5	Equine dermatology lecture and hands-on techniques (tape test, skin scrapes) • Each pair of students obtained a history pertaining to a dermatological lesion • Each pair of students performed a diagnostic test of their choosing • Each pair of students completed a dermatological form for the patient
6	Lameness case-carpal disease with hands-on radiographs • Equine carpal anatomy reviewed • Correct positioning of the patient for imaging demonstrated • Diagnostic carpal radiographs obtained
7	Neurological examination in horses and hands-on practice • Each pair of students demonstrated a complete cranial nerve exam • Each pair of students completed a neurological form for the patient • Each pair of students performed a diagnostic neurological test of their choosing

8	Initial fracture stabilization in the field with hands-on splinting/bandaging exercise in the SIM lab • Each team of 4 students correctly stabilized the fracture they were given Each student demonstrated the correct placement of a jugular catheter in the SIM model
9	Lecture on current parasitology control options in horses • Each student able to identify anthelmintics that continue to work • Each student able to describe two other means of controlling parasite levels in pasture
10	Ophthalmology lecture and hands-on laboratory (nasolacrimal flushing, ocular blocks, etc.) • Each pair of students performed a diagnostic test of their choosing • Each pair of students accurately demonstrated the appropriate ophthalmic nerve block for examination of an equine eye
11	Podiatry/farrier class • Review correct hoof anatomy and common conformational issues • Recognize a balanced foot/correct trim
12	Mare and Stallion BSE • Each student to be understand the correct sequence of steps for a mare BSE • Each student to be able to complete a basic stallion BSE
13	Dentistry lecture and hand floating • Each student demonstrated correct use of a hand-float • Each pair of students completed a dental form for the patient
14	Colic cases with hands-on palpation/NGT/abdominocentesis SIM lab • Each student calculated dosages for a colic patient • Each student calculated a fluid rate for a colic patient • Each student performed a rectal palpation of the SIM model to diagnose the colic • Each student performed an abdominocentesis on the SIM model
15	Equine Rescue Session & Disaster Preparedness • Participate in a simulated evacuation of equines and large animals from natural disaster • Formulate a hurricane plan for the LARF herd

Addendum

Journal Article Review-

No more than 3 paragraphs summarizing a recent peer-reviewed journal article (2008-2020) on one of the following topics:

- Acupuncture use in horses-
  E.g. for lameness, anhidrosis, back soreness
- Equine colic-
  E.g. case reports, survivability post- surgery, affect of age on prognosis
- Apical infections/common dental problems in horses or donkeys
- Shoeing/trimming options for laminitic horses
- Vaccination protocols in the face of a viral outbreak (EEE, WNV, EHV-1 etc.)
- Treatment protocols in cases of natural disaster-e.g. wildfires

Due on April 3rd, 5 pm. This can be submitted as a printed hardcopy to my office (no hand-written reviews accepted) or electronically via Word/PDF document attachment to ikarasek1@sgu.edu. The article title, journal name, volume and issue number as well as the date published & author(s) name to be given.

Rubric

Recent Article (2008-2020)	2 pt.
Peer-reviewed journal (JAVMA, Equine Veterinary Journal, Veterinary Clinics of North America, Equine Veterinary Education etc.)	2 pt.
Relevance to topics given	2 pt.
Concise and accurate review	2 pt.
Discussion of importance to equine veterinary medicine	2 pt.

SVM Course Code: ___LAMS 539____
Course Director: ____Dr. Stacey Byers and Dr. Kerri Nigito____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**
Assessments and Forums will be available by 8:00am AST Monday of each week, if not sooner

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Production Animal Medicine and Surgery Lectures: 1. Beef Production Discussion Seminar 2. Case Presentation preparation	Production Animal Medicine and Surgery 1. LIVE Zoom Session Case Preparation and Forums 2. Beef Production Discussion Session via Forums on Sakai 3. Case presentation topics will be assigned to individual students via Sakai	March 23-29	LIVE Zoom Session March 25th @ 11:30am AST Please Post a 250-300 word response to assigned discussion topic in the assigned forum Due: 11:00pm AST March 29th [4pts]
Production Animal Medicine and Surgery Lectures: 3. Beef Production Discussion Seminar 4. Case Presentation preparation	Production Animal Medicine and Surgery 4. Beef Production Discussion Session via Forums on Sakai 5. Case Presentation and Preparation Continued	March 30-April 5	Post two 150-200 word responses to classmates original responses in your assigned topic forum Due: April 5th 11:00pm AST [4pts]
Production Animal Medicine and Surgery Lectures: 1. _Head wet lab_ 2. Case presentation preparation	Production Animal Medicine and Surgery Wet lab 1. Review resources in the form of videos and literature provided on Sakai	April 6-12	Short Answer Sakai quiz Due 11:00pm AST April 12) [12 Points]

Case Presentation	Case Presentation	April 13-19	Record a 10-minute presentation on Panopto and upload it into the designated assignment folder in Sakai Due 11:00pm AST April 19th [40 Points]
Case Presentation	Case Presentation	April 20-26	Peer review classmates presentation in your assigned group on Sakai (3 peer reviews) using the provided rubric Due 11:00pm AST April 26th) [16 Points]
Total lab hours: 4	Total hours: 4		Total hours of student commitment: 8

Resources will be made available for your own personal review of ultrasound techniques and bee husbandry and production in the "Resources" folder in Sakai.

Please refer to the "Lessons" tab in Sakai in order to get a week by week overview of assignments and deliverables in the course

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _100__ *Total points breakdown:* Anesthesia wetlab: 8pts Suture Wetlab: 8pts Dairy Discussion Session: 8pts Beef Discussion Session: 8pts Limbs wet lab: 8pts Ophthalmic wetlab: 8pts Ultrasound wetlab: 8pts Final Case presentation: 44pts	Total points = _100__ *Total points breakdown:* Anesthesia wetlab: 8pts Suture Wetlab: 8pts Dairy Discussion Session: 8pts Beef Discussion Session (Forum): 8pts Ophthalmic lab quiz (sakai): 12pts Final Case presentation: 40pts Peer Review: 16pts

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Demonstrate and identify the major organs typically examined on thoracic and transabdominal ultrasound.
2. Explain what abnormal findings would look like.
3. Explain the procedure and locations for performing a liver biopsy, abdominocentesis, and rumenocentesis
4. Demonstrate how to perform a third eyelid flap and amputation.
5. Demonstrate how to perform an enucleation

LAMS 540

Dr. Catherine Werners-Butler

Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
[Introduction to Animal Nutrition] Lectures: 1. Introduction to animal nutrition 2. Introduction to animal nutrient 3. Comparative anatomy of the G-I tract (the basics) 4. Animal nutrition digestion and absorption	[Introduction to Animal Nutrition] Lectures via Panopto: 1. Introduction to animal nutrition and nutrients 2. Comparative anatomy of the G-I tract (the basics) 3. Comparative anatomy of the G-I tract (continued)	March 30-April 5	Assessment on Sakai Tests & Quizzes Open March 30th Due April 12th [25 % of grade 10 points]
[Introduction to Small Animal Nutrition] Lectures: 1. Introduction to Small Animal Nutrition 2. Energy and nutrient requirements for dogs and cats	[Introduction to Small Animal Nutrition] Lectures via Panopto: 1. Introduction to Small Animal Nutrition 2. Energy and nutrient requirements for dogs and cats	April 6-12th	Assessment on Sakai Tests & Quizzes Open April 12th Due April 19th [20 % of grade 8 points]

[Introduction to pet foods] Lectures: 1. Introduction to pet foods 2. Alternative diets 3. Home made diets	[Introduction to pet foods] Lectures via Panopto: 1. Introduction to pet foods 2. Alternative diets 3. Home made diets	April 13-19th	Assessment on Sakai Tests & Quizzes Open April 19th Due April 27th [25% of grade 10 points]
[Feeding healthy dogs and cats] Lectures: 1. Feeding healthy dogs 2. Feeding large breed puppies 3. Feeding healthy cats 4. Fiber in canine and feline nutrition	[Feeding healthy dogs and cats] Lectures: 1. Feeding healthy dogs 2. Feeding large breed puppies 3. Feeding healthy cats 4. Fiber in canine and feline nutrition	April 20-24th	Assessment on Sakai Tests & Quizzes Open April 27th Due May 4th [30% of grade 12 points]
Total lectures: 13 Total labs: 1	Total lectures (Panopto): 12 Total labs: 0		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _100__ *Total points breakdown:* Participation nutrition lab: 20 Final exam: 80	Total "points" = 40___ *Total points breakdown:* Assessment 1: (25 %) 10 points Assessment 2: (20 %) 8 points Assessment 3: (25 %) 10 points Assessment 4: (30 %) 12 points

Learning outcomes: please list any CLO or LLO's which were omitted below:

Nutrition Lab

Be familiar with pet food label information, know how to find it and know how to interpret that information

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE

Large Animal Medicine and Surgery Department

Basic Small Animal Nutrition (1 credit)

LAMS 540 Term 1

Spring 2020

I. Course Faculty and Staff information

Course director:
Dr. Catherine Werners-Butler Professor DVM, PhD, MRCVS, Dipl. ECEIM
Email: cwerners@sgu.edu
Office: Cassia building 2nd floor ext 3831

Visiting Professor:
Dr. Cecilia Villaverde BVSc, PhD, DACVN, DECVCN
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

Lectures at David Brown Hall
Lab at Charter Hall (lab section)
Exam venues: please check for updates on the SVM calendar

III. Prerequisite and/or co-requisite courses

Admission into the SVM program. Current registered Term 1 SVM student

IV. Required resources

The required reading for each section will collectively come from lecture slides /articles (on Sakai Resources) / homework assignments and discussions that occur during the lectures. The link to Panopto will be provided once available.

V. Recommended resources

Supplemental reading for animal nutrition will be posted on SAKAI that students are required to read

VI. Special accommodation

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

VII. Other requirements

For the nutrition lab: please make sure you take your white coat to lab and wear closed toe shoes

VIII. Course rationale (catalogue course description)

LAMS 540 is a multi-disciplinary course that builds on knowledge learnt from previous courses including biology, chemistry, biochemistry, physiology, and anatomy. After you have completed this course, you will have basic knowledge about how animals obtain, process and use feed and nutrients. Confining ourselves to small animals in Term 1, we then, in the later terms, look at other groups of animals (domestic, ruminants or simple-stomached), we will discuss feed prehension methods, digestion and how this affects the types of nutrients which animals absorb into their bodies, nutrient requirements and how these are influenced by activity or production type of species and the environment, and how to asses feeds nutritional content via feed labels and choose diets so that it is safer, palatable and nutritious to the animal based on their individual requirements.

This course is structured to provide coverage of the fundamental aspects of composition of small animal feeds and the constituents of feed that supply nutrients to the animal. The practical/lab component of this course will help you to provide hands on skills and apply nutritional information into feeding the different species of companion animals. 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.

IX. Course-level outcomes

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

- Understand the basic concepts of animal nutrition
- Understand what the components of feed for small animals are, their mode of absorption and their effect on health, reproduction and performance
- Recognize each companion species has different nutritional requirements and some are species specific
- Interpret a traditional feed label
- Formulate an appropriate diet for individual animals or groups of animals based on thorough knowledge of the important feed components

X. Lesson-level outcomes: Updated learning lecture outcomes will be presented at the beginning of each lecture and posted on Sakai.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Updates provided by the Visiting Professor will be posted as soon as possible. Updated learning lecture outcomes will be presented by the Visiting Professor at the beginning of each lecture and posted on Sakai.

XII. Course Schedule

Date	Time	Lecture topic	Faculty
16/3	**1:30 – 2:20pm**	Introduction to the course	Dr Werners-Butler
18/3	**4:30 – 5:20pm**	Animal nutrition nutrients	Dr Werners-Butler
20/3	**3:30 – 4:20pm**	Animal nutrition comparative anatomy	Dr Werners-Butler
20/3	**4:30 – 5:20pm**	Animal nutrition comparative anatomy	Dr Werners-Butler
23/3	**4:30 – 5:20pm**	Small animal nutrition introduction	Dr Cecilia Villaverde
24/3	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
25/3	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
26/3	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
27/3	**2:30 – 4:20pm**	Small animal nutrition	Dr Cecilia Villaverde
30/3	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
31/3	**8:30 – 10:20am** **10:30 – 12:20**	Group A Nutrition Lab Group B Nutrition Lab	Dr Cecilia Villaverde
31/3	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
1/4	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
2/4	**4:30 – 5:20pm**	Small animal nutrition	Dr Cecilia Villaverde
3/4	**2:30 – 3:20pm**	Small animal nutrition	Dr Cecilia Villaverde

XIII. Grading and assessment policy, and grading rubrics

Examinations:

Your final grade will be made up of the following: Lab attendance and an in-lab assignment to hand in for grading, contributing to 20% of your final grade and a ***final exam*** contributing to 80% of the grade.

The exam material will come from lectures and in-class discussions. There will be approximately 3 questions from each lecture. The exam dates and times are listed below and on the lecture schedule posted on Sakai. Any deviation from the schedule will be announced on Sakai and during class:

- **Nutrition Lab (Check your group assignment posted on Sakai) Tuesday March 31st in Charter Hall lab. Make sure to arrive on time, appropriately dressed in scrubs / lab coat, and closed toed shoes**
- **Final Comprehensive Exam (80% of grade) Wednesday 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 watching videos posted on SAKAI. 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 read the required material before class, and ask question/s that will assist the student in understanding a concept. 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 policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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.

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. 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 SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
4. 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.
5. 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.

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. Students are permitted to download exams only in the examination venue and not in advance. The “start of the exam” is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees’ eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the “Congratulations! Your answer file(s) uploaded successfully,” screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.

17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action.
18. 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

    *No other personal belongings will be permitted.

XX. Copyright policy (if applicable):

Appendices:

None

SVM Course Code: _LAMS 541_____
Course Director: ___Dr. Kerri Nigito and Dr. Brian Butler_____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Professional Development I Lectures: 1. Personal Budgeting, Finance and Loans_ 2. Intro to EBVM and Research at SGU_	Professional Development I Lectures via Panopto: 1. Personal Budgeting, Finance and Loans 2. Intro to EBVM and Research at SGU Readings: 3. Approach to E-Learning in the Second Half of the Term: Tips & Techniques Part 1: 2 Tip sheets	March 23-29	For those students who will not meet with their Faculty mentor this term, please ONLY submit your wellness regimen on Sakai. **Due: April 15th, 5:00pm AST**
Professional Development I Lectures: 1. Approach to 2nd half of the term 2. Research Possibilities at SGU	Professional Development I Lectures via Panopto: 1. Research Possibilities at SGU Readings: 1. Approach to E-Learning in the Second Half of the Term: Tips & Techniques Part 2: 2 Tip Sheets	March 30-April 5	
Professional Development I Lectures: 1. Professional Etiquette and Class Code of Conduct 2. Research Methods	Professional Development I Lectures via Panopto: 1. Professional Etiquette and Class Code of Conduct 2. Research Methods	April 6-April 12	As a class use the google doc link provided to submit a list of professional and behavior guidelines to be upheld by your class which will be posted on your class's Facebook page Open: April 6, 8:00am AST **Due: April 19th, 11:00pm AST** Submit the in-class activity for the "Research Methods" Seminar in the Assignment folder for "Research Methods"

			Open: April 6th, 8:00am AST Due: April 13th, 11:00pm AST Participation Credit
Professional Development I Lectures: 3. Responsible Conduct of Research in Veterinary Medicine 4. Scientific Inquiry	Professional Development I Lectures via Panopto: 3. Responsible Conduct of Research in Veterinary Medicine 4. Scientific Inquiry	April 13-April 19	Post the in-class activity for the "Scientific Inquiry" in the Assignment folder for "Scientific Inquiry" Open: April 13th, 8:00am AST **Due: April 20th, 11:00pm AST** Participation Credit
Professional Development I Lectures: 5. Wellness Check-in	Professional Development I Lectures via Panopto: 5. Wellness Check-in	April 20-April 26	
Total lectures: 9	Total lectures (Panopto): 9		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _Pass/Fail__ *Total points breakdown:* Wellness Regimen Assignment Externship Experience Assignment	Total points = _Pass/Fail__ *Total points breakdown:* Wellness Regimen Assignment Externship Experience Assignment

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. _____
2. _____
3. Etc.

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE

Professional Development 1 (2 credits)
LAMS 541 - TERM 1
Spring 2020

I. Course Directors

Dr. Brian Butler, DVM, MPH, PhD, DACVP
Course Co-Director
Professor, Dept. of Pathobiology
Assistant Dean of Academics
bbutler@sgu.edu

Dr. Kerri Nigito, DVM
Course Co-Director
Instructor, Department of Large Animal Medicine and Surgery
nigker1@sgu.edu

Office hours by appointment. Please email anytime with questions or concerns.

Other lecturers/faculty:

Dr. Nicki Wise
Email: lwise1@sgu.edu

Dr. Austin Kirwan
Email: barnlodge@aol.com

Dr. Adria Rodriguez
Email: airodriguez@sgu.edu

Dr. Heidi Janicke
Email: hjanicke@sgu.edu

Dr. Heather Douglas

Email: doctordouglas@douglasanimalhospital.com

Dr. Anne Corrigan, MS, DVM, DACVIM
acorrigan@sgu.edu

Dr. Peter Slinger DES
pslinger@sgu.edu

Ms. Diane Beltrani Director
Financial Aid SGU
dbeltrani@sgu.edu

II. **Course location:** Varies, see schedule for details. Most seminars are held in David Brown Hall.

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

IV. **Required resources**: This course does not have required or recommended resources

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 course is the first of 6 courses within the curriculum focused on professional development. Through experiential learning methods including a 2-day workshop, students will be exposed to the concepts of non-technical attributes such as teamwork, communication, self and social awareness, and self-care that are vital to their success as a student and veterinarian. Specific coursework related to study skills, ethics, financial literacy and evidence based medicine is included. This course provides the foundation for their time at SGU; developing a sense of community within their class as they grow together into young professionals.

IX. Course goals: This course is the first of six courses that will be offered to the SVM students to enhance their development as veterinary professionals in the "non-technical" competencies. The purpose of this course (and those that follow) is to offer students the skills and knowledge necessary to be successful in 6 domains:

Domain 1. Personal development (Dr. Brian Butler)
Domain 2. Wellness (Dr. Adria Rodriguez)
Domain 3. Ethics and Animal Welfare (Dr. Austin Kirwan)
Domain 4. Communication (Dr. Nicki Wise)
Domain 5. Business and Financial Literacy (Dr. Heather Douglas)
Domain 6. Evidence Based Veterinary Medicine (Dr. Heidi Janicke)

X. Course learning outcomes: Upon completion of this course, students will be able to:

a. Discuss the fundamentals of the six domains of professional development
b. Recognize the professional attributes of a successful veterinarian including attitude, appearance, respect, responsibility, self-awareness and social awareness, tolerance, and self-management.

XI. Alignment of course level outcomes with program level 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.
Recognize the professional attributes of a successful veterinarian including attitude, appearance, respect, responsibility, self-awareness and social awareness, tolerance, and self-management	**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. Detailed course content: This course has two components: a two day Professional Attributes Workshop (PAWS) followed by a professionalism lecture series that encompasses all 6 domains.

PAWS: PAWS is a two-day program (*see schedule in sakai*) that is held during the first two days of class at the beginning of each term. The program stems from an international veterinary initiative known as the Veterinary Leadership Institute (VLI) that was first introduced by the AVMA in conjunction with Washington State University, College of Veterinary Medicine. The purpose of the VLE initiative is to incorporate non-technical competencies into the DVM curriculum. The VLE concept is based on the recognition that upon graduation, new veterinarians are technically competent, but may still be deficient in professional skills such as teamwork, communication, responsibility, empathy, integrity, conflict management, and servant leadership. For more information about the Veterinary Leadership Institute, please go to: http://veterinaryleadershipinstitute.org/

At the conclusion of the PAWS workshop, students will:

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.

Professionalism Seminar Series: The professionalism lectures (see schedule in sakai) are designed to reinforce the professional attributes that are introduced at PAWS and to acquaint them with additional concepts and practices necessary for appropriate professional development. Seminars are given by various experts at SGU and faculty members that are active participants in the course.

At the conclusion of the professionalism lecture series, students will:

Domain 1 -

1. Recognize the importance of externships and the role they play in advancing one's veterinary career.
2. Recognize the importance of mentorship, identify the characteristics of an effective mentor, and determine how to find an appropriate mentor for your career.
3. Recognize and discuss appropriate professional etiquette for interaction with faculty and potential employers.
4. Identify leaning strategies and study plans that will foster good time management and academic success.
5. Compose a "Class Code of Conduct" that is agreed upon and accepted by all students in the Term 1 class.
6. Recognize the importance of clinical communication for a successful career in veterinary medicine.

Domain 2 -

1. Discuss common mental health issues (depression, suicide, bullying) plaguing veterinarians and be equipped with the tools necessary to help themselves and others should the need arise.
2. Recognize the skills that are necessary to cope with stress and test anxiety through a variety of methods.
3. Identify the various student support networks at SGU and discuss ways to seek help when difficult situations arise.
4. Compose a self-care regimen for discussion in small group.

Domain 3-

1. Appreciate the concept of ethics and moral action.
2. Discuss the nature of the person and nonhuman animals.
3. Describe the philosophy behind discovering the truth and birth of the professions and how this relates to societal responsibility.
5. Discuss the dynamics of a team, components, hierarchy and servant leadership.
6. Recognize and apply professionally informed consent in the 5 step process.

Domain 5-

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.

Domain 6-

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.

XIII. Course Schedule

Changes in this schedule may occur at the course director's discretion, students will be notified at the earliest convenience. See schedules posted on sakai under resources.

XIV. Assignments, grading and assessment policy:

The course will be graded Pass/Fail. A grade of passing will be determined by successful completion of 2 assignments and **mandatory engagement (attendance of all sessions). No unexcused absences are allowed.** Any absences must be immediately addressed with the course directors. **Failure to attend mandatory meetings and lectures will result in course failure AND the student may be placed on non-academic probation by the CAPPS committee.**

Course Assignments:

1. **Externship Assignment**: Identify three potential Summer Externship opportunities that would be beneficial for your career goals. For each opportunity, include a 1-2 paragraph summary that highlights the type of mentors you would like to work with and the specific experiences that you would like to gain. Briefly describe how this opportunity will advance your career. Graded pass/fail based on a rubric encompassing the important components of the assignment. This assignment will be covered in more detail during the seminar "Your Veterinary Career" on February 13th. **The Due Date for this assignment is Sunday, March 15th at 11:59 pm**. Assignments must be uploaded as a **single PDF document** in My Courses (Sakai) before the due date expires.

2. Prof Dev Group Meeting/Self Care Regimen Assignment: Students meet with their assigned group and faculty mentor to discuss wellbeing in our profession and how to develop a regimen for self-care/wellness. Students will then submit their proposed self-care regimen encompassing emotional, spiritual, social and physical aspects to their faculty mentor. **The Due Date for this assignment will be determined by your assigned faculty mentor.**

A passing grade is determined by attending the mandatory meeting and completing the assignment. Due to the variability that will naturally be present in such an assignment, a rubric cannot be used. If the group interaction or assignment quality is inadequate and indicates the need for faculty intervention or remediation, this will be discussed with the course director to find an appropriate solution. Failure to meet these minimum standards will require one-on-one remediation with the course director and/or the faculty mentor before being allowed to progress to Term 2. Remediation will be tailored to the deficiency and the individual.

XV. Recommended study strategies:

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

XVI. Instructor's expectations of the student:

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

XVII. Professionalism statement:

Please exhibit professional behavior at all times. Turn cell phones off or silence them during lectures. Please be on time.

XVIII. Attendance policy

<u>Attendance is mandatory for all Term 1 students during the PAWS Workshop, all professionalism lectures and the professional group meetings</u>. One unexcused absence will result in course failure and the student may be placed on non-academic probation by the CAPPS committee. Attendance will be taken by sign-in sheet during every class. Students are also expected to be on time; arrival after attendance has been taken, or leaving before the end of class will count as an absence. Any student unable to adhere to the attendance policies of this course is mandated to complete the online "Medical Excuse Submission" form PRIOR to missing the required activity. Failure to complete the "Medical Excuse Submission" form will result in an unexcused absence.

XIX. Policy regarding failure to submit assignments: Failure to submit the required 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.**

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.

SVM Course Code: LAMS 542-Professional Development II (PD2)
Course Director: Dr. Adria I. Rodriguez, DVM, MSc, CVA, CVCH
Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	***Updated Course Format:**	**Weekly Learning Schedule:**	**Assessment Schedule**:
PD2- Communications/Wellness Lectures: 1. Initiating the Client Interview and Non-Verbal Communication 2. Identifying, Persuading, and Referring Someone at Risk of Suicide Communication Labs and Faculty Mentor Ethics Group Meetings Ongoing	PD 2- Communications/Wellness Lectures via Panopto: 1. NONE 2. NONE Communication Labs and Faculty Mentor Ethics Group Meetings (**FOR THOSE WHO HAVE NOT YET PARTICIPATED**) have been replaced by assignments in Sakai	March 23-29	(1) EBVM Sakai Assignment (All Students) Opened February 14/DUE April 22 [P/F] (2) Communications Sakai Assignment (Select Students) Opens March 23/DUE May 1 [P/F]
PD2-EVBM Lectures: 3. Literature Review and Reference Management	PD2-EVBM Lectures via Panopto: 3. Literature Review and Reference Management	March 30-April 5	(1) EBVM Sakai Assignment (All Students) Opened February 14/DUE April 22 [P/F] (2) Communications Sakai Assignment (Select Students) Opened March 23/ DUE May 1 [P/F] (3) Ethics Sakai Assignment (Select Students) Opened April 1/DUE April 12 [P/F]

PD2-EVBM Lectures: 4. Scientific Writing	PD2-EVBM Lectures via Panopto: 4. Scientific Writing	April 6-12	(1) EBVM Sakai Assignment (All Students) Opened February 14/DUE April 22 [P/F] (2) Communications Sakai Assignment (Select Students) Opened March 23/ DUE May 1 [P/F] (3) Ethics Sakai Assignment (Select Students) Opened April 1/DUE April 12 [P/F]
PD2-EVBM Lectures: 5. Presenting Research	PD2-EVBM Lectures via Panopto: 5. Presenting Research	April 13-19	(1) EBVM Sakai Assignment (All Students) Opened February 14/DUE April 22 [P/F] (2) Communications Sakai Assignment (Select Students) Opened March 23/ DUE May 1 [P/F]
PD2-Personal Leadership Lectures: 6. Navigating towards Internship and Residency 7. Non-Traditional Career Paths in Veterinary Medicine	PD2-Personal Leadership Lectures via Panopto: 6-7. NONE (Link to panels will be provided next term)	April 20-26	(2) Communications Sakai Assignment (Select Students) Opened March 23/DUE May 1 [P/F]
PD2 Lectures: NONE	PD2 Lectures via Panopto: NONE	April 27-May 4	(2) Communications Sakai Assignment (Select Students) Opened March 23/DUE May 1 [P/F] (4) Wellness Sakai Assignment (All Students) Opens April 27/DUE May 4
Total lectures: 7	Total lectures (Panopto): 3	-	-

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = P/F *Total points breakdown:* NONE	Total points = P/F Prior to midterm: Pass with Attendance (lectures, communications labs and faculty mentor group meetings, and CV Assignment by DUE DATE Online Requirements in addition to the above to Pass: 1) All students: a. EBVM assignment by the DUE DATE b. Wellness assignment by the DUE DATE 2) Students who did not get to participate in the Communication Labs and Faculty Mentor Meetings prior to evacuation must complete the Communications Assignment and/or the Ethics assignment by the DUE DATES.

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Initiating the Client Interview and Non-Verbal Communication: To be integrated with Communications in Professional Development III (PD3) Fall 2020
2. Navigating towards Internship and Residency: To be recorded in Fall 2020 when Panel is recorded in PD2 and link to Panel will be provided to students in PD3)
3. Non-Traditional Career Paths in Veterinary Medicine: To be recorded in Fall 2020 when Panel is recorded in PD2 and link to Panel will be provided to students in PD3)

LAMS 542 Lecture Schedule– Spring 2020

Date / Hour	Lecture topic	Faculty
January 22nd 8.30-10:20a	ESCAPE Debt-Leave ROOM for Personal and Professional Growth	Dr. Heather Douglas
January 23rd 8:30-920a	Practice Culture-Environmental Analysis of a Healthy Workplace	Dr. Heather Douglas
January 24th 8.30-9.20a	Budgeting (Again!)-Saving, Spending, and Self-Awareness	Dr. Heather Douglas
January 24th 9.30-10.20a	Mindfulness in Veterinary Medicine	Dr. Heather Douglas
January 31st 8.30-10:20a	Ethics in Scientific Research and Writing/ Ethics in EBVM and Learning in Practice	Dr. Austin Kirwan
February 3rd 8.20-10.20a	Developing an Ethical Professional Fee/Commutative and Distributive Justice-The Moral Maze of Finances	Dr. Austin Kirwan
February 13th 10.30-12.20p	CV and Letter of Intent Workshop	Dr. Brian Butler
February 19th 11.30-12.20p	Introduction to Client Communication	Dr. Nicki Wise
February 20th 11.30-12.20p	Giving Effective Feedback	Dr. Nicki Wise
February 26th 11.30-12.20p	Self-Compassion in Veterinary Medicine	Dr. Adria Rodriguez
March 4th 8.30-9.20a	Informatics for Veterinary Medicine	Ms. Suzanne Paparo
March 18th 10.30-11.20a	Initiating the Client Interview and Non-Verbal Communication	Dr. Nicki Wise
March 27th 11.30-12.20a	Identifying, Persuading, and Referring Someone at Risk of Suicide	Dr. Adria Rodriguez
April 1st 8.30-920a	Literature Review and Reference Management	Ms. Jill Paterson
April 8th 9.30-10.20a	Scientific Writing	Ms. Heather Brathwaite
April 15th 8.30-9.20a	Presenting Research	Ms. Jill Paterson
April 23rd 8.30-9.20a	Navigating towards Internship and Residency	Dr. Brian Butler
April 24th 8.30-9.20a	Non-Traditional Career Paths in Veterinary Medicine	Dr. Brian Butler

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
LARGE ANIMAL MEDICINE AND SURGERY DEPARTMENT
***LIVESTOCK MEDICINE I* (2 Credits)**
LAMS 544 TERM 5
Spring 2020

I. Course faculty and staff information

Course director

Dr. Stacey Byers, DVM, MS, DACVIM(LA), *Associate Professor*
sbyers1@sgu.edu
Office Phone 444-4175 ext 3833
Cell Phone 473-421-1050
Office Location: Cassia Building, 1st Floor
Office Hours: By appointment

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

Ray and Jan Sis Building – West Lecture Hall

III. Prerequisite and/or co-requisite courses

Current fifth term SVM student

IV. Required resources

- Published notes, lecture slides, and articles (on Sakai-Resources), and discussions that occur during the lectures.
- Large Animal Internal Medicine, Smith BP, 5th Edition
- 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 large animal diseases may be posted on SAKAI and students are recommended to read these.
- Useful livestock-oriented texts:
  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.

- Reputable online resources that may be helpful include: Web of Science, Pubmed, Google Scholar, and CAB abstracts.

VI. Special accommodation

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

VII. Other requirements

Not applicable

VIII. Course rationale

The principles of diagnosis, treatment, and prevention of diseases of domesticated ruminants, as well as swine and camelids, are taught utilizing a lecture format with integrated case discussions. These are used to illustrate the context and application of material presented and to promote development of problem-solving skills. Individual and herd medicine and the role of the veterinarian in promotion of a healthy food supply are addressed.

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

IX. Course level outcomes

See Appendix 1.

X. Lesson level outcomes

See Appendix 2

XI. Alignment of course level outcomes with program level outcomes

See Appendix 1

XII. Course schedule

See Appendix 3

XIII. Grading and assessment policy, and grading rubrics

There will be 2 exams for this course comprised of a midterm and a comprehensive final.

Exam material will come from required readings/notes, lectures and in class discussions. There will be 2-3 questions/lecture of new material for both the midterm and the final exam and there will be an additional 1 question/lecture of review material on the final exam. Exam will include case-based questions building on previous lecture topics. Exam dates and times are as follows and are listed on the

lecture schedule posted on Sakai. Any deviation from the schedule will be announced on Sakai and during class:

Assessment	**Date**
Midterm	Friday, March 6 1:30-2:00
Final	Wednesday, May 13 1:30-3:00

The points breakdown is as follows:

Lectures	**Midterm (30 min)**	**Final (90 min)**
1-13	24	13
14-32		51
Total		**64**

The final grade for this course reflects exam scores. The grading scale for this course is as follows:

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

XIV. Recommended study strategies

Study strategies include class attendance and participation, reading the notes and other course materials, and reviewing cases discussed in class. Course notes will be provided on Sakai and lectures available on Sonic Foundry. Students are expected to have command of the information provided in previous courses and from recommended reading resources.

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

Review of the course every night is encouraged. This reduces panic the night prior to an examination, poor performance on the exams, and poor retention of information.

Individual or group office hours can be made by appointment if additional assistance is needed. If a student feels they are falling behind or their grades are inadequate, they should arrange a meeting with their academic advisor as well as someone from the DES office.

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

XV. Instructor's expectations of the student

You are expected to adhere to the guidelines provided throughout this syllabus including attendance and examination policies.

You will benefit the most from class lectures by actively participating. The 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 in the classroom, so please speak up.

You are expected to reach out to the appropriate instructors or course director if you are having difficulty with the subject matter. Office hours with the course director will be available by appointment.

Review sessions before the midterm and final can be scheduled through your class representative.

Post exam discussion sessions can be scheduled through the class representative since an emailed response clarifying questions will not be provided.

XVI. Professionalism statement

Professional behavior is expected in lectures and exams. Turn cell phones off during class and examinations. Arrive on time.

The 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.

XVII. Attendance policy

Lecture attendance is expected. Participation will assist in your learning of the materials.

Interactive case discussions may not be recorded on Panopto since they are group discussions and audience audio is not captured. These cases are used to integrate and reinforce lecture materials, and they are great opportunities to explore options, what others have experienced, and bring real-life situations into the lecture room.

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

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

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

Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University. Make up exams may include multiple choice questions, short answer questions and short essay questions.

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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may

be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify security features will be subject to academic disciplinary action.
18. 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

    *No other personal belongings will be permitted.

XX. Copyright policy

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

APPENDIX 1: Course level outcomes and alignment of course learning outcomes with program learning outcomes (PLO)

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

Course Learning Outcomes	Program Learning Outcomes (PLO)
A. Explain the etiology and pathophysiology for livestock animal diseases.	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.
B. Create appropriate differential diagnoses based on presenting complaints, history, physical exam findings, and clinical signs.	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 veterinary medicine. PLO 7 Evaluate and analyze normal versus abnormal animal behavior. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.
C. Determine the appropriate diagnostic tests and interpret the results to rule in or rule out differential diagnoses to make a diagnosis.	PLO 6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list.
D. Recognize emergency presentations and determine appropriate management strategies.	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 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. 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. PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.
E. Formulate appropriate treatment and prevention regimens for individual and herd level issues. Integrate knowledge of legislation regarding appropriate use of therapeutic agents in food producing animals.	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 10 Recall, understand, and adequately utilize knowledge of animal nutrition for common domestic animals under a variety of husbandry conditions. PLO 21 Create comprehensive treatment plans. Includes prognosis PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare. PLO 24 Analyze, design and execute appropriate plans for medical case management. PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.
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.	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 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. PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis. Create a differential list. PLO 26 Design and execute plans for health promotion, disease prevention, food safety, biosafety and biosecurity.

APPENDIX 2: Lesson level outcomes

Lecture topics often cover multiple days. See the schedule (Appendix II) for more details on lecture topic dates. More detailed objectives for study purposes may be provided in the lecture materials.

A. Therapeutic agents

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.
4. Describe the principles of the beef, dairy, and pork quality assurance guidelines.

B. Livestock gastrointestinal tract

1. Review the gastrointestinal tract anatomy and physiology of the different livestock species.
2. Describe the etiology and pathophysiology of gastrointestinal diseases of livestock.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.
6. Describe the types of vagal indigestion, the underlying causes, and how to distinguish between them diagnostically and clinically.

C. Livestock ophthalmology

1. Explain normal and abnormal ocular findings.
2. Describe the etiology and pathophysiology of ocular disorders in livestock.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests for a variety of husbandry situations and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

D. Livestock urinary tract

1. Review the unique urogenital anatomical variations in livestock and the relevance to urinary diseases.
2. Describe the etiology and pathophysiology of upper and lower urinary tract diseases.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

E. Livestock 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 clinical signs, diagnostic tests, treatment options, and prognosis for a septic or “scouring” neonate.

F. Livestock dermatology
1. Review the clinical signs, diagnostic tests, and treatment options for external parasites.
2. Describe the etiology and pathophysiology of dermatological diseases.
3. Develop an appropriate differential diagnosis list.
4. Select appropriate diagnostic tests and explain test results.
5. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

G. Livestock musculoskeletal system
1. Review the anatomy of the livestock limb.
2. Describe the clinical signs of a lame animal and lameness scoring based on gait and posture in bovine.
3. Describe the etiology and pathophysiology of musculoskeletal and neuromuscular disorders.
4. Develop an appropriate differential diagnosis list.
5. Select appropriate diagnostic tests and explain test results.
6. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.
7. Describe the management of recumbent livestock.

H. Livestock cardiovascular system
1. Describe the etiology and pathophysiology of cardiovascular disorders.
2. Develop an appropriate differential diagnosis list.
3. Select appropriate diagnostic tests and explain test results.
4. Develop a treatment and control/prevention plan appropriate for the animal husbandry/management situation.

I. Zoonotic and Reportable diseases
1. Identify zoonotic diseases and how to appropriately manage them.
2. Identify the vesicular diseases that occur in livestock and the veterinarian's role a vesicular disease outbreak.

APPENDIX 3: Schedule

No.	Date	Time	Topic	Instructor
1	Mon, Jan 27	1:30	Introduction and Urinary Tract	Byers
2	Wed, Jan 29	1:30	Therapeutic Agents	Werners
3	Tue, Feb 4	3:30	Therapeutic Agents	Werners
4		4:30	Urinary Tract	Byers
5	Fri, Feb 14	2:30	Urinary Case w/LAMS 516	Byers, Janicke, Werners
6	Tue, Feb 25	1:30	Neonatology	Byers
7	Wed, Feb 26	4:30	Neonatology	Byers
8	Thu, Feb 27	2:30	Neonatology	Byers
9		3:30	Cardiology	Byers
10	Fri, Feb 28	3:30	Cardiology	Byers
11	Tue, Mar 3	1:30	Cardiology	Byers
12	Wed, Mar 4	1:30	Dermatology	Byers
13	Thu, Mar 5	3:30	Dermatology	Byers
	Fri, Mar 6	1:30-2:00	Midterm	
14	Thu, Mar 19	3:30	Gastrointestinal Tract	Byers
15	Tue, Mar 24	3:30	Gastrointestinal Tract	Byers
16	Thu, Mar 26	3:30	Gastrointestinal Tract	Byers
17	Mon, Mar 30	2:30	Gastrointestinal Tract	Byers
18	Tue, Mar 31	2:30	Gastrointestinal Tract	Byers
19	Wed, Apr 1	1:30	Gastrointestinal Tract	Byers
20	Thu, Apr 2	3:30	Gastrointestinal Tract	Byers
21	Fri, Apr 3	4:30	Gastrointestinal Tract	Byers
22	Mon, Apr 6	1:30	Gastrointestinal Tract	Byers
23	Tue, Apr 7	2:30	Gastrointestinal Tract	Byers
24	Wed, Apr 8	3:30	Gastrointestinal Tract	Byers
25	Thu, Apr 9	2:30	Gastrointestinal Tract	Byers
26	Tue, Apr 14	3:30	GI Case w/LAMS 516	Byers, Janicke, Werners
27	Fri, Apr 17	2:30	Musculoskeletal	Byers

28	Mon, Apr 20	1:30	Musculoskeletal	Byers
29	Tue, Apr 21	1:30	Musculoskeletal	Byers
30	Wed, Apr 22	2:30	Musculoskeletal	Byers
31	Tue, Apr 28	2:30	Ophthalmology	Byers
32	Wed, Apr 29	2:30	Ophthalmology Case w/LAMS 516	Byers, Janicke, Werners
	Wed, May 13	1:30-3:00	Final exam	

SVM Course Code: LAMS 544
Course Director: Dr. Stacey Byers
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Lectures: lecture numbers correspond to original syllabus. See syllabus for LLOs. None have been dropped for the remainder of the term: Originally listed as lectures: 14-26. Gastrointestinal tract	Gastrointestinal Tract Lectures via Panopto: 1. GIT PE review 2. Oral cavity and esophagus 3. Oral cavity and esophagus	March 23-29 GIT panopto 1-3	
See above	Gastrointestinal Tract Lectures via Panopto: 4. Rumen, reticulum, omasum 5. Rumen, reticulum, omasum 6. Rumen, reticulum, omasum	March 30-April 5 GIT panopto 4-6	
See above	Gastrointestinal Tract Lectures via Panopto: 7. Abomasum and vagal syndrome 8. Abomasum and vagal syndrome 9. Abomasum and vagal syndrome Office hours via Zoom	April 6-12 GIT panopto 7-9 Optional office hours, saved in panopto	Sakai quiz 1 covering Panopto Gastrointestinal lectures 1-9. Opens Friday April 10, 8:00 am AST Closes Friday April 17, 8:00 am AST 27 pts
See above	Gastrointestinal Tract Lectures via Panopto: 10. Intestines and diarrhea 11. Intestines and diarrhea 12. Intestines and diarrhea	April 13-19 GIT panopto 10-12	

Lectures 27- 30. Musculoskeletal	Musculoskeletal Lectures via Panopto: 1. Musculoskeletal disorders 2. Down animal syndromes	April 20-26 Musculoskeletal panopto 1-2	
See above	Musculoskeletal Lectures via Panopto: 3. Feet and lameness 4. Feet and lameness Office hours via Zoom	April 27-May 3 Musculoskeletal panopto 3-4 Optional office hours, saved in panopto	
Lecture 31-32. Ophthalmology	Ophthalmology Lecture via Panopto: 1. Ocular disorders	May 4-10 Ophthalmology panopto 1	Sakai quiz 2 covering Panopto Gastrointestinal lectures 10-12, Musculoskeletal 1-4, Ophthalmology 1 Opens Wednesday May 6, 8:00 am AST Closes Wednesday May 13, 8:00 am AST 24 pts
Total Lectures: 19	Total Lectures (Panopto): 17 Total optional zoom sessions: 2		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 88 *Total points breakdown:* Midterm 24 pts Final 64 pts	Total points =75 *Total points breakdown:* Midterm (already completed) 24 pts Quiz 1: 27 pts Quiz 2: 24 pts

Learning outcomes: please list any CLO or LLO's which were omitted below:

No LLOs or CLOs were omitted in this course.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

PATHOBIOLOGY DEPARTMENT

***BACTERIOLOGY & MYCOLOGY* (4 credits)**

PTHB 503 (Term 2)

Spring 2020 Online Course Completion

Course faculty

Co-Course Director:
Andy Alhassan, MSc, DVM, PhD Associate Professor PTHB (Co-Course Director)
Email: aalhass1@sgu.edu

Co-Course Director:
Victor A. Amadi, BSc, MSc, PhD, Assistant professor PTHB (Co-Course Director)
Email: vamadi@sgu.edu

Participating Faculty:
Josephine Afema, BVM, MPVM, PhD, Associate Professor PTHB
Email: jazikuru@sgu.edu

I. Course rationale

The course provides basic foundation needed for an understanding of clinical veterinary practice with reference to bacterial and fungal disease conditions in animals. This course is required by veterinary students in order to recognize and understand the major bacterial and fungal pathogens of veterinary significance, with respect to the habitats, virulence factors, pathogenesis and the effects on different animal species. Specimen collection and isolation, and control by antimicrobial drugs and biological agents will also receive emphasis.

II. Course-level outcomes

1. Provide scientific nomenclature associated with veterinary bacteriology and mycology.
2. Explain names of bacteria and fungi associated with various disease conditions
3. Describe the important features of specified animal pathogens, including their habitats, survival, host range and transmission.

4. List and present the principles of specimen collection and submission for bacterial and fungal isolation including the rationale for sample collection.
5. Describe pathogenesis, drug susceptibility and immunity of bacteria and fungi.
6. Describe appropriate diagnostic tests and control measures for important bacterial and fungal disease of animals.
7. Explain inherent and acquired drug resistance, and spectrum of activity of commonly used antimicrobial drugs.
8. Describe procedures for determining bacterial susceptibility to antimicrobial agents.

Online revised Lectures Schedule

Date	**Lecturer**	**Lecture Topic**	**Expectations**
23-27 Mar	Afema " "	*Pasteurella* *Francisella, Mannheimia* *Haemophilus/* *Histophilus/Avibacterium*	Review lecture slides View panopto videos **Post discussion on sakai**
30-Mar 3rd April	" " "	*Actinobacillus* *Taylorella/ Burkholderia* **Review**	
6-10-Apr	Alhassan " "	*Pseudomonas* *Proteus/ Klebsiella* *Yersinia/ Shigella*	Review lecture slides View panopto videos **Post discussion on sakai**
14-17-Apr	Shah/Alhassan " "	Establishment of infectious diseases Disease mediated by exotoxin: *Bacillus, Clostridium tetani, botulinum* and others	Review lecture slides View panopto videos
20-24-Apr	" " "	Gastrointestinal pathogens: *Escherichia coli* Gastrointestinal pathogens: *Salmonella, Campylobacter*	Review lecture slides View panopto videos
27-30-Apr	" " " " "	*Clostridium perfringens* and *difficile* Skin infections: Pyodermas, Skin pathogens: *Staphylococcus, Dermatophilus*, *Erysipelothrix* **Review**	Review lecture slides View panopto videos **Post discussion on sakai**
4th -6-May	Alhassan " "	Mycobacterium Anaerobes: *Dichelobacter/* *Fusobacterium /Bacterioides/* *Porphyromonas/ Prevotella* **Review for Final**	Review lecture slides View panopto videos **Post discussion on sakai**
		Friday, 15th May 2020, LECTURE EXAM	

Revised Laboratories Schedule:

Labs	Date	Topic	Assessment Schedule
7 & 8 **(Cont.)**, & 13	23-Mar	**Interpretation of culture results, & Polymerase chain reaction (PCR) - in bacterial diagnosis**	Read corresponding lab-materials **Assignment # 1**
11 & 12	6-Apri	Introduction on bacterial identification tests, **Gram-negative** bacteria. Clinical cases and diagnosis	Read corresponding lab-materials Demonstration plates or tests will be provided on power points slides **Assignment # 2**
9 & 10	14-Apr	Introduction on bacterial identification tests, **Gram-positives** and acid-fast bacteria, clostridia. Clinical cases and diagnosis	Read corresponding lab-materials Demonstration plates or tests will be provided on power points slides
9 & 10 **(Cont'd)** + **Review**	20-Apr	Gram-positives and acid-fast bacteria, clostridia. Clinical cases and diagnosis **(Cont'd), & Review for Lab Final exam**	Read corresponding lab-materials Demonstration plates or tests will be provided on power points slides **Assignment # 3**
	27-APR	**NOTE: NO LAB GROUPS INDIVIDUAL LAB ASSIGNMENTS !**	**COMPLETE AND SUBMIT LAB ASSIGNMENTS FOR POINTS**

I. Recommended study strategies

Dr. Alhassan, Dr. Afema and Dr Amadi are willing to assist with questions regarding the material and study strategies for the online course. Should the student have major difficulties with the course material, time management and/or testing, it is strongly recommended to contact us or the Department of Educational Services (DES).

II. Evaluation

The Importance of Evaluation: Evaluation is a necessary component of the online course. Just as you, the student, anticipate a fair and accurate evaluation of your performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves as students' needs and expectations are considered.

POINTS ASSIGNED

Lecture:	
Quiz	20 Points (completed)
Lecture Exam I	60 Points (completed)
Lecture exam	**40 Points**
Laboratory:	
Laboratory Attendance	5 points
Laboratory Exam I	5 points (completed)
Laboratory assignments	**30 points**
Total	**160 Points**

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

PATHOBIOLOGY DEPARTMENT

***BACTERIOLOGY & MYCOLOGY* (4 credits)**

PTHB 503 (Term 2)

Spring 2020

I. Course Faculty and Staff Information

Co-Course Director:
Andy Alhassan, MSc, DVM, PhD Associate Professor PTHB
Email: aalhass1@sgu.edu
Office Location: Veterinary Basic Medical Sciences building, Pathobiology Academic Program offices
Office Hours: Email for appointment

Co-Course Director:
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

Participating Faculty:

Josephine Afema, BVM, MPVM, PhD, Associate Professor PTHB

Email: jazikuru@sgu.edu

Office Location: Veterinary Basic Medical Sciences building, Pathobiology Academic Program offices

Visiting Faculty:
Devendra Shah, DVM, MSc, PhD, Associate Professor, Department of Veterinary Microbiology and Pathology, Washington State University, Pullman, Washington, USA

Staff:
Erica Brathwaite, Laboratory Technician

Roxanne Nicholas, Laboratory Technician
Cindy Edwards, Administrative Assistant I

II. Course location

David Brown Lecture Hall (formerly called Alumni Lecture Hall)

III. Prerequisite and/or co-requisite courses

Current Term 2 student

IV. Required resources

There is no required resource.

V. 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

VI. Recommended resources

Recommended resources 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

VII. Other requirements

Laboratory Safety Rules and Aseptic Techniques

1. Do not eat or drink in the laboratory at any time; and do not bring food/drinks into the laboratory, particularly to your bench. This will be strictly enforced, and **you will lose 2 points** if you do not comply.
2. Wear a laboratory coat at all times to protect clothes from contamination. If your lab coat becomes contaminated, notify an instructor at once. Your coat will be sterilized for your protection. If you do not bring a lab coat, you will be asked to leave the lab until you get a lab coat, and **you will lose 2 points** if you do not comply.
3. Covered shoes are required for your protection. If you have the wrong shoes, you will be asked to leave the lab until you are wearing proper shoes, and **you will lose 2 points** if you do not comply.

4. All cultures are potential pathogens. Use aseptic technique with all bacteria and DO NOT contaminate yourself, your notebooks, lab bench or microscope. Keep **long hair tied back** and loose clothing away from the Bunsen burner. If you are not properly attired or have loose hair, you will be asked to leave the lab until you are compliant, and **you will lose 2 points** if you do not comply.
5. Do not throw away cultures down the sink or leave in the waste basket. Dispose of all cultures, glass slides, pipettes etc. in the designated containers in the lab. These items will be autoclaved before disposal.
6. **DO NOT** put anything (pens, pencils, fingers) in or near your mouth or eyes while working in the laboratory. If contaminated material gets into your eyes or mouth, rinse immediately with running water and notify the instructors.
7. **DO NOT** pipette by mouth!
8. Keep only the materials needed for that day's laboratory on your bench. Keep coats, books and other items away from work bench.
9. **Wash your hands** when you leave the laboratory, even if you are leaving for a short time. Hand washing should become automatic.
10. Disinfect your bench top after working. Clean up your area before you leave. **DO NOT** leave cultures or test tubes on the bench unless directed to do so by the instructors. Under no circumstances are cultures to be removed from the laboratory.
11. If a culture is dropped or spilled, notify your lab partners and the instructor immediately. Make sure no one steps in the contaminated area. Cover the spill with paper towels soaked in disinfectant.
12. Light your Bunsen burner and work in the vicinity of the flame to take advantage of the upward draft of air around the burner. **DO NOT** work in a draft. Avoid coughing or sneezing when handling your cultures.
13. Hold open containers at an angle to avoid the chance of airborne contamination. You do not need to flame the lip of sterile test tubes but **DO NOT** leave open for any longer than necessary to perform the inoculation or test.
14. When inoculating Petri dishes, open them only as long as you need to perform the inoculation or test. When opening an agar plate culture of bacteria, open the plate slowly to avoid creating an aerosol. **DO NOT** put your nose directly into a culture to smell it.
15. Heat inoculating needles and loops to glowing red in the flame before and after contact with microorganisms, including making smears for Gram stain. To avoid creating aerosols, always cool your loop before touching it to agar or broth cultures.

VIII. Course rationale

The course provides basic foundation needed for an understanding of clinical veterinary practice with reference to bacterial and fungal disease conditions in animals. This course is required by veterinary students in order to recognize and understand the major bacterial and fungal pathogens of veterinary significance, with respect to the habitats, virulence factors, pathogenesis and the effects on different animal species. Specimen

collection and isolation, and control by antimicrobial drugs and biological agents will also receive emphasis.

IX. Course-level outcomes

1. Provide scientific nomenclature associated with veterinary bacteriology and mycology.
2. Explain names of bacteria and fungi associated with various disease conditions
3. Describe the important features of specified animal pathogens, including their habitats, survival, host range and transmission.
4. List and present the principles of specimen collection and submission for bacterial and fungal isolation including the rationale for sample collection.
5. Describe pathogenesis, drug susceptibility and immunity of bacteria and fungi.
6. Describe appropriate diagnostic tests and control measures for important bacterial and fungal disease of animals.
7. Explain inherent and acquired drug resistance, and spectrum of activity of commonly used antimicrobial drugs.
8. Describe procedures for determining bacterial susceptibility to antimicrobial agents.

X. Lesson-level outcomes

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

1. Utilize scientific nomenclature associated with veterinary bacteriology and mycology.
2. Recall the names of bacteria and fungi associated with various disease conditions
3. Describe the important features of specified animal pathogens, including their habitats, survival, host range and transmission.
4. List and observe the principles of specimen collection and submission for bacterial and fungal isolation including the rationale for sample collection.
5. Describe the pathogenesis, drug susceptibility and immunity.
6. Describe appropriate diagnostic tests and control measures for important bacterial and fungal disease of animals.
7. Understand inherent and acquired drug resistance, and spectrum of activity of commonly used antimicrobial drugs.
8. Describe the procedures for determining bacterial susceptibility to antimicrobial agents.

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

"Not applicable at this time".

XII. Course Schedule

Course Schedule: Lectures

Be aware that this syllabus is a guide. Lectures may take more or less time depending upon class interest and participation.

Week	Lecture	Day	Date	Time	Lecturer	Lecture Topic
1	1	Mon	20-Jan	10:30	Alhassan	Intro to Bacteriology / Bacterial morphology
	2	Thu	23-Jan	11:30	"	Bacterial cultivation / Identification
	3	Fri	24-Jan	11:30	"	Intro to Mycology
2	4	Mon	27-Jan	8:30	"	Lab diagnosis of bacterial & fungal diseases
	5	Wed	29-Jan	8:30	Afema	Bacterial pathogenesis/ Virulence factors
3	6	Mon	3-Feb	11:30	"	Antimicrobial agents
	7	Tue	4-Feb	10:30	"	Antimicrobial agents/ **Review**
	8	Wed	5-Feb	10:30	Alhassan	Biosecurity, sterilization, disinfection
	9	Thu	6-Feb	10:30	"	**Review for Quiz**
4	**10**	**Mon**	**10 Feb**	**8:30**		**Quiz**
	11	Tue	11-Feb	8:30	Alhassan	Mycology: Dermatophytes / *Aspergillus*,
	12	Wed	12-Feb	10:30	"	*Candida*, *Malassezia* / Dimorphic fungi
	13	Fri	14-Feb	10:30	"	Mycotoxins/ Antifungal agents
5	14	Mon	17-Feb	10:30	"	*Corynebacterium group, Rhodococcus,*
	15	Wed	19-Feb	10:30	"	*Actinomyces, Nocardia, Listeria*
	16	Thu	20-Feb	10:30	"	Intracellular bacteria: *Rickettsia, Ehrlichia*
	17	Fri	21-Feb	11:30	"	*Neorickettsia, Wolbachia,*
6	18	Mon	24-Feb	10:30	"	*Anaplasma, Coxiella*
	19	Wed	26-Feb	10:30	"	Spirochetes
	20	Thu	27-Feb	10:30	"	*Bordetella, Moraxella*
	21	Fri	28-Feb	11:30	"	*Brucella*, *Lawsonia*
7	22	Tue	3-Mar	9:30	"	*Mycoplasma* -1 & 2
	23	Wed	4-Mar	10:30	"	*Chlamydia* group, *Bartonella*
	24	Thu	5-Mar	10:30	"	**Review for Midterm**
Thursday, 12th March 2020, 8:30 AM: MIDTERM EXAMINATION						

Course Schedule: Lectures (Continued)

Week	Lecture	Day	Date	Time	Lecturer	Lecture Topic
9	25	Wed	18-Mar	11:30	Afema	*Pasteurella*
	26	Thu	19-Mar	10:30	"	*Francisella, Mannheimia*
	27	Fri	20-Mar	9:30	"	*Haemophilus/ Histophilus/Avibacterium*
10	28	Mon	23-Mar	10:30	"	*Actinobacillus*
	29	Wed	25-Mar	10:30	"	*Taylorella/ Burkholderia*
	30	Thu	26-Mar	10:30	"	**Review**
11	31	Mon	30-Mar	10:30	Alhassan	*Pseudomonas*
	32	Wed	1-Apr	10:30	"	*Proteus/ Klebsiella*
	33	Fri	3-Apr	10:30	"	*Yersinia/ Shigella*
12	34	Tue	7-Apr	10:30	Shah	Establishment of infectious diseases
	35	Wed	8-Apr	10:30	"	Establishment of infectious diseases
	36	Thu	9-Apr	11:30	"	Gastrointestinal pathogens: *Escherichia coli, Salmonella, Campylobacter, Helicobacter*
13	37	Tue	14-Apr	9:30	"	Gastrointestinal pathogens: *Clostridium perfringens* and *difficile*
	38	Thu	16-Apr	11:30	"	Disease mediated by exotoxin: *Bacillus*
	39	Fri	17-Apr	10:30	"	Mycobacterial diseases: *Mycobacterium*
14	40	Mon	20-Apr	11:30	"	Skin pathogens: *Staphylococcus*
	41	Tue	21-Apr	9:30	"	Skin pathogens: *Streptococcus*
	42	Wed	22-Apr	10:30	"	Skin pathogens: *Dermatophilus*
	43	Thu	23-Apr	10:30	"	Skin pathogens: *Erysipelothrix*
	44	Fri	24-Apr	10:30	"	**Review**
15	45	Mon	27-Apr	11:30	Alhassan	Anaerobes: *Dichelobacter/ Fusobacterium*
	46	Wed	29-Apr	10:30	"	*/Bacterioides/ Porphyromonas/ Prevotella*
	47	Wed	29-Apr	11:30	"	**Review for Final**
Friday, 8th May 2018, 8:30 AM: FINAL EXAMINATION						

Course Schedule: Laboratories

Week	Labs	Day	Date	Time	Topic
2	1 & 2	Wed	29-Jan	1:30 PM	Introduction, Gram staining, Streak plate technique on clinical sample or mixed cultures
		Fri	31-Jan	1:30 PM	"
4	3 & 4	Wed	12-Feb	1:30 PM	Antibiotic susceptibility testing, Quantitative culture of urine for diagnosing urinary tract infections in dogs
		Fri	14-Feb	1:30 PM	"
5	**5 & 6**	**Wed**	**19-Feb**	**1:30 PM**	Interpretation of sensitivity & UTI results + **Lab Exam I (Gram staining & streak plate)**
		Fri	**21-Feb**	**1:30 PM**	**"**
6	7 & 8	Wed	26-Feb	1:30 PM	Mycology Demonstrations, and Gram staining of yeasts. Wet mount exam for ringworm. Culture of clinical samples
		Fri	28- Feb	1:30 PM	"
9	7 & 8 **(Cont.)**, & 13	Wed	18-Mar	1:30 PM	**Interpretation of culture results, & Polymerase chain reaction (PCR) - in bacterial diagnosis**
		Fri	20-Mar	1:30 PM	"
10	11 & 12	Wed	25-Mar	1:30 PM	Introduction on bacterial identification tests, **Gram-negative** bacteria. Clinical cases and diagnosis
		Fri	27-Mar	1:30 PM	"
11	9 & 10	Wed	1-Apr	1:30 pm	Introduction on bacterial identification tests, **Gram-positives** and acid-fast bacteria, clostridia. Clinical cases and diagnosis
		Fri	3-Apr	1:30 pm	"
13	9 & 10 **(Cont'd)** + **Review**	Wed	15-Apr	1:30 pm	Gram-positives and acid-fast bacteria, clostridia. Clinical cases and diagnosis **(Cont'd), & Review for Lab Final exam**
		Fri	17-Apr	1:30 pm	"
15		**Thu**	**30-Apr**	**1:30 PM**	**Lab Exam Final (for WED group)**
				2:30 PM	**Lab Exam Final (for FRI group)**

Laboratory: WED Group, 1:30 – 4:20 PM; AND FRI Group: 1:30 – 4:20 PM

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

There will be **three** written examinations, based on **Lectures.** The examinations will consist of **multiple choice questions** (MCQ).

All examinations will be sequestered. Question papers are to be surrendered prior to leaving the examination hall.

There will be **two** laboratory examinations; the first on basic techniques, and the second one on a diagnosis based on case history and smears and /or cultures. Points will also be assigned for laboratory attendance.

POINTS ASSIGNED

Lecture:	
Quiz	20 Points
Lecture Exam I	60 Points
Lecture Exam II	60 Points
Laboratory:	
Laboratory Attendance	5 points
Laboratory Exam I	5 points
Laboratory Exam II	10 points
Total	**160 Points**

Grading Scale: Final grading will be based on cumulative performance of all examinations including laboratory scores, given for the course. Grading will be as follows (%):

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

All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

Dr. Alhassan, Dr. Amadi, and lecturers 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).

Office hours can be made by emailing Dr. Alhassan (aalhass1@sgu.edu), or Dr. Amadi (vamadi@sgu.edu). Review sessions for lecture and laboratory material will be held for the class and will be either during normal class hours or will be scheduled through the assistance of a Term 2 class coordinator.

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.

Evaluation

The Importance of Evaluation: Evaluation is a necessary component of any course. Just as you, the student, anticipate a fair and accurate evaluation of your performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves as students' needs and expectations are considered.

Your Participation in the Evaluation Process is **MANDATORY**: When you are expected to complete a course and/or instructor critique, the Office of Educational Assessment (OEA) will notify you via your SGU e-mail account and post a notice outside the lecture hall. This notification will include instructions on how to access and complete the necessary critique(s). Once you access a required course or instructor critique, you can either complete it or indicate that you do not want to complete the critique by checking the appropriate box on the form. Students who have not submitted evaluations within the allocated period will be placed on a "registration hold" by the Registrar's Office. A registration hold bars students from registering for future classes until all outstanding evaluations are completed. At registration time, students on "registration hold" will be directed to the OEA for instructions on how to complete

remaining evaluations. Once these are submitted, the registration hold will be lifted.

XVII. Attendance policy

The Student Handbook states that "**students are expected to attend all classes** and other related academic activities...as defined for each course by the Course Directors." One such "academic activity" is your participation in the St. George's University (SGU) Course and Instructor Critique program.

Lecture attendance policy: Attendance during lectures is required.

Laboratory session attendance policy: Attendance in labs will be checked through an attendance sheet, and **points will be deducted from the attendance points for each missed lab.** Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If an extended absence is required, a leave of absence form from the Dean of Students office must be submitted. Refer to the handbook for rules/regulations on attendance and absences.

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

Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted for absences. If an extended absence is required, a leave of absence form from the Dean of Students office must be submitted. Refer to the handbook for rules/regulations on attendance and absences. Failure to attend an examination without an acceptable excuse will result in a **zero** for the examination grade.

XIX. ExamSoft policy

Refer to the SGU policy on taking examinations. Individual Strengths and Opportunities reports, which provide categories in which students did well and need improvement, will be provided after the ExamSoft assessments.

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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.

4. 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.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required
6. to display a current SGU student identification card in order to gain access into the
7. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
8. present a government issued photo ID in order to gain access into the exam venue.
9. Students will consult the examination seating list posted outside the examination
10. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
11. discrepancies or seating problems will be reported to the Chief Proctor/Course
12. Director as unprofessional behavior.
13. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
14. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
15. ears must be pulled back. Hats or headwear with brims or bills or which cover the
16. eyes or ears are prohibited.
17. No communication of any kind is permitted between examinees after entering the
18. examination room.
19. Examinees arriving after the published examination time will not be allowed to enter
20. the examination venue if the exam password has been announced.

Examinees are not allowed to write notes on the white boards prior to the official exam start time.
Examinees are not allowed to use a telephone or other communication device at any point during the examination.
A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
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

    *No other personal belongings will be permitted.

XX. Copyright policy

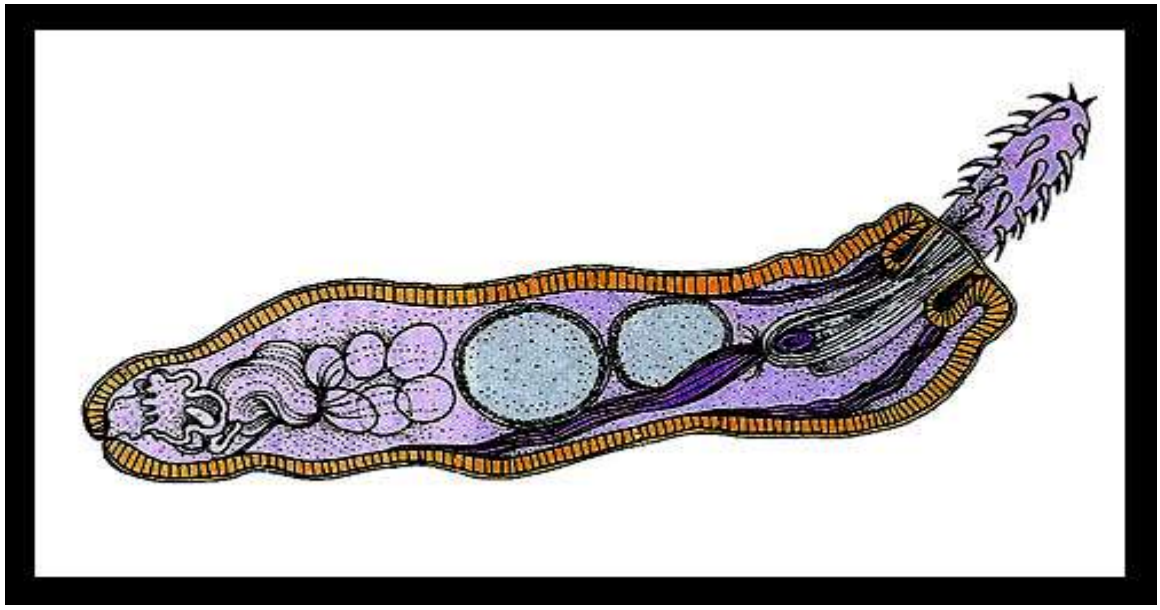
SVM Course Code: PTHB 505
Course Director: Dr. Rhonda D. Pinckney
Spring 2020 Online Course Completion

*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Nematodes Lectures via Sakai (Resources) & Panopto: 1. Intro & Ascarids 2. Hookworms 3. Trichuris, Eucoleus, Pearsonema 4. Trichinella, Dioctophyma & Pinworms	**March 23-27** Look at the power points posted in the correlated folders on Sakai (Resources) & the archived lectures on Panopto	**Quiz # 2 posted on March 23** **(Cestodes & Neospora spp)** **Due date: March 30** **10 Points (20 questions/ 0.5 points each question)**
Nematodes Lectures via Sakai (Resources) & Panopto: 1. Strongyloides, Spiruroids, Dracunculus 2. (Equine) Strongyles 3. Trichostrongyles	**March 30-April 3** Look at the power points posted in the correlated folders on Sakai (Resources) & the archived lectures on Panopto	**Quiz # 3 posted on March 30** **(Trematodes & Acanthocephalans)** **Due date: April 6** **5 points (10 questions/0.5 points each question)**
Nematodes Lectures via Sakai (Resources) & Panopto: 1. Large & Small Animal Lungworms 2. Heartworms & other filarids	**April 6-April 10** Look at the power points posted in the correlated folders on Sakai (Resources) & the archived lectures on Panopto	**Quiz # 4 posted on April 6** **(Ascarids, Hookworms, Trichuris, Eucoleus, Pearsonema)** **Due date: April 13** **5 points (10 questions/0.5 points each question)**
Insects Lectures via Sakai (Resources) & Panopto: 1. Intro to Insects 2. Nematocerans 3. Muscoid & Hippoboscid flies 4. Facultative Myiasis 5. Obligatory Myiasis	**April 13-17** Look at the power points posted in the correlated folders on Sakai (Resources) & the archived lectures on Panopto	**Quiz # 5 posted on April 13** **{Trichinells, Dioctophyma, Pinworms, Strongyloides, Spiruroids & Dracunculus)** **Due date: April 20** **5 points (10 questions/0.5 points each question)**

Insects, Pentastomes & Arachnids Lectures via Sakai (Resources) & Panopto: 1. Fleas 2. Lice 3. Pentastomes 4. Ticks 5. Mites	**April 20-24** Look at the power points posted in the correlated folders on Sakai (Resources) & the archived lectures on Panopto	**Quiz # 6 posted on April 20** **(Strongyles, Trichostrongyles, Large & Small Animal Lungworms)** • **I will send you a "To Know List"** **Due date: April 27** **5 points (10 questions/0.5 points each question)**
Study & Review	**April 27-May 8**	**Final Exam - TBA** **(Insects, Pentastomes & Arachnids)** • **We will send you a "To Know List"** **46 points (1 point each)**
Total lectures (Panopto): 19		

Revised Point Allocation
Total points = 100 *Total points breakdown:* 100 Quiz # 1 = 20 points Quiz # 2 = 10 points Quiz # 3 = 5 points Quiz # 4 = 5 points Quiz # 5 = 5 points Quiz # 6 = 5 points Take Home Quiz # 1 = 2 points Take Home Quiz # 2 = 2 points Final Exam = 46 points

ST. GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
VETERINARY PARASITOLOGY COURSE NOTES (4 CREDITS)
PTHB 505 (TERM 3)
SPRING 2020



I. Course Faculty Information

Course Director: **Dr. Rhonda D. Pinckney, MS, DVM, PhD (Professor of Veterinary Parasitology)**

Email: rpinckney@sgu.edu **or** pinckney.rhonda2@gmail.com (Preferred)
Phone: 444-4175 ext. 3671 (office) or 534-1982 (cell)
Office Location: In the SVM trailer next to Bocca Lupo restaurant
Offcie Hours: Can be made by appointment

Mrs. Camille-marie Coomansingh-Springer, MSc, PhD candidate (Instructor)
Email: ccoomansingh@sgu.edu
Office Phone: 444-4175 ext. 3707
Office Location: Clinical Parasitology Lab (in the back of the Research Building)
Office Hours: Can be made by appointment

Mr. Dan Fitzpatrick, MSc (Instructor)
Email: dfitzpat@sgu.edu
Phone: 444-4175 ext. 3860
Office Location: In the Research Building
Office Hours: Can be made by appointment

II. **Course Location:** Ray & Jan Sis Hall # 2 (lecture) & Bacteriology Lab (Labs)

III. **Pre-requisites:** Current term 3 veterinary students; none required however an understanding of the life cycles, terminology, clinical signs and pathology associated with parasites will be expected.

IV. **Required resources:** Course notes & Lab manual (on Sakai in "Resources" folders)

V. **Recommended Resources:** All power points and other resources will be available on Sakai (select "Course Tools" and click on "Resources". All references will be in folders).

- "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.
- "Prinicples 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 Paraitology", 8th Edition (2012), Ann Zajac and G. A. Conboy (editors), Ames, IA: Wiley-Blackwell.
- Understanding Reptile Parasites: A Basic Manual for Herpetologists and Veterinarians, by Roger Klingenberg. It's readily available on Alibris or Abe Books. It is not deeply comprehensive, but a good overall review with info on diagnosis and treatment.
- Other useful books for reference are available in the library.

- **Selected reference books will be available for use in every laboratory session.**

The following web site demonstrates an image gallery, interactive quizzes, and numerous links to other web sites: **http://www.vetmed.wisc.edu/pbs/vetpara**

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:** Closed toe shoes and lab coats are to be worn in lab.

VIII. **Course Rationale:** Provide a basic understanding of the biology of protozoan and metazoan parasites, understanding relevant host-parasite relationships which are needed to pursue clinical studies and future professional development.

IX. Course-Level Outcomes (CLOs): Upon successful completion of this course, the student will be able to:

1. Explain the clinical manifestation and epidemiology of parasitic disease in terms of the biology and life cycle of the parasite.
2. Comprehend the interactions between host immunity and parasite evasion of host defenses.
3. Discuss the public health implications of the major zoonotic parasites.
4. Identify parasites of veterinary importance by their appearance at post mortem examination and in fecal or other appropriate samples.
5. Explain the mode of action and relevant pharmacokinetic properties of the major groups of chemicals used for parasite treatment.
6. Discuss treatment and control strategies for the major parasites of veterinary and zoonotic importance.

Core material is mostly presented as illustrated lectures and correlating laboratory sessions. Clinical case presentations will be incorporated. Practical classes are used principally to develop skills in parasite recognition and to develop student communication skills in the field of Veterinary Parasitology**.**

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

DATE	TIME	LECT	TOPIC	LECTURER
MO 20 JAN	4:30	1	Introduction to Veterinary Parasitology	Dr. Pinckney
TU 21 JAN	4:30	2	Introduction to Protozoa	
WE 22 JAN	4:30	3	Trichomonads	
MO 27 JAN	4:30	4	Trichomonads (continued)	
TU 28 JAN	4:30	5	*Histomonas*	
WE 29 JAN	4:30	6	*Giardia*	Mrs. Springer
TH 30 JAN	4:30	7	*Entamoeba* & *Balantidium coli*	
FRI 31 JAN	**8:30 & 10:30**		**Lab # 1 (Protozoans I) – TAKE HOME QUIZ #1 (due February 4 @ 4:30)**	
TU 4 FEB	4:30	8	*T. cruzi & Leishmania* (Hemoflaggelates)	Dr. Pinckney
WE 5 FEB	4:30	9	*Leishmania* (continued)	
TH 6 FEB	4:30	10	Introduction to Apicomplexa	
FR 7 FEB			**Independence Holiday**	

MO 10 FEB	4:30	11	*Eimeria & Cystoisospora*	Dr. Pinckney
TU 11 FEB	4:30	12	*Cryptosporidium*	
WE 12 FEB	4:30	13	*Sarcocystis*	
TH 13 SEP	4:30	14	*Toxoplasma gondii*	
FRI 14 FEB	**8:30 & 10:30**		**Lab # 2 – Trypanosomes, *Eimeria & Cystoisospora***	
MO 17 FEB	**1:30**		**QUIZ # 1 - 20 questions (20 points)**	
MO 17 FEB	4:30	15	*Toxoplasma (cont.) & Neospora*	Dr. Pinckney
TU 18 FEB	4:30	16	Introduction to Cestodes (Tapeworms)	
WE 19 FEB	3:30	17	Cestodes (continued)	
TH 20 FEB	4:30	18	Cestodes (continued)	
FRI 21 FEB	**8:30 & 10:30**		**Lab # 3 (*Cryptosporidium, Sarcocystis*, *T. gondii & Neospora*) – TAKE HOME QUIZ # 2 (due February 25 @ 4:30)**	
TU 25 FEB	4:30	19	Introduction to Flukes (or Trematodes)	
WE 26 FEB	4:30	20	Flukes (continued)	
TH 27 FEB	4:30	21	Acanthocephalans (thorny-head worms)	
FRI 28 FEB	**8:30 & 10:30**		**Lab # 4 (Cestodes)**	
MO 2 MAR	4:30	22	Introduction to Nematodes & Ascarids	Mrs. Springer
TU 3 MAR	4:30	23	Ascarids (cont.); Hookworms	
WE 4 MAR	4:30	24	Hookworms (continued)	
TH 5 MAR	4:30	25	*Trichuris, Eucoleus, Pearsonema*	
FRI 6 MAR	**8:30 & 10:30**		**Lab # 5 (Flukes & Acanthocephalans)**	
FRI 13 MAR	**1:30-2:30**		**PARASITOLOGY MID-TERM EXAMINATION – 40 questions (40 points)**	
TU 17 MAR*	**4:30**	26	**NOTE: Date Change -** *Trichinella, Dioctophyma, &* Pinworms	
WE 18 MAR	**4:30**		**Financial Aid**	
TH 19 MAR	4:30	27	*Strongyloides,* Spiruroids, *Dracunculus*	
FRI 20 MAR	**8:30 & 10:30**		**Lab # 6 (Ascarids, Hookworms, Trichuroids) – TAKE HOME QUIZ # 3 (due March 23 @ 4:30) SWITCH LAB TIMES!**	

MO 23 MAR	4:30	28	Equine Strongyles & Trichostrongyles (Dr. P)
TU 24 MAR	4:30	29	Trichostrongyles (continued)
WE 25 MAR	4:30	30	Large animal Lungworms
TH 26 MAR	4:30	31	Small animal Lungworms
FRI 27 MAR	**8:30 & 10:30**		**Lab # 7 (*Trichinella, Dioctophyma,* Pinworms, *Strongyloides*, Spiuroids & *Dracunculus*)**
MO 30 MAR	**1:30**		**QUiZ # 2 – 20 Questions (20 points)**
MO 30 MAR	4:30	32	Heartworms
TU 31 MAR	4:30	33	Heartworms (continued)
WE 1 APR	4:30	34	Heartworms (continued) & other filarids
TH 2 APR	4:30	35	Introduction to Insects (Mr. Dan Fitzpatrick)
FRI 3 APR	**8:30 & 10:30**		**Lab # 8 (Strongyles & Trichostrongyles) TAKE HOME QUIZ # 4 (due April 6 @ 4:30)**
MO 6 APR	4:30	36	Nematocerans & other flies
TU 7 APR	4:30	37	Muscoid & Hippoboscid flies
WE 8 APR	4:30	38	Facultative Myiasis
FRI 10 APR			**Good Friday Holiday**
MO 13 APR			**Easter Monday Holiday**
WE 15 APR	4:30	39	Obligatory myiasis
TH 16 APR	4:30	40	Fleas
FRI 17 APR	**8:30 & 10:30**		**Lab # 9 (Lungworms, Heartworms & Flies)**
MO 20 APR	4:30	41	Fleas (continued)
TU 21 APR	4:30	42	Lice, True Bugs & Pentastomes (Dr. P)
WE 22 APR	4:30	43	Introduction to Arachnids
TH 23 APR	4:30	44	Ticks (continued)
FRI 24 APR	**8:30 & 10:30**		**Lab # 10 (Myiasis, Fleas, Lice, True Bugs & Pentastomes) – TAKE HOME QUIZ # 5 (due April 27 @ 4:30)**
MO 27 APR	4:30	45	Mites
TU 28 APR	4:30	46	Mites (continued)
TU 28 APR	4:30	47	Final Exam Review
APRIL 30	**1:30**		**PARASITOLOGY FINAL EXAMINATION – 50 Questions (50 points)**

XIII. Grading and Assessment Policy:

There will be 2 quizzes (from 1:30 to 2:10; see the dates in the orientation schedule). Each quiz is worth 20 points (20 questions @ 1 point each). The format will consist of multiple-choice questions (Examplify format). Some questions may require visualization of an image to answer.

The midterm examination (40 questions @ 1 point each) and the final examination (50 questions @ 1 point each). Refer to the course orientation schedule for the dates. The midterm and final examinations will be multiple choice questions (Examplify format) in which some of the questions may require visualization of an image to answer.

There will be five Take Home Quizzes: These quizzes will be given during the laboratory session (check the orientation schedule above for the dates). We will assign five students per group based on alphabetical order to allow us to enter grades quickly on Sakai. ***The take home quizzes will be clinical cases, multiple-choice questions, matching questions or short answer formal. Some questions may require visualization of an image to answer. These are formative quizzes and will be open book encouraging each student to participate in the exercise to answer the questions correctly. The due dates are indicated in the course orientation schedule. Each quiz is worth 2 points = 10 points.***

Grading Policy: EACH LAB SESSION IS MANDATORY. ATTENDANCE WILL BE TAKEN. IF YOU MISS THREE LABS WITH NO APPROVED EXCUSE, YOU WILL HAVE ONE POINT DEDUCTED FROM YOUR GRADE.

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: In preparing for the laboratory each week, keep in mind the following suggestions to help you in your studies:

1. **It is important that you attend and actively participate in all laboratory exercises.** ***Attendance is mandatory and will be taken each laboratory session.*** **Answer the questions and outcomes/objectives in your lab manual each week.** 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.** If you happen to have or find parasites outside of the lab setting, bring them in to share with the class!

2. **Keep up with your work in class** 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. **Attending the DES help sessions will be helpful and is recommended.** 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: You are responsible for reading the laboratory manual prior to the lab and be prepared to answer all the questions in the corresponding lab manual. All students will be required to observe the laboratory demonstrations and/or participate in the wet lab exercises.

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 phone should be muted during lecture. 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 attend all classes and laboratory sessions for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly during lectures. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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@sgu.edu).

(473) 534-1982 (Dr. Pinckney's cell phone #)

***ALL LABORATORY SESSIONS ARE MANDATORY*. It is important that you attend your scheduled laboratory session unless there is an extenuatiating circumstance (e.g., medical excuse, doctor's appointment, death in the family or a pet, travel to a conference). Attendance will be taken each laboratory session. THREE UNEXCUSED ABSENCES FROM LAB WILL BE A ONE POINT DEDUCTION FROM YOUR GRADE. Excused absences to attend a wedding, meeting, etc. must be approved by the Dean of Students (DOS) office.**

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. 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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start

password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.

4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.

15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

    *No other personal belongings will be permitted.

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 parasie section (e.g., protozoans, cestodes, flukes, nematodes, insects, pentastomes and arachnids).

SVM Course Code: PTHB506 Pathology I, Term 3
Course Director: Brian Butler
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previously Scheduled Lectures/Readings/Labs:	*Updated Online Course: **(Sakai > Resources)**	Scheduled Timeline:	Assessment Schedule:
Hepatobiliary System Lectures: 1. Hepato 1 2. Hepato 2 3. Hepato 3 4. Hepato 4 5. Hepato 5 Review papers 1-3 Lab: 2-hour lab	Hepatobiliary System Lectures via Panopto: 1. Hepato 1 2. Hepato 2 3. Hepato 3 4. Hepato 4 Optional lectures (Panopto) 1. Hepato 5 - Review dogs 2. Hepato 5 – Gallbladder and Pancreas Review papers 1-3 Lab: Cancelled	**March 23-29**	Hepatobiliary assignment: (Assignment 2) Chronic liver disease. Hepatic lipidosis. • **Posted in Sakai > Assignments** • Open date: Mar 27 • Due date: Apr 03 • Point value: 15
Alimentary System Lectures: 1. Alim 1 2. Alim 2 3. Alim 3 4. Alim 4 5. Alim 5 6. Alim 6 7. Alim 7 Review papers 1-2 Lab: 2-hour lab	Alimentary System Lectures via Panopto: 1. Alim 1 2. Alim 2 3. Alim 3 4. Alim 4 5. Alim 5 6. Alim 6 Optional lectures (Panopto) 7. Alim 7 – Review Pigs, Dogs, Cats Review papers 1-2 Lab: Cancelled	**March 30 - April 20**	Alimentary assignment: (Assignment 3) Mechanisms of diarrhea. • **Posted in Sakai > Assignments** • Open date: Apr 14 • Due date: Apr 20 • Point value: 15

Integumentary System Lectures: 1. Integ 1 2. Integ 2 3. Integ 3 4. Integ 4 5. Integ 5 6. Integ 6 7. Integ 7 8. Integ 8 9. Integ 9 Lab: 2-hour lab x2	Integumentary System Lectures via Panopto: 1. Integ 1 2. Integ 2 3. Integ 3 4. Integ 4 5. Integ 5 6. Integ 6 7. Integ 7 8. Integ 8 9. Integ 9 Lab: Cancelled	**April 27 – May 7**	Integumentary assignment: (Assignment 4) • **Posted in Sakai > Assignments** • Open date: Apr 27 • Due date: May 04 • Point value: 15
Previous lectures: 21 Previous labs: 4	Revised lectures: 19 Revised labs: 0		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 150 *Total points breakdown:* • Quiz 15 points • Midterm 55 points • Final exam 60 points • Assignment 1 5 points • Assignment 2 5 points • Assignment 3 5 points • Assignment 4 5 points	Total points = 120 *Total points breakdown:* • Quiz 15 points* • Midterm 55 points* • Assignment 1 5 points* • Assignment 2 15 points • Assignment 3 15 points • Assignment 4 15 points *Already in gradebook

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to travel time, illness time, and unforeseen circumstances, it is expected that LO's will be prioritized for clinical competency as necessary. Due to time limitations created by the pandemic, some course content has been delivered as OPTIONAL and will not be included in your graded assignments and final exam. This optional content includes the following learning outcomes:

1. Evaluate and understand the pathogenesis and pathophysiology for diseases of the exocrine pancreas.

2. Evaluate and understand the pathogenesis and pathophysiology for diseases of the gall bladder.

3. Evaluate and understand the pathogenesis and pathophysiology for diseases of the peritoneum, omentum, and mesentery.

4. Recognize and examine paraneoplastic skin conditions.

Please note: These learning outcomes can be emphasized in later terms to be sure clinical competency is accomplished prior to graduation.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

PATHOBIOLOGY DEPARTMENT

***PATHOLOGY I - SYLLABUS* (4 credits)**

PTHB506, TERM 3

Spring 2020

I. Course 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. Diane Stone, DVM, PhD, *Professor*, dstone@sgu.edu
   iii. 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

a. Lecture Hall: Ray and Jan Sis Hall
b. Laboratory: Microbiology Lab, SVM

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 (texts, journal articles, course notes, laptop specs, etc.)

Course materials provided in My Courses > Resources: Lecture notes, lecture slides, laboratory worksheets, and journal articles

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

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

VI. Special accommodation

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

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

VII. Other requirements

Required personal items for laboratory: White lab coats, closed-toed shoes, and latex gloves

VIII. Course rationale (catalogue course description)

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. This course serves as an introduction to the discipline and service of veterinary pathology. In this course, Term 3 DVM students are expected to integrate knowledge from multiple disciplines (anatomy, physiology, embryology, histology, microbiology, virology, parasitology, etc.) and develop their aptitude for conceptual learning and problem-based medicine. During the first half of the course students will learn the fundamental mechanisms of tissue injury and disease (General Pathology). The second half of the course will take a systematic approach focused on individual organ systems and their respective diseases (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 focused on content review and formative assessment in preparation for exams. The remaining sections of Systems Pathology are covered in the Term 4 course, Pathology II. In addition, students will also receive an introduction to the clinical service of diagnostic pathology and the relevance of this service to their clinical careers.

IX. Course level outcomes (Instructor's view of course goals)

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. The overall goal of this course is to provide students with a solid understanding of veterinary disease as it relates to lesion development, clinical signs, diagnostic strategy, and clinical outcomes. By utilizing student-directed learning and flipped classroom teaching methods, it is expected that students will foster independent learning which will benefit their clinical careers.

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

1. Apply a working vocabulary for the language of pathology, and know how to use pathological terminology correctly. Practice communication skills as they relate to the language of pathology in a clinical setting.
2. Examine the principle mechanisms of disease at the whole body, cellular, and molecular levels (general pathology). Integrate knowledge about the principle mechanisms of disease into clinical case-based scenarios.
3. Recognize, describe, and interpret gross and 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. Detailed course content: Lesson and Laboratory Level Outcomes (LLO)

Please refer to the appended table for Lecture Level Outcomes (LLO) at the end of this document.

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

CLO	SVM Program Level Outcome
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.

XII. Course Schedule

Please refer to your term's master schedule for specific dates and times.

	Lecturer	Lecture Topic
1	Butler	Introduction to Pathology: Discipline, Service, and Career opportunities
2	Butler	Cellular injury, adaptation, and death 1
3	Butler	Cellular injury, adaptation, and death 2
4	Wilkerson	Fluid dynamics, circulation, and vascular disorders 1
5	Wilkerson	Fluid dynamics, circulation, and vascular disorders 2

6	Marancik	Inflammation 1; overview and vascular responses
7	Marancik	Inflammation 2; cellular components
8	Marancik	Inflammation 3; chemical mediators
9	Marancik	Inflammation 4; classification of exudates
10	Marancik	Inflammation 5; morphologic diagnoses
11	Marancik	Inflammation 6; systemic and local effects
12	Marancik	Inflammation 7; Clinical Case Study 1
13	Marancik	Inflammation 8; healing and repair
14	Marancik	Inflammation 9; immunocompetency and immunodeficiency
15	Marancik	Inflammation 10; Clinical Case Study 2
16	Stone	Neoplasia 1
17	Stone	Neoplasia 2
18	Stone	Neoplasia 3
19	Stone	Neoplasia 4
20	Stone	Neoplasia 5
21	Butler	Infectious disease 1
22	Butler	Infectious disease 2
23	Butler	Gross pathology: postmortem change, lesion description, and morphologic diagnoses
24	Butler	Active learning – Morphologic diagnoses
25	Butler	Surgical Pathology: Introduction to biopsy service
26	Butler	Alimentary 1
27	Butler	Alimentary 2
28	Butler	Alimentary 3
29	Butler	Alimentary 4
30	Butler	Alimentary 5
31	Butler	Alimentary 6
32	Butler	Alimentary 7
33	Butler	Hepatobiliary 1
34	Butler	Hepatobiliary 2
35	Butler	Hepatobiliary 3
36	Butler	Hepatobiliary 4
37	Butler	Hepatobiliary 5
38	Butler	Urinary 1
39	Butler	Urinary 2
40	Butler	Urinary 3
41	Butler	Urinary 4
42	Butler	Urinary 5
43	Butler	Urinary 6
44	Butler	Integumentary 1
45	Butler	Integumentary 2
46	Butler	Integumentary 3
47	Butler	Integumentary 4
48	Butler	Integumentary 5
49	Butler	Integumentary 6
50	Butler	Integumentary 7

51	Butler	Integumentary 8
52	Butler	Integumentary 9
53	Butler	Review

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

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.

a. Grading scale. *Please refer to the SVM Student Manual.*

b. Types of assessment.

i. There will be **three** written examinations for the course.

ii. The written examinations will consist of multiple choice questions (MCQ's) administered through ExamSoft.

iii. **The examinations will cover the material described in the lectures, study outlines, laboratory sessions, out-of-class lessons, and reading assignments.**

iv. Assessment breakdown:

• Quiz	15 points
• Midterm exam	55 points
• Final exam	60 points
• Assignment 1	5 points
• Assignment 2	5 points
• Assignment 3	5 points
• Assignment 4	5 points
Total	150 Points

XIV. Recommended study strategies

a. Know the syllabus

b. Know the learning outcomes for each lecture and lab

c. Pre-read material before lectures and labs and be sure to know all new vocabulary before class

d. Be sure to complete all out-of-class lessons and assignments prior to in-class sessions with instructor (applies to flipped classroom – systems pathology)

e. Learning through repetition

i. Self study

ii. Group study

f. Participate in class and ask questions when you don't understand something.

XV. Instructor's expectations of the student

The student is expected to review learning outcomes and provided course content BEFORE the scheduled lectures and laboratory sessions. Every student is

expected to participate in active learning assignments, exercises, and prescribed readings. All students are expected to complete all lessons and assignments prior to in-class sessions.

XVI. Professionalism statement

Please refer to SVM Student Manual.

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

a. Lecture attendance policy: Attendance is strongly recommended and expected. Attendance is mandatory for all in-class sessions during flipped classroom.

b. Laboratory session attendance policy: Attendance is **mandatory** and required to receive credit for the two laboratory sessions. 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.

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

a. Please refer to the SVM Student Handbook.
b. Please consult the Dean of Students Office directly for details and procedures if you may need to miss an examination in this course.
c. Make-up examinations are at the discretion of the Course Director and may be oral, essay, or short answer.

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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
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8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

c. **Prior to 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. Students are permitted to download exams only in the examination venue and not in
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter

21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
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36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to
37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
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40. attempting to disable or tamper with SofTest's security features will be subject to
41. academic disciplinary action.
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    - SGU ID
    - Completely clear (see-through) bottle of plain water
    - Items specified by Course Director or permitted by Dean of Students (DOS) office

*No other personal belongings will be permitted.

XX. Copyright policy

The materials (slides, handouts, pictures and videos) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and Administration of SGU. Students are free to duplicate these materials solely for the purpose of group or individual study. Any other reproduction in whole or in part is prohibited. Students that do not respect this policy will be charged with academic dishonesty which may result in dismissal.

Detailed course content: Lecture Level Learning Outcomes

Lec.	Topic	Learning Outcomes	CLO
1	Introduction to pathology	1. Demonstrate a general understanding for the discipline and specialty practice of pathology.	1
		2. Review and define specified terms relating to pathology.	1
		3. Review and explain the concept of pathogenesis.	1,6
		4. List a chronologic sequence of events for a specific veterinary disease (stepwise list of pathogenic events).	6
		5. Review and explain the concept of a pathognomonic lesion and provide examples in veterinary medicine.	1
		6. Discuss the relationship of pathology to clinical medicine (pathophysiology) and review the different types of diagnoses.	1,7
		7. Discuss the wide range of career opportunities offered in pathology.	1,4,5
2	Cellular injury, adaptation, and death	1. Differentiate the causes and consequences of cellular injury to cell membranes, mitochondria, and the nucleus.	2
		2. Describe the process of oxidative injury to cellular components and evaluate the overall significance of oxidative stress in the pathogenesis of disease.	2
		3. Explain the causes and consequences of DNA damage to the cell, and to the organism.	2 2
		4. Explain the causes and consequences of DNA damage to the cell, and to the organism.	2
		5. Explain the causes and consequences of the different types of physical injury to cells.	2 2
		6. Compare the mechanisms and outcomes of reversible and irreversible cell injury.	2
		7. Describe the causes and mechanisms of cell swelling (hydropic degeneration).	2
		8. Describe the mechanisms, morphologic features, and sequelae of necrosis.	2
		9. Describe the mechanisms, morphologic features, and sequelae of apoptosis.	2

		10. Compare and contrast the different mechanisms and outcomes for cellular adaptation to chronic injury.	
3	Fluid balance and disturbance	1. Differentiate the structural and functional characteristic of arteries, capillary types, veins, and lymphatics. 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. 3. Describe the four mechanisms of edema and able to provide causes of each. 4. Describe the gross and histopathologic appearance of edema. 5. List four types of body cavity fluids and potential causes and clinical consequences	1,2 1,2 1,2 1,2,3 1,2,6,7
4	Hemostasis and Thrombosis	1. Describe the role of primary and secondary hemostasis. Identify vitamin K dependent coagulation factors, factors of the intrinsic, extrinsic, and common pathways. 2. Describe causes of hemorrhage and thrombus formation. 3. Describe anti-thrombotic/anti-fibrinolytic mechanisms. 4. Describe the different types of thrombi. 5. Describe the removal processes of thrombi in vessels.	1,2 2,3,6 2,6 2,3,6 2,6
5	Blood flow homeostasis and disturbance	1. Describe hyperemia and explain pathologic changes you would expect in tissues. 2. Describe causes of passive venous congestion and pathologic changes in tissues for acute and chronic passive venous congestion. 3. Describe causes of decrease tissue perfusion. 4. Contrast the formation of red or pale infarcts in tissues. 5. Describe the development of shock, differentiate the mechanisms of anaphylactic, electroshock, and septic shock 6. Describe and contrast the stages of shock. 7. Identify clinical and morphologic features of shock.	1,2,6 2,7 2,6 2,6 2 2.7 2,3,6,7

6	Inflammation (1) Introduction to inflammation	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.	1,2,6 1,2,6 2,6
7	Inflammation (2) Cellular mediators	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.	1,2 1,2,6 3
8	Inflammation (3) Chemical mediators	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.	2 2,6 2,3
9	Inflammation (4) Exudates	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.	1,2,6 2,3,6 6,7 4,6
10	Inflammation (5) Morphologic diagnosis	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	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.	1,2,7 2.6 2,6
12	Inflammation (7) Healing and repair	1. Categorize how tissue repair differs depending on tissue type and injury.	1,2,6,7

		2. Describe when and how fibrosis occurs. 3. Recognize potential complications that can hinder effective healing.	2,6 6,7
13	Inflammation (8) Case Study 1	1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment.	1,2,3,6,7 1,2,3,6,7
14	Inflammation (9) Case Study 2	1. Evaluate a clinical case scenario. 2. Integrate your knowledge of inflammation to explain disease pathogenesis, pathophysiology, prognosis, and treatment.	1,2,3,6,7 1,2,3,6,7
15	Inflammation (10) Review with active learning	1. Review important concepts of inflammation.	6,7
16	Neoplasia (1)	1. Identify/recognize the types of growth disturbances that may precede neoplasia and the possible mechanisms/causes of these growth disturbances. 2. Given morphologic descriptions (written/pictures) of these growth disturbances, identify likely clinical presentations associated with them. 3. Given descriptions of clinical presentations, identify from a list the most likely of these growth disturbances responsible for the clinical presentation.	1,2,6 1,2,3,6,7 1,2,7
17	Neoplasia (2)	1. Given the gross and microscopic description (written and in pictures) of a tumor be able to recognize the name/classification of the tumor and be able to differentiate between benign and malignant tumors. 2. Given the name of a tumor and other relevant tumor diagnostic data, be able to recognize its characteristics, including its expected clinical behavior and possible causes, risk factors and metastatic potential and metastatic pathways. 3. Recognize the stages of initiation, promotion and progression of neoplastic transformation.	1,2,3,6 1,2,6,7 1,2,6
18	Neoplasia (3)	1. Given a description of a possible mechanism of carcinogenesis, be able to distinguish between genetic and epigenetic involvement 2. Be able to identify the primary genetic targets involved in carcinogenesis.	1,2,6 2 2,6

		3. Be able to distinguish between the tumor parenchyma and stroma and the importance of tumor stroma on the clinical presentation and behavior of a tumor.	
19	Neoplasia (4)	1. Given a clinical scenario (species, age, breed, sex, husbandry, symptoms, tumor type, etc.) be able to identify possible cancer risk factors and/or possible causes. 2. Be able to distinguish among the mechanisms of carcinogenesis causes by chemical, physical and microbial agents. 3. Given a clinical scenario and tumor type, be able to recognize possible direct and paraneoplastic effects of the tumor on the host.	1,2,7 2 2,7
20	Neoplasia (5)	1. Recognize evidence in support of both innate and acquire immune responses to transformed cells. 2. Understand the concept of tumor antigen and be able to Identify the major innate and acquired immune mechanisms that target transformed cells and those with current/potential use in immunotherapy. 3. Recognize the mechanisms tumors use to evade immune detection and immune responses.	2,6 2 2,6
21	Infection (1)	1. Review and classify the types of inflammation that are associated with different infectious organisms. 2. Evaluate and understand the basic concepts of infectious disease pathogenesis. 3. Evaluate and understand the mechanisms of virulence, host response, and lesion morphology, and clinical significance of **viral, bacterial, fungal, protozoal,** and **prion** diseases.	1,2,6 1,2,6 1,2,3,6,7
22	Infection (2)	1. Identify and analyze the pathogenesis and clinical significance of coinfections and infectious disease complexes. 2. Identify and analyze the pathogenesis and clinical significance of oncogenic infections. 3. Analyze the pathogenesis and importance of dysbiosis as it relates to inflammatory diseases. 4. Determine effective ways to stay current on emerging infectious diseases.	1,2,6,7 1,2,6 1,2,6 1,2

23	Gross Pathology	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.	1 1,3 3 1,3 1,3,4 1,5
24	Surgical Pathology	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.	1,7 1 1 1 1
25	Urinary (1)	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.	1,6 1,7 1,7 1,6 2 1,3,6,7
26	Urinary (2)	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 compartment of the kidney and each part of the nephron.	1,3,7 1,6

		3. Evaluate and understand how the glomerulus, tubules, interstitium, and renal vasculature respond to injury (basic pathogenesis). 4. Evaluate and understand the pathophysiology of glomerular disease.	1,6 1,6,7
27	Urinary (3)	1. Review the structure and function of the lower urinary tract with emphasis on vulnerabilities to injury and defense mechanisms. 2. Recognize and evaluate the responses to injury and lesion development within the lower urinary tract (pathogenesis). 3. Identify and evaluate the congenital diseases of the urinary system. 4. Evaluate and understand the pathogenesis and pathophysiology of renal glomerular disease. 5. Recognize which diseases are associated with the development of immune complex glomerulonephritis in different species.	1,6 1,3,6 1,6 1,3.6,7 6,8
28	Urinary (4)	1. Evaluate and understand the pathogenesis and pathophysiology of renal tubular diseases. 2. Identify and evaluate the most common nephrotoxins for different species of domestic animals and describe the pathophysiology for each. 3. Evaluate and understand the pathogenesis and pathophysiology of diseases of the renal **pelvis**. 4. Evaluate and understand the pathogenesis and pathophysiology of diseases of the renal **interstitium**. 5. Classify the different types of neoplastic tumors of the kidney and lower urinary tract. 6. Classify and evaluate the pathophysiology of congenital developmental anomalies of the lower urinary tract.	1,3,6,7 1,7 1,3,6,7 1,3,6,7 1,6 1,7
11129	Urinary (5, 6)	1. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in **horses**. 2. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in **ruminants**.	6,7,8 6,7,8 6,7,8

		3. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in **pigs**. 4. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in **cats**. 5. Evaluate and understand the pathogenesis and pathophysiology of urinary disease in **dogs**.	6,7,8 6,7,8
30	Hepatobiliary (1)	1. Review liver physiology and examine which structures of the liver are most vulnerable to various types of injury. 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. 3. Discuss and evaluate the concepts of hepatic functional reserve and hepatic failure. 4. Evaluate and understand how the liver responds to various types of injury (basic pathogenesis). 5. Review and classify the different causes of hyperbilirubinemia. 6. Identify the clinical indicators of hepatic failure. 7. Evaluate and understand the pathogenesis and pathophysiology of congenital liver diseases. 8. Compare and contrast the pathogenesis and pathophysiology of acute and chronic hepatitis and cholangitis. 9. Compare and contrast the pathogenesis of extrahepatic and intrahepatic cholestasis.	1,6 6 7 3,6 6,7 6,7 6,7 6,7 6
31	Hepatobiliary (2)	1. Evaluate and understand the pathogenesis and pathophysiology of the four types of circulatory disorders of the liver. 2. Evaluate and understand the pathogenesis and pathophysiology of liver diseases resulting from hepatocellular accumulations (lipid, glycogen, amyloid, copper, bile pigment, lysosomal dysfunction).	1,3,6,7 1,3,6,7
32	Hepatobiliary (3)	1. Evaluate and understand the pathogenesis and pathophysiology of the most common	1,3,6,7

		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.	1,3,6 1,6,7,8
33	Hepatobiliary (4)	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**.	1,6 6,7,8 6,7,8 6,7,8
34	Hepatobiliary (5)	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**.	6,7,8 6,7,8 6,7
35	Alimentary (1)	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.	1,6 6 1,3,6,7
36	Exam Review	NA	NA
37	Alimentary (2)	1. Review and understand normal tooth development and histogenesis. 2. Evaluate and understand the pathogenesis and pathophysiology for diseases of the teeth, tonsils, salivary gland, tongue, and esophagus.	1,6 1,6,7

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 epidermis to injury.	1,6 6 1,6 1,6
44	Integumentary (2)	1. Identify and evaluate the responses of the epidermis to injury (cont.).	1,6 1,6

		2. Identify and evaluate the responses of the dermis to injury. 3. Identify and evaluate the responses of the adnexa to injury.	1,6
45	Integumentary (3)	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)	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)	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)	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)	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)	1. Review the basic mechanisms of oncogenesis. 2. Review the significance of tumor cell morphology as it relates to accurate diagnosis of skin neoplasia. 3. Recognize and compare the morphologic features that distinguish benign neoplasia from malignant neoplasia.	1,6 6 3,6

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

SVM Course Code: __PTHB507_____
Course Director: ___Bhaiyat/Dores_____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Musculoskeletal Lectures: 1.Bone: Review of bone physiology 2.Bone: Response to injury, bone healing, inflammation 3.Bone: Abnormalities of Bone Growth and Development 4.Bone: Metabolic Bone diseases 5.Bone: Metabolic Bone diseases 6.Bone: Ischemic diseases. 7.Joints: Developmental and degenerative diseases, Response to injury, Inflammatory/ Infectious 8.Muscle: Ischemic disorders. Response to injury and Nutritional disorders 9.Muscle: Nutritional and Metabolic disorders 10.Muscle: Metabolic and Infectious diseases 11. Auburn Rounds 12. Musculoskeletal Lab	Musculoskeletal Lectures via Panopto: 1. Bone: Physiology and response to injury, bone healing, inflammation 2. Bone: Bone healing, inflammation 3. Bone: Abnormalities of Bone Growth and Development 4. Bone: Metabolic Bone diseases 5. Bone: Metabolic Bone diseases 6. Bone: Ischemic diseases. Joints: Developmental and degenerative diseases, Response to injury, Inflammatory/ Infectious 7. Muscle: Ischemic disorders. Response to injury and Nutritional disorders 8. Muscle: Nutritional and Metabolic disorders 9. Muscle: Metabolic and Infectious diseases	March 23-27 March 30 -April 3	Multiple Choice Questions [Due Date – April 10th [20 points]

Cardiovascular 1. Physiology, developmental diseases 2. Cardiac injury and response to injury(degeneration, infiltration, necrosis/apoptosis and mineralization). Circulatory Disturbances 3. Inflammation 4. Disturbances of growth, cardiomyopathies 5. Neoplasia 6. Blood Vessels and Lymphatics 7. Auburn Rounds 8. Cardiovascular lab	Cardiovascular 1. Physiology, developmental diseases 2. Cardiac injury and response to injury(degeneration, infiltration, necrosis/apoptosis and mineralization). Circulatory Disturbances 3. Inflammation 4. Disturbances of growth, cardiomyopathies 5. Neoplasia 6. Blood Vessels and Lymphatics	April 6th -13th	Multiple Choice Questions Due Date: April 20th Points 15
Respiratory 1. Upper Respiratory tract 2. Lungs: Introduction, Postmortem changes, Pigmentation, Circulatory disturbances 3. Inflammation 4. Specific infectious pneumonias 5. Specific infectious pneumonias 6. Miscellaneous diseases 7. Neoplastic disease/proliferative conditions 8. Pleura 9. Auburn Rounds	Respiratory 1. Upper Respiratory tract 2. Lungs: Introduction, Postmortem changes, Pigmentation, Circulatory disturbances 3. Inflammation 4. Specific infectious pneumonias 5. Specific infectious pneumonias 6. Miscellaneous diseases 7. Neoplastic disease/proliferative conditions 8. Pleura	April 14 -24th	Multiple Choice Questions Due Date: May 1st Points 25
Female Reproductive Pathology Lectures: 1. Disease of Sexual Development	Female Repro Pathology Lectures via Panopto: 1. Disease of Sexual Development	April 27 -May1	Multiple Choice Questions Due Date: May 10th Points 25

2. Ovaries and Uterine Tubes 3. Uterus_ 4. Vagina, Vulva and Mammary Glands 5. Abortions 6. Abortions 7. Exotics 8. Auburn Rounds Labs 1. Clinical Cases	2. Ovaries and Uterine Tubes 3. Uterus 4. Vagina, Vulva and Mammary Glands 5. Abortions		
Male Reproductive Pathology Lectures: 1. Developmental, inflammatory and neoplastic diseases of the testicles and epididymis 2. Developmental, inflammatory and neoplastic diseases of the male accessory glands, penis and scrotum	[Course Topic/Module] Lectures via Panopto: 1. Developmental, inflammatory and neoplastic diseases of the testicles and epididymis 2. Developmental, inflammatory and neoplastic diseases of the male accessory glands, penis and scrotum	May 4 May 8th	Multiple Choice Questions Due Date: May 15th Points 15
Total lectures: 37 Labs: 4	Total lectures (Panopto): 30		Total point 100

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 180 *Total points breakdown:* 1. Quiz 1 20 Points 2. Mid-term 60 Points 3. Quiz 2 25 Points 4. Final 75 Points	Total points =170 *Total points breakdown:* 1. Quiz 1 20 Points (Lymphoid) 2. Mid-term 50 Points (Endo/Neuro) 3. Quiz 2 20 points (Muscle/Bone) 4. Quiz 3 15 points (Cardio) 5. Quiz 4 25 points (Respiratory) 6. Quiz 5 25 points (Female Repro) 7. Quiz 6 15 points (Male Repro)

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Auburn Rounds: Case discussion and gross lesions from the musculoskeletal, reproductive, cardiovascular and respiratory systems
2. Laboratory sessions: Case discussion, histopathology and identification of gross lesions

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF PATHOBIOLOGY

VETERINARY PATHOLOGY II SYLLABUS (5 credits)

PTHB 507, TERM 4

Spring 2020

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF PATHOBIOLOGY

***VETERINARY PATHOLOGY II SYLLABUS* (5 credits)**

PTHB 507, TERM 4

Spring 2020

I. Course Faculty and Staff Information

a. Course Directors:

i. Dr. M. I. Bhaiyat, BVM, PhD; Professor (Vet. 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, MS, 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. Office hours will be arranged to fit the class schedule.

2. Open door policy and additional office hours can be made by appointment.

3. Arrangements can be made with the Technical Staff to have the Laboratory open after office hours and during weekends for your review of lessons.

b. Other faculty members:

i. Dr. A. Chikweto, BVM, MSc; Associate Professor (Vet. Pathology - Necropsy)

1. e-mail: <achikweto@sgu.edu>

2. Tel.: 444-4175, EXT. 3345

c. Visiting Professor:
   i. Dr. J.C. Newton, DVM, PhD; Professor (Vet. Pathology)
      1. Dept. of Pathobiology, College of Veterinary Medicine, Auburn University, AL
      2. e-mail: <newtojc@auburn.edu>

d. 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
   iii. Mr. Ray Samuel; Laboratory Technician (Necropsy)
      1. e-mail: <rsamuel@sgu.edu>
      2. Tel.: 444-4175, EXT. 3570
   iv. Ms. Ava McIntyre; Laboratory Technician (Necropsy)
      1. e-mail: <amcinty4@sgu.edu>
      2. Tel.: 444-4175, EXT. 3570
   v. Ms. Veronica Mapp-Alexander; Laboratory Technician (Histopathology)
      1. e-mail: <vmappal1@sgu.edu>
      2. Tel.: 444-4175, EXT. 3415

e. Class Coordinator:
   i. Olivia Valente
      1. e-mail: <ovalente@sgu.edu>
      2. Tel.: N/A

II. Course location

a. Lectures: Ray & Jan Sis Hall East (RJSH-2), Lower True Blue Campus
b. Necropsy: Postmortem Room, Lower True Blue Campus (Behind Anatomy Lab)
c. Labs: Charter Hall Lab
d. Auburn Necropsy Demos: RJSH East (RJSH-2), Lower True Blue Campus

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. Course notes on topics of Systemic Pathology

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. 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. Laboratory/classroom regulations
   i. You are requested to wear clean white full-length laboratory coats and identification badges, during the laboratory session. The laboratory coat should only be worn in the laboratories.
   ii. You will get a laboratory manual for the course. A brief description of pathological conditions has been given in the manual. The slides in the class set to be studied correspond to the descriptions.
   iii. A set of pathological slides contained in slide box is made available to you in each laboratory session. You shall be responsible for damage/misplacement of your slide set.
   iv. At the end of laboratory session, the glass slides must be returned to the slide box and left on the bench ready for collection by the laboratory staff. Glass slides should never be left mounted on the microscope.
   v. Laboratory stools/chairs must be placed in proper order at the end of the class.
   vi. The learning resources like microscopes, videos, VCR, glass slides etc. are expensive and limited in number. Care should be taken not to damage them to ensure their safety for future use.
   vii. Leave your working place clean and tidy after the laboratory session.
   viii. Wash your hands thoroughly before leaving the laboratory.
   ix. "Open toe" footwear is NOT permitted in the laboratory (covered or closed-toe shoes are required).
   x. Smoking is NOT permitted in the laboratory or classroom.
   xi. Eating or drinking (except water) is strictly prohibited in the lecture hall and laboratory.

b. For the necropsy laboratory, the protective attire will include scrubs and protective rubber footwear (boots).
    i. Before entering the necropsy area, DVM students, faculty, and staff will:
        1. Put on scrubs, rubber boots, and a waterproof apron.
        2. Those who are only observing the necropsy procedure will put on white laboratory coats over the scrubs.
    ii. When working in the necropsy room, DVM students and Faculty will put on gloves and a face mask.
    iii. When leaving the necropsy room:
        1. Aprons will be left in the necropsy area for laundering; other protective wear like face masks and gloves will be disposed of in the disposal bins within the necropsy area.
        2. Footwear should be cleaned thoroughly in the necropsy area and immersed in the footbath on exit.
        3. Normal attire should be put on using the room for changing clothes and the students should take their scrubs home in a plastic bag for laundering. Faculty will leave their scrubs for laundering in the necropsy facility.

VIII. Course rationale

a. The objective of the course is to make the student familiar with the functional and morphological changes that underlie the clinical presentation of animal diseases. In this context, the course specifically describes how the basic knowledge acquired in general pathology applies to each of the systems, and that with a perspective across species.
b. This course will equip you with necessary knowledge for the practice of meat inspection and also for the better understanding of clinical aspects of diseases thus being able to:
    i. Describe the gross (naked eye) and microscopic pathological changes in different body systems resulting from various etiological agents.
    ii. Make diagnosis and differential diagnosis of diseases based on pathological findings.
c. Emphasis is placed on pathogenesis, pathophysiology, and morphologic changes at the macroscopic, microscopic, and molecular levels.
d. In lecture, general mechanisms for major types of disease processes are stressed.
e. The laboratory serves 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. Necropsy techniques will be taught during the course with an aim to provide you with a fundamental diagnostic ability, while performing the necropsies.

IX. Course-level outcomes

a. On successful completion of the course, you should be able to:

i. Describe the etiology, pathogenesis, structural and functional manifestations of diseases that affect specific organ systems of the body and to be able to place specific diseases in context with their prevalence, morbidity and mortality in society as a whole.
ii. Develop a vocabulary with which to communicate this knowledge to others.
iii. Recite the natural course of specific disease states and the results of interventions by the clinician.
iv. Demonstrate skill in laboratory test selection and interpretation so as to make judicious and cost-effective use of the clinical laboratory to solve clinical problems.
v. Relate anatomic alterations induced by specific diseases to their clinical findings.
vi. Appreciate how medical knowledge is acquired, evaluated and disseminated so as to be able to critically analyze current medical issues and future advances.
vii. Describe how pathology as a clinical specialty is essential to the proper practice of clinical medicine.

X. Lesson-level outcomes

a. This is a five-credit course taught in the 4th term of the undergraduate program. It consists of **lectures** and **practical work**. The course will be taught in **60 lectures**, each of one-hour duration and **12 laboratory sessions**, each of 1.5 hours.
b. The course during the term includes the study of the pathology of the Lymphatic, Endocrine, Nervous, Respiratory, Reproductive, Cardiovascular, Special senses (Eye/Ear), Muscular, and Skeletal systems.
c. Lectures will emphasize basic principles and explain the concept of the subject. Attempts shall be made to augment the explanation with the aid of relevant teaching materials. Laboratory sessions will include study of *Histopathological Slides*, *Postmortem examination* and *Case Discussions.*
d. When appropriate, ***Necropsies*** will be incorporated into the schedule. The recognition and description of gross changes in tissues will assist you to correlate them with disease processes.
e. Live demonstrations and/or Videotape demonstrations of *Necropsies* in collaboration with the Department of Pathobiology, College of Veterinary Medicine, Auburn University, Alabama, USA will be presented weekly (**Thursdays** at **11:30 AM** in RJS Hall 2.
f. Where applicable, **Case discussion** sessions will be organized in association with the necropsies.
g. See the Lecture and Lab schedule (Section XII, page 12)

XI. Alignment of Course Learning Objectives with Program Learning Objectives / Competencies (will be required upon curriculum mapping completion)

a. Alignment “Not applicable at this time”. Will be done upon completion of curriculum mapping.

b. Lesson and Laboratory Level Outcomes

i. Pathology of the **lymphoid** system

1. Recall the formation of lymphoid cells and the role of their regulatory factors.
2. Recall the function and architecture of the lymphoid system.
3. List the primary and secondary lymphoid organs.
4. Recall the function and the architecture of the thymus.
5. Describe the lesions of the thymus and the diseases causing them.
6. Recall the function and the architecture of the spleen.
7. Describe the lesions of the spleen and the diseases causing them.
8. Recall the function and architecture of the lymph node.
9. Describe the lesions that affect the lymph node and the diseases causing them.

ii. Pathology of the **hemopoietic** system (already covered in Clinical Pathology)

1. Describe the formation of blood cells and the role of their regulatory factors.
2. Recall the morphology of developing erythrocytes and the function of mature erythrocytes.
3. Explain the classification of anemias and the mechanisms causing the different types of anemias and give examples of each type.
4. Recall the morphology of developing leukocytes and understand the functions of mature granulocytes, monocytes and lymphocytes.
5. Outline the abnormalities of leukocytes and some of the conditions associated with them.
6. Describe the myeloproliferative and lymphoproliferative disorders and discuss the blood and bone marrow findings associated with them.
7. Describe the role of platelets, coagulation factors and vascular endothelium in the normal hemostatic mechanism.
8. Discuss, giving examples, the development of acquired and hereditary coagulopathies.
9. List the disorders of the platelets.

c. 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.

d. 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 bovine, equine, dog, 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.

e. 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.

f. Pathology of the **female reproductive** system
i. List the major developmental anomalies of the female reproductive system.
ii. Discuss the concepts of hermaphroditism and pseudo-hermaphroditism.
iii. List the causes of early embryonic death and abortion.
iv. Demonstrate the consequences of fetal death.
v. Discuss the hormonal abnormalities leading to cystic ovarian diseases and to depression of normal ovarian activity in cattle.
vi. Describe the lesions that may occur in the fallopian tube.
vii. List the inflammatory changes and neoplasms of the uterus and understand the development of the cystic endometrial hyperplasia-pyometra complex.
viii. List the inflammatory and neoplastic diseases of the cervix and vagina.

g. Pathology of the **male reproductive** system
i. List the major developmental anomalies of the male reproductive system.
ii. Describe the degenerative, inflammatory and neoplastic changes of the testes.
iii. List the main lesions of the epididymis and the accessory sex glands.
iv. List the inflammatory, hyperplastic and neoplastic abnormalities occurring in the prostate gland.
v. List the main lesions of the scrotum, penis and prepuce.

h. Pathology of the **mammary gland**
i. Describe the pathogenesis of mastitis in the cow.

ii. Describe the pathology of acute and chronic mastitis.
iii. List the main infectious agents associated with mastitis in animals.
iv. Assess the consequences of mastitis.
v. Describe the main types of mammary tumors, which occur in domestic animals.
vi. Identify the factors that can influence the development of mammary neoplasia.
vii. Demonstrate the role of pathology in determining the prognosis and choice of treatment of mammary tumors in domestic animals.

i. 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.

j. Pathology of the **special senses (eye/ear)**
   i. Define the common terms used in referring to diseases of the eye and ear.
   ii. Discuss the spectrum of inherited and congenital abnormalities which occur in the eye and ear.
   iii. Correlate how disease starting in one part of the eye can have effects throughout the globe.

iv. List the causes and outline the consequences of conjunctivitis and ulcerative keratitis.
v. List the causes and outline the consequences of uveal tract infection.
vi. List the causes and outline the consequences of retinal diseases.
vii. Enumerate the predisposing factors which contribute to inflammation in the external ear and outline the consequences of spread of inflammation to the middle and internal ear.
viii. Describe the main tumors of the eye and ear which occur in domestic animals.

k. Pathology of the **muscular** system
i. List of the responses of muscle to injury.
ii. List the causes, and describe the consequences, of muscle atrophy.
iii. Discuss the different reasons for muscle hypertrophy.
iv. Classify the types of muscle disease and discuss the etiology, pathogenesis, lesions, and sequelae of the types of myopathies (degenerative, inflammatory, congenital/inherited, endocrine, electrolyte, neuropathic, neuromuscular junction, neoplasia [$DICE_2N_3$]).
v. List the common causes of myositis including the pathogenesis, lesions, and sequelae.
vi. Explain the effects of trauma on muscles.
vii. List the common tumors of muscles.

l. Pathology of the **skeletal** system
i. Describe how bone reacts to injury.
ii. Describe the stages in healing of a fracture.
iii. Enumerate the factors which delay healing of a fracture.
iv. List the common examples of congenital skeletal abnormalities.
v. Describe the pathogenesis and consequences of metabolic bone disease (deficiency of, and excess, mineralized bone).
vi. Describe the pathogenesis and consequences of necrosis of bone (osteosis).
vii. Describe the pathogenesis and consequences of inflammation of the bone.
viii. Describe the pathogenesis and consequences of toxic bone disease.
ix. List the common bone tumors of domestic animals.
x. Describe the reaction of the joint to injury.
xi. Describe the common forms of infectious and non-infectious arthritis in domestic animals.
xii. Describe the pathogenesis and consequences of degenerative joint disease.

xiii. Describe the pathogenesis and consequences of degeneration of intervertebral discs.
xiv. Describe how tendons react to injury giving examples of the most common diseases of tendons.

m. Laboratory: **Necropsy** procedures
i. Discuss the reasons for carrying out the necropsy.
ii. Recognize and understand the reasons for post-mortem change in organs and tissues.
iii. Carry out a post-mortem examination on a small domestic animal including removing the brain and opening the heart methodically.
iv. List what samples can be taken from a post-mortem examination of an animal for histopathology laboratories, microbiology laboratories, parasitology laboratories, toxicology laboratories and biochemical laboratories.
v. Describe how to take post-mortem samples and send tissues for histopathological examination to a laboratory.
vi. Describe how to take surgical specimens for histopathological examination and how to send them to a laboratory.
vii. Identify and describe common pathological lesions as seen in animals post mortem or in organs that have been removed from an animal's body.
viii. Assess the clinical significance of common pathological lesions as seen in animals postmortem or in organs removed from the animal.
ix. Predict the public health implications of some of the lesions that can be found postmortem.

XII. Course Schedule

LECTURE SCHEDULE FOR VETERINARY PATHOLOGY II, TERM 4 SPRING 2020

Week	Lecture	Day	Date	Time	Lecturer	Lecture Topic
1	1	Monday	20-Jan	8:30 AM	Bhaiyat	Lymphoid System
	2	Tuesday	21-Jan	8:30 AM	Bhaiyat	Lymphoid System
	3	Wednesday	22-Jan	8:30 AM	Bhaiyat	Lymphoid System
	4	Thursday	23-Jan	8:30 AM	Bhaiyat	Lymphoid System
2	5	Monday	27-Jan	8:30 AM	Bhaiyat	Lymphoid System
	6	Tuesday	28-Jan	8:30 AM	Bhaiyat	Lymphoid System
	7	Wednesday	29-Jan	8:30 AM	Bhaiyat	Endocrine System
	8	Thursday	30-Jan	8:30 AM	Bhaiyat	Endocrine System
3	9	Tuesday	4-Feb	8:30 AM	Bhaiyat	Endocrine System
	10	Wednesday	5-Feb	8:30 AM	Bhaiyat	Endocrine System
	11	Thursday	6-Feb	8:30 AM	Bhaiyat	Endocrine System
		Friday	**7-Feb**		**Grenada Independence Day Holiday**	

4		**Monday**	**10-Feb**	**8:30 AM**	**Pathology II, Quiz 1**	
	12	Tuesday	11-Feb	8:30 AM	Bhaiyat	Nervous System
	13	Wednesday	12-Feb	8:30 AM	Bhaiyat	Nervous System
	14	Thursday	13-Feb	8:30 AM	Bhaiyat	Nervous System
		Thursday	13-Feb	11:30 AM	Bhaiyat	Auburn Necropsy Round
		Friday	14-Feb	-	-	-
5		**Monday**	**17-Feb**	**8:30 AM**	**Epidemiology Final Examination**	
	15	Tuesday	18-Feb	8:30 AM	Bhaiyat	Nervous System
	16	Wednesday	19-Feb	8:30 AM	Bhaiyat	Nervous System
	17	Thursday	20-Feb	8:30 AM	Bhaiyat	Nervous System
		Thursday	20-Feb	11:30 AM	Bhaiyat	Auburn Necropsy Round
	18	Friday	21-Feb	10:30 AM	Bhaiyat	Nervous System
6	19	Monday	24-Feb	8:30 AM	Bhaiyat	Nervous System
	20	Tuesday	25-Feb	8:30 AM	Bhaiyat	Nervous System
	21	Wednesday	26-Feb	8:30 AM	Bhaiyat	Eye
		Thursday	27-Feb	11:30 AM	Bhaiyat	Auburn Necropsy Round
	22	Friday	28-Feb	8:30 AM	Bhaiyat	Eye
7	23	Monday	2-Mar	8:30 AM	Bhaiyat	Eye
	24	Tuesday	3-Mar	8:30 AM	Bhaiyat	Eye
	25	Wednesday	4-Mar	8:30 AM	Bhaiyat	Ear
	26	Thursday	5-Mar	8:30 AM	Bhaiyat	Ear
		Thursday	5-Mar	11:30 AM	Bhaiyat	Auburn Necropsy Round
		Friday	6-Mar	-	-	-
8		**Monday**	**9-Mar**	**8:30 AM**	**Pathology II Mid-Term Exam**	
		Tuesday	**10-Mar**	**8:30 AM**	**VPH Mid-Term Examination**	
		Wednesday	**11-Mar**	**8:30 AM**	**Anesthesiology Mid-Term Exam**	
		Thursday	**12-Mar**	**8:30 AM**	**AFEAD Mid-Term Exam**	
		Friday	**13-Mar**	**8:30 AM**	**Intro Clin Med Mid-Term Exam**	
9	27	Monday	16-Mar	8:30 AM	Newton	Muscular System
	28	Tuesday	17-Mar	8:30 AM	Newton	Muscular System
	29	Wednesday	18-Mar	8:30 AM	Newton	Muscular System
	30	Thursday	19-Mar	8:30 AM	Newton	Muscular System
		Thursday	19-Mar	11:30 AM	Bhaiyat	Auburn Necropsy Round
	31	Friday	20-Mar	8:30 AM	Newton	Muscular System
10	32	Monday	23-Mar	8:30 AM	Newton	Skeletal System
	33	Tuesday	24-Mar	8:30 AM	Newton	Skeletal System
	34	Wednesday	25-Mar	8:30 AM	Newton	Skeletal System
	35	Thursday	26-Mar	8:30 AM	Newton	Skeletal System
	36	Friday	27-Mar	8:30 AM	Newton	Skeletal System

11	37	Monday	30-Mar	8:30 AM	Bhaiyat	Cardiovascular System
	38	Tuesday	31-Mar	8:30 AM	Bhaiyat	Cardiovascular System
	39	Wednesday	1-Apr	8:30 AM	Bhaiyat	Cardiovascular System
	40	Thursday	2-Apr	8:30 AM	Bhaiyat	Cardiovascular System
		Thursday	2-Apr	11:30 AM	Bhaiyat	Auburn Necropsy Round
	41	Friday	3-Apr	8:30 AM	Bhaiyat	Cardiovascular System
12		**Monday**	**6-Apr**	**8:30 AM**	**AFEAD Final Examination**	
	42	Monday	6-Apr	10:30 AM	Bhaiyat	Cardiovascular System
	43	Tuesday	7-Apr	8:30 AM	Bhaiyat	Respiratory System
	44	Wednesday	8-Apr	8:30 AM	Bhaiyat	Respiratory System
	45	Thursday	9-Apr	8:30 AM	Bhaiyat	Respiratory System
		Thursday	9-Apr	11:30 AM	Bhaiyat	Auburn Necropsy Round
		Friday	**10-Apr**	-	**Good Friday Holiday**	
13		**Monday**	**13-Apr**	-	**Easter Monday Holiday**	
		Tuesday	**14-Apr**	**8:30 AM**	**Pathology II, Quiz 2**	
	46	Tuesday	14-Apr	9:30 AM	Bhaiyat	Respiratory System
	47	Wednesday	15-Apr	8:30 AM	Bhaiyat	Respiratory System
	48	Thursday	16-Apr	8:30 AM	Bhaiyat	Respiratory System
	49	Thursday	16-Apr	9:30 AM	Bhaiyat	Respiratory System
		Thursday	16-Apr	11:30 AM	Bhaiyat	Auburn Necropsy Round
	50	Friday	17-Apr	8:30 AM	Bhaiyat	Respiratory System
14	51	Monday	20-Apr	8:30 AM	Dores	Genital System
	52	Tuesday	21-Apr	8:30 AM	Dores	Genital System
	53	Wednesday	22-Apr	8:30 AM	Dores	Genital System
	54	Thursday	23-Apr	8:30 AM	Dores	Genital System
		Thursday	23-Apr	11:30 AM	Bhaiyat	Auburn Necropsy Round
	55	Friday	24-Apr	8:30 AM	Dores	Genital System
15	56	Monday	27-Apr	8:30 AM	Dores	Genital System
	57	Tuesday	28-Apr	8:30 AM	Dores	Genital System
	58	Wednesday	29-Apr	8:30 AM	Dores	Genital System
	59	Thursday	30-Apr	8:30 AM	Dores	Genital System
		Friday	**1-May**	-	**Labour Day Holiday**	
16		**Monday**	**4-May**	**8:30 AM**	**Pathology II Final Exam**	
		Tuesday	5-May	-	-	-
		Wednesday	**6-May**	**8:30 AM**	**Surgical Skills Final Exam**	
		Thursday	7-May	-	-	-
		Friday	**8-May**	**8:30 AM**	**VPH Final Examination**	
17		**Monday**	**11-May**	**8:30 AM**	**Anesthesiology Final Exam**	
		Tuesday	12-May	-	-	-
		Wednesday	**13-May**	**8:30 AM**	**Intro Clin Med Final Exam**	
		Thursday	14-May	-	-	-
		Friday	15-May	-	-	-

LABORATORY SCHEDULE FOR VETERINARY PATHOLOGY II TERM 4 SPRING 2020								
Week	**Lab**	**Day**	**Date**	**Time**	**Lecturer**	**Laboratory Topic**	**Venue**	**Group**
1		Thursday	23-Jan	-	-	-	-	-
				-	-	-	-	-
2	1	Thursday	30-Jan	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	A-1
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	A-2
3	2	Thursday	6-Feb	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	B-1
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	B-2
4	3	Thursday	13-Feb	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	A-2
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	A-1
5	4	Thursday	20-Feb	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	B-2
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	B-1
6	5	Thursday	27-Feb	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	A-1
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	A-2
7	6	Thursday	5-Mar	1:30 PM	Bhaiyat	Necropsy	Necropsy Lab	B-1
				3:00 PM	Bhaiyat	Necropsy	Necropsy Lab	B-2
8	-	**Monday**	**9-Mar**	**8:30 AM**	**Pathology II Mid-Term Examination**			
9	7	Thursday	19-Mar	1:30 PM	Newton	Musculoskeletal System	Charter Hall Lab	A-1 & A-2
10	8	Thursday	26-Mar	1:30 PM	Newton	Musculoskeletal System	Charter Hall Lab	B-1 & B-2
11	9	Thursday	2-Apr	1:30 PM	Bhaiyat	Cardiovascular System	Charter Hall Lab	A-1 & A-2
12	10	Thursday	9-Apr	3:30 PM	Bhaiyat	Cardiovascular System	Charter Hall Lab	B-1 & B-2
13	11	Thursday	16-Apr	1:30 PM	Dores	Reproductive System	Charter Hall Lab	A-1 & A-2
14	12	Thursday	23-Apr	1:30 PM	Dores	Reproductive System	Charter Hall Lab	B-1 & B-2
15		Thursday	30-Apr	-	-	-	-	-
				-	-	-	-	-
		Monday	**4-May**	**8:30 AM**	**Pathology II Final Examination**			
16	-	Tuesday	5-May	-	-	-		-
		Wednesday	**6-May**	**8:30 AM**	**Surgical Skills Final Examination**			
		Thursday	7-May	-	-	-		-
		Friday	**8-May**	**8:30 AM**	**VPH Final Examination**			
17	-	**Monday**	**11-May**	**8:30 AM**	**Anesthesiology Final Examination**			
		Tuesday	12-May	-	-	-		-
		Wednesday	**13-May**	**8:30 AM**	**Introd to Medicine Final Examination**			
		Thursday	14-May	-	-	-		-
		Friday	**15-May**	**8:30 AM**	**AFEAD Final Examination**			
18	-	**Thursday**	**21-May**	**1:00 PM**	**Academic Progress Committee Meeting**			

XIII. Grading and assessment policy, and grading rubrics

a. Qualitative deficiency:

SVM Satisfactory Academic Progress Guidelines: Qualitative Deficiency

Grades of "A", "B+"/"B", "C+"/ "C", and "P" refer to an Excellent Pass, Good Pass, Acceptable Pass and Pass, respectively. Grades of "D+", "D", and "F" are all unsatisfactory grades and require remediation.

Academic advancement will be based on satisfactory grades in all courses in the SGU SVM curriculum. Thus, no grade below a "C" will be allowed; all grades below a "C" must be remediated to a satisfactory grade of "C" or better.

Unsatisfactory grades of "D+" or "D" will result in a mandatory re-sit examination and a grade of "F" will require repeating the course.

Unsatisfactory grades of "D+" or "D" obtained when either the term or cumulative GPA is less than 2.0 will, in most cases, be remediated by repeat of the course(s) rather than by a re-sit examination.

Courses involving mastery of clinical skills may require repeating the course to achieve competency and a satisfactory grade. The CAPPS will determine if a re-sit examination or repeating the course is the appropriate avenue for remediation.

When a course is being repeated due to an unsatisfactory grade of "D+", "D" or "F", the student will be placed on Academic Probation.*

Academic Probation will continue until the student has been cleared of all outstanding lower term courses by attaining a grade of a "C" or better, and is ready to progress to the next higher term, on a regular basis.

An unsatisfactory grade obtained ("D+", "D", "F") while on probation will result in a recommendation for Dismissal.**

Student(s) mandated to take a re-sit examination may opt to repeat the course.

Two "F's" or any combination of three (3) unsatisfactory grades ("D+", "D", and "F") will result in dismissal.

The following table describes the policy to be implemented by the CAPPS to determine a student's academic progress when an unsatisfactory grade ("D+", "D", "F") is obtained:

	Qualitative Deficiency	Recommendation by CAPPS
"D+" or "D" Grades		
1	First "D+"/"D" grade (Term and Cumulative GPA ≥ 2.0)	Mandatory Re-sit examination or Repeat the course (at the discretion of CAPPS)
2	Second "D+"/"D" grade following successful remediation of a previous "D+" or "D", and successful completion of the terms of Academic Probation (Term and Cumulative GPA > 2.0)	Mandatory Re-sit examination or Repeat the course (at the discretion of CAPPS)
3	Two "D+"/"D" grades in the same term	Repeat both courses while on Academic Probation
4	Two "D+"/"D" grades in one term when a previous remediation has already occurred	Dismissal
5	An unsatisfactory grade ("D+", "D" or "F") in a course that is repeated	Dismissal
"F" grade		
6	First "F" grade without any previous "D+"/"D"	Repeat course while on Academic Probation
7	Second "F" grade	Dismissal
8	"D+"/"D" and an "F" grade without previous remediations	Repeat courses while on Academic Probation
9	Any combination of 3 or more grades ("D+", "D", "F") below "C"	Dismissal
10	Any "D+", "D", or "F" while on Academic Probation	Dismissal
11	**Remediation** A student will be allowed remediation of only two unsatisfactory grades ("D+", "D", "F"). Remediation of an unsatisfactory grade ("D+", "D", "F") may be by a re-sit	

	examination, if permitted, or by repeating the course (following the guidelines listed above). Failure of a re-sit examination automatically mandates a repeat of the course (counts as one remediation attempt). Repeating the course will be counted as a second and, in most cases, last remediation allowed for the first six (6) terms. A third unsatisfactory grade ("D+", "D", "F") within the first six (6) terms or an unsatisfactory grade ("D+", "D", "F") in a repeated course will result in a recommendation for dismissal.
12	The highest grade recorded for satisfactory performance on a re-sit examination, and therefore for the particular course, will be a "C". The original unsatisfactory grade ("D+", "D") will remain on the transcript.
13	A student who obtains a "D+", "D" or "F" in a re-sit examination will be mandated to repeat the course (if the two attempts allowed for remediation have not been exhausted) and will be placed on Academic Probation; the original unsatisfactory grade ("D+", "D", or "F") will remain on the transcript.
14	The grade obtained upon successful repeat of a course will be the new grade recorded on the transcript; the previous unsatisfactory grade ("D+", "D", "F") will remain on the transcript.
15	Each instance of obtaining an unsatisfactory grade ("D+", "D", "F") in a course will be counted toward the maximum allowable number of unsatisfactory grades of two (2), regardless of successful remediation by a re-sit examination or by repeating the course.

* Academic Probation (AP): Students who are placed on AP with mandatory repetition of coursework have to repeat all courses in which a grade of "F", "D", or "D+" were obtained. AP will be cleared if students:

1 Achieve a cumulative GPA of 2.00 or above in each term that they spend on AP.

2 Do not receive any unsatisfactory grades ("D+", "D", "F") during their AP.

3 Fulfill all other requirement stipulated by the CAPPS.

** Dismissal: Can be appealed by the student.

b. 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

c. Assessment policy:

i. All students are expected to be familiarized with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. All students are expected to attend all assigned academic activities for all courses currently registered. Scheduling of examinations is at the discretion of the University. University policy dictates that an examination **cannot** be given prior to the scheduled date. Students will not be able to defer an examination for misreading the examination schedule, accommodating travel plans, or any other reason not considered a serious mitigating circumstances. Students who fail to appear for an examination without a valid reason will receive a score of "0" points for the examination.

ii. 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.

iii. 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.

1. Upon obtaining a grade of "C" or better on the re-sit exam, the maximum course grade earned is a "C".
2. At mid-term, students that are at risk of getting an unsatisfactory grade ("D+", "D", "F") in the course will be advised by the CAPPS to prepare for remediation.
3. It is the responsibility of the student to make appropriate and timely travel arrangements to return to Grenada to take the re-sit examination during the first two (2) days of classes in the following term as scheduled by the school.
4. Students will be expected to appear for the re-sit examination. Failure to appear without an accepted excuse constitutes an automatic mandatory repeat of the course and sanctions related to unprofessional behavior.

iv. There will be **four** written examinations for the course. The written examinations will consist of multiple choice questions (MCQ's) administered through ExamSoft. The examinations shall cover the material described in the **lectures and laboratory sessions and Auburn necropsy demos.**

v. All examinations will be sequestered. Students will **NOT** be provided students with an electronic review of the questions they missed. Students can, however, meet with the Faculty concerned in his/her office to go over the topics that they had problems with, not the actual questions. A raw score of the quiz/examination will be given upon exit from SoftTest.

vi. Examination schedule:

1.	Quiz 1	20 Points	Feb. 10	8:30 AM	TBA
2.	Mid-term	60 Points	Mar. 09	8:30 AM	RJS Hall 1 & 2
3.	Quiz 2	25 Points	Apr. 14	8:30 AM	TBA
4.	Final	75 Points	May 04	8:30 AM	RJS Hall 1 & 2
		Total **180** Points			

vii. All other examination policies are followed according to the SGU Examination Policy and the Student Manual.

d. Grading rubrics:

i. TBA

XIV. Recommended study strategies

a. The course notes will be posted on Sakai, and also available on Sonic Foundry. The exam material will come from lectures, labs, and classroom discussions.
b. Students are expected to read lecture notes and power points and come prepared to answer questions. Clicker questions will be included in some of the lectures so students should make sure their devices are working correctly in order to participate.
c. 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 sequela?
    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 read the required material before class.

XVI. Professionalism statement

a. Please exhibit professional behavior in class.
b. Students are expected to **arrive on time** for lectures, labs, and exams.
c. The consumption of food is not allowed during lectures. Water and non-alcoholic drinks in spill-proof containers are allowed.
d. **The use of mobile phones is not allowed** during class and exams. Exceptions to these rules have to be discussed with the course director.
e. Animals are not permitted in any buildings. Exceptions are service animals (an ESA [Emotional Support Animal] is NOT considered to be a service animal), campus security dogs, animals under care and treatment in the veterinary medical complex, research animals housed in University buildings, or animals used as part of an

academic program (which latter must be preapproved by the respective course director).

f. The lecturer may ask students who breach any of the above rules to leave the class.

XVII. Attendance policy

a. Requirements

i. Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Student's absence may adversely affect their academic status as specified in the grading policy.

ii. If absence from individual classes, examinations, and activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.

b. 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 fell 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. All students are expected to be familiarized with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. All students are expected to attend all assigned academic activities for all courses currently registered. Scheduling of examinations is at the discretion of the University.

b. Scheduling of all examinations is at the discretion of the University. University policy dictates that an examination **cannot** be given prior to the scheduled date.

c. Students who fail to appear for an examination without a valid reason will receive a score of "0" points for the examination.

XIX. ExamSoft policy

a. You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. ExamSoft is able to track testing behaviors, i.e. testing time, testing location, and any deviations from the honor code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honor Code in the student handbook. If you have a computer problem go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam. You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in ExamSoft so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email after to ensure that your answer file has been uploaded.

b. **Prior to Exam Day**

i. 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:

ii. 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.
iii. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
iv. 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.
v. 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.

c. **On Exam Day**

i. 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.
ii. Examinees must reset the clock on their laptops to the correct local time and time zone (Atlantic Standard Time - AST).
iii. Students are permitted to download exams only in the examination venue and not in advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
iv. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
v. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
vi. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
vii. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
viii. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
ix. No communication of any kind is permitted between examinees after entering the examination room.

x. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
xi. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
xii. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
xiii. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
xiv. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
xv. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
xvi. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
xvii. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action.
xviii. Permitted Items—only the following items will be allowed into the exam venue:
    1. Laptop and accessories
    2. SGU ID
    3. Completely clear (see-through) bottle of plain water
    4. Items specified by Course Director or permitted by Dean of Students (DOS) office
    5. *No other personal belongings will be permitted.

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 use these materials *solely* for the purpose of group or individual study. Reproduction in whole or in part is prohibited".

XXI. Appendices

a. "Not applicable at this time".

XXII. Course and Instructor critiques

a. Students are expected to attend all classes and other related academic activities as defined for each course by the Course Director. One such academic activity is

participation in the St. George's University (SGU) Course and Instructor Critique program.

b. Student participation in the evaluation process is mandatory: When requested, students in a course are expected to complete all required faculty and course evaluations. Failure to complete all required course and instructor critiques will mean that students did not fulfill all course requirements. The critiques coordinator notifies students when evaluation periods have begun and sends periodic reminders to ensure that critiques are submitted within the allotted time frame.

c. The Importance of Evaluation: Evaluation is a necessary component of any course. Just as students anticipate a fair and accurate evaluation of their performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves as students' needs and expectations are considered.

d. Feedback: At the beginning of each term, Course Directors will address the class and summarize the results of the Course and Instructor Critiques from the previous semester. In this summary, Course Directors will report areas that students rated highly and the areas that received the lowest ratings. For areas receiving low ratings, the Course Director details what changes were made to address students' concerns, thus ensuring that course evaluation influences course design and delivery.

e. Your Participation in the Evaluation Process is **MANDATORY**: When you are expected to complete a course and/or instructor critique, the Office of Educational Assessment (OEA) will notify you via your SGU e-mail account and post a notice outside the lecture hall. This notification will include instructions on how to access and complete the necessary critique(s). Once you access a required course or instructor critique, you can either complete it or indicate that you do not want to complete the critique by checking the appropriate box on the form. Students who have not submitted evaluations within the allocated period will be placed on a "registration hold" by the Registrar's Office. A registration hold bars students from registering for future classes until all outstanding evaluations are completed. At registration time, students on "registration hold" will be directed to the OEA for instructions on how to complete remaining evaluations. Once these are submitted, the registration hold will be lifted.

f. Please be assured that the information you provide will remain strictly confidential because your identification and your responses will always be separated. If you have any questions about the Course and Instructor Critique System, please contact Ms. Raynelle Benjamin at the OEA – EXT. 3879 or rbenjam2@sgu.edu

SVM Course Code: PTHB 510
Course Director: Dr. Rohini Roopnarine
Spring 2020 Online Course Completion

Previous Course Lectures	Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Zoonoses 1. Classification of zoonoses and the Vet's role 2. *Mycobacterium bovis* 3. Taeniasis-Cysticercosis 4. Rocky Mountain Spotted Fever 5. Visceral migrans 6. Brucellosis 7. *Coxiella burnetii* 8. *Chlamydiosis* 9. Lyme/Ehrlichia 10. Immunosuppressed Persons and Pets- AVMA Policy: pregnant Women in Vet. facilities	**Zoonoses** 1. Classification of zoonoses and the Vet's role 2. *Mycobacterium bovis* 3. Taeniasis-Cysticercosis 4. Rocky Mountain Spotted Fever 5. Visceral migrans 6. Brucellosis 7. *Coxiella burnetii* 8. Lyme/Ehrlichia 9. Immunosuppressed Persons and Pets	**March 24-April 9** Panopto 1-9	Study exercise on Sakai Tests and Quizzes (also on page 55 of your Zoonoses notes) Use the Readings indicated on p.55 of your notes Use Powerpoint summary of these readings provided in the Zoonoses Powerpoints folder Ungraded
Emerging Zoonoses 1. Factors of Emergence 2. Zoonotic Influenza viruses 3. WNV, EEE, VEE 4. Bats & Zoonoses: Focus on Henipaviruses 5. Coronaviruses	**Emerging Zoonoses** 1. Factors of Emergence 2. Zoonotic Influenza viruses 3. WNV, EEE, VEE 4. Coronaviruses	**April 14-April 21** **Panopto 10-12**	Built in Turning point questions within the powerpoints Ungraded
Rabies	Rabies	**April 22-29** Panopto 13-16	Rabies: 2 Cases Rabies: Clicker questions Ungraded Answers to all posted on Sakai
Final exam consists of 2 open book assessments: Assessment 1: Josephine Afema (JA) Assessment 2: R. Roopnarine (RR)	1 week to complete each assessment	JA post Tuesday April 21 RR to post April 29	Submit Assessment 1 (JA) Tues April 29 Submit Assessment 2 (RR) Fri May 8 (20 points) Grading and Posting of final grades
Total Lectures: 19	Total Lectures (Panopto): 17		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation:
Total points = 80 *Total points breakdown:* Midterm exam 20 pts Final exam 60 pts	Total points = 60 *Total points breakdown:* Midterm 20 pts Final exam grade: 40 pts (2 assessments) • Assessment 1: 20 pts • Assessment 2: 20 pts

Learning outcomes: please list any CLO or LLO's which were omitted below: *Due to condensed course content, it is expected that LO's will be prioritized as necessary.*

1. Differentiate zoonotic *Chlamydial species* with implications for human health (abortion)
2. Evaluate the role of the veterinarian in detection and reporting of zoonotic Chlamydial spp
3. Apply your knowledge of transmission and prevention of globally zoonotic henipaviruses of animal origin impacting global health
4. Execute your role as a Veterinarian in public health education regarding prevention/control of zoonotic henipaviruses

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
***VETERINARY PUBLIC HEALTH SYLLABUS* (2 Credits)**
PTHB 510 (Term 4)
Spring 2020

I. Course Faculty and Staff Information

Course Director: Dr. Rohini Roopnarine, DVM M. Phil EdD (***Higher Ed***.) MRCVS
Associate Professor, Veterinary Public Health,
Office Location: Trailer Building
Tel: 444-4175 ext 3678
Email Address: rroopnarine@sgu.edu
Office Hours: By appointment

Joint Faculty: Dr. Josephine Afema, DVM MSc PhD,
Associate Professor,
Office Location:
Email address: jazikuru@sgu.edu
Office hours: By appointment

II. Course location

Ray & Jan Sis Hall 2

III. Prerequisite and/or co-requisite courses

A solid background knowledge of virology, bacteriology, immunology and parasitology.

IV. Required resources

Veterinary Public Health class notes and Powerpoints
Readings provided as follows:

- Prevention and Control of *Coxiella burnetii* Infection among Humans and Animals: Guidance for a Coordinated Public Health and Animal Health Response, 2013. National Association of State Public Health Veterinarians and the National Assembly of State Animal Health Officials
- USDA: Evaluation of Factors that Would Initiate or Propagate Epidemic Coxiellosis in the U.S.
- Diagnosis and Management of Q Fever — United States, 2013.
- Compendium of Measures to Control *Chlamydophila psittaci* Infection Among Humans (Psittacosis) and Pet Birds (Avian Chlamydiosis), 2017. National Association of State Public Health Veterinarians (NASPHV)
- Elad D. Immunocompromised patients and their pets: Still best friends? The Veterinary Journal. 2013 Sep 30; 197(3):662-9.
- Legal implications of zoonoses for clinical veterinarians. JAVMA (and the AVMLA), 2008
- Compendium of Veterinary Standard precautions for Zoonotic Disease Prevention in Veterinary personnel 2015. (NASPHV)
- Compendium of Animal Rabies Prevention and Control, 2016. National Association of State Public Health Veterinarians (NASPHV)
- Web resources: www.fsis.usda.gov; http://www.cdc.gov, http://www.oie.int, http://www.usda.gov, https://www.avma.org

V. Recommended resources

- Zoonoses and Communicable Diseases Common to Man and Animals, 3rd edition. Consists of 3 volumes.
- Control of Communicable Diseases Manual, 17th edition, James Chin, MD, MPH, editor, (2000).
- Rabies surveillance in the United States during 2016. JAVMA 2018.
- Colorado Department of Health, Rabies prevention and Control policy for Hybrid wolves regarding vaccination, bite follow-up and exposure to rabies

VI. Special accommodation

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

VII. Other requirements

N/A

VIII. Course rationale

This course is 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. Foodborne 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. They 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. 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. Students are expected to be competent in the roles of various regulatory agencies such as the USDA, FDA, CDC and in their reporting responsibilities to these agencies. The course uses a combination of advanced turning point combined with practical cases for class discussion to assist the student in knowledge application

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 as they relate to the veterinarian's role in reporting notifiable diseases.

2. Apply the One Health Concept to the professional responsibilities of the veterinarian in promoting human, animal and environmental health

3. Apply your knowledge as a veterinarian in working with public health officials in the prevention and control of zoonotic and foodborne diseases

4. Identify the main U.S. Federal agencies involved in Public health administration.

X. Lesson Level Outcomes

Food Safety

History and 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

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

Microbial and Parasitic causes of Foodborne disease
At the completion of this lecture the student will be able to:

Determine the likely microbial and parasitic agents of animal origin implicated in foodborne illness

Meat Products for Human Consumption and Condemned Products
At the completion of this lecture the student will be able to:

- Differentiate between restricted from condemned products as it pertains to tissues allowed for human consumption
- Identify the disease conditions associated with specific restricted product treatments

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

Milk Hygiene
At the completion of this lecture the student will be able to:

- Identify the zoonotic agents derived from milk
- Identify the agency involved in regulating milk hygiene in the U.S.

The FDA and Residues
At the completion of this lecture the student will be able to:

- Identify the drugs prohibited for extralabel 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

At the completion of this lecture the student will be able to

- Evaluate the role of the veterinarian in detection and reporting of *C. burnetii*
- Evaluate the role of the veterinarian in public health education on prevention
- Assess the importance of control programs fro animals and humans working in research facilities with small ruminants

Zoonotic avian and mammalian *Chlamydia*

At the completion of this lecture the student will be able to

- Differentiate zoonotic species with implications for human health (abortion)
- Evaluate the role of the veterinarian in detection and reporting of *zoonotic spp*

Lyme disease and Ehrlichiosis

At the completion of this lecture the student will be able to

- Evaluate the role of the veterinarian in public health education on prevention of vector borne diseases
- Create a diagnostic and prevention/control plan for animals and humans at risk of exposure to vector-borne agents

Immunocompromised people and pets

At the completion of this lecture the student will be able to

- Determine their role as veterinarians in educating owners zoonoses prevention
- Judge their ethical and legal responsibilities as it applies to preventing zoonoses occurrence in clients and staff drawing on the two recommended readings

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

Bats and Zoonoses
At the completion of this lecture the student will be able to:

- Apply your knowledge of transmission and prevention of current global zoonoses of animal origin impacting global health
- Execute your role as a Veterinarian in public health education regarding prevention/control

SARS and MERS
At the completion of this lecture the student will be able to:

- Apply your knowledge of transmission and prevention of current global zoonoses of animal origin impacting global health

- Execute your role as a Veterinarian in public health education regarding Prevention/control

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

Program Competencies	Course Learning Outcomes #
A. Core Medical Knowledge	
1. Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.	
3. Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases.	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 notifieable 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	
1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	1,2,3
2.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
3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution **skills** as a member of a multidisciplinary team.	1,2,3
4. Model lifelong continuing education and professional development.	1,2
6. Demonstrate and model self awareness including understanding personal limitations and willingness to seek advice.	2,3
8.Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.	2,3
C. Core Clinical Competencies (Skills)	
1.Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.	3
7. Design and execute plans for health promotion, disease prevention, and food safety.	1,2,3,4
8. Demonstrate and model effective client communication and ethical conduct.	1,2,3

XII. Refer to Course schedule for details

Week	Date	Time	Lecturer	Topic
			Roopnarine	Introduction to VPH and 'One Health" / Food Safety
				History and Organization of the Meat and Poultry Inspection program
				Hazard Analysis and Critical Control Points (HACCP)
				Ante Mortem Inspection and Disposition
				Humane Slaughter & DVD of Slaughter process
				Post Mortem Inspection
				Meat Products for Human Consumption/Condemned Products/Pet Food Composition
				Poultry Slaughter
				Microbial and Parasitic causes of Foodborne disease
				Milk Hygiene and the FDA and Residues in Food animals Midterm Review
				Midterm
				Zoonoses Classification. Bovine, cervid and elephant tuberculosis & U.S. Control programs
				Bovine, cervid and elephant tuberculosis & U.S. Control programs, Neurocysticercosis
				Rocky Mountain Spotted fever, Visceral migrans
				Bovine, elk, swine brucellosis; U.S. Control programs
				Immunocompromised people and pets
				Coxiella burnetii and U.S programs for control in humans and animals
				Zoonotic Chlamydia: Psittacines, ruminants, cats
				Lyme disease, Ehrlichiosis
				Take Home Sakai Exercise- Based on 2 readings: Zoonoses scenarios& the Vet's public health responsibilities.
				Factors of Emergence
				Influenza viral subtypes of public health importance
				Zoonotic equine arboviruses of emerging importance
				Bats and Zoonoses: Henipaviruses
				SARS/MERS Coronaviruses
				Rabies
				Rabies
				Rabies
				Rabies
				Final VPH exam

XIII. Grading and assessment policy, and grading rubrics

Grade Scale

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

Types of Assessments:
There will be 1 midterm and a final exam for the course, which will consist of multiple choice questions. The examination shall cover the material described in the lectures, powerpoints, readings and Take home ungraded assignment materials. The aspects of parasitology, virology and bacteriology relevant to veterinary public health that were taught during the previous terms are considered part of the exam material. Students are responsible for reviewing those notes and referring to recommended books and readings uploaded on the SAKAI network if needed.

Assessment	Date	Points
1. **Midterm**	March 10	20
2. **Final**	May 8	60

XIV. Recommended study strategies
Active participation in turning technology sessions and study exercises are recommended to enable applicability of core concepts to veterinary practice.

XV. Instructor's expectations of the student
Students are expected to adhere to the Professionalism Policy (see XVII), and at all times demonstrate respect not only towards SGU faculty and staff, but also towards their fellow students and the general public.

XVI. Professionalism statement
The policy relating to SGU's Student Policies, Procedures and Non-Academic Standards is detailed in the SGU student manual 2016/2017, pages 14-24.

XVII. Attendance policy

The policy relating to class attendance is detailed in the SGU 2016/2017 student manual, page 8. On days where a class assignment is due, attendance is mandatory and failing to attend can result in a grade of F for the assignment. ***Students are expected to participate in clicker sessions and class exercises***. Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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.
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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.

17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

*No other personal belongings will be permitted.

XX. Copyright policy

Appendix: N/A

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
DEPARTMENT OF PATHOBIOLOGY
***VETERINARY EPIDEMIOLOGY SYLLABUS* (1 Credit)**
PTHB 511 (Term 4)
Spring 2020

I. Course Faculty and Staff Information

Course Director: Dr. Rohini Roopnarine, DVM M. Phil EdD (**Higher Ed**.)MRCVS
Associate Professor, Veterinary Public Health,
Office Location: Trailer Building
Tel: 444-4175 ext 3678
Email Address: rroopnarine@sgu.edu
Office Hours: By appointment

II. Course location
Ray & Jan Sis Hall 2

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

V. Recommended resources

- Web resources: http://www.cdc.gov, http://www.oie.int, http://www.usda.gov, https://www.avma.org, http://www.who.int/en
- Recommended texts: Epidemiology, 5th Edition. Leon Gordis.

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

VII. Other requirements
None

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 the evaluation of biological disasters of animal origin that impact human health and understanding the important role of the veterinary surgeon in responding to such disasters. Epidemiology is a cornerstone of public health and the practise of preventive medicine in populations and hence requires the student to have a solid foundation in the basic science courses.

IX. Course-Level Outcomes
Upon successful completion of this course, the student will be able to…

1. Apply the principles of evidence-based veterinary medicine to the evaluation of clinical trials and control programs

2. Apply the principles involved in evaluating screening tests for early disease detection and prevention

3. Determine the role of the veterinarian in the management of disasters of animal origin impacting human populations

4. Identify the main Federal, State and International agencies involved in responding to biological disasters of animal origin

X Lecture Level Outcomes

Introduction to epidemiological concepts
At the completion of this lecture the student will be able to:

- Define the objectives of epidemiology
- Apply the core concepts introduced such as epidemic, endemic and pandemic
- Apply the concept and importance of evidence-based medicine to clinical practice

Disease Reporting
At the completion of this lecture the student will be able to:

- Define the key terms introduced as it pertains to disease prevalence and incidence
- Determine the role of the agent-host-environmental relationship in disease occurrence
- Differentiate between the types of epidemic curves that are used to characterize outbreaks

Causal Relationships
At the completion of this lecture the student will be able to:

- Apply the key causal criteria applied to epidemiological studies to determine the strength of the study design
- Determine the causal criteria used to evaluate the existence of a causal relationship between independent variables (exposures) and dependent variables (disease or outcome)

Bias, Sample Selection, Confounding
At the completion of this lecture the student will be able to:

- Differentiate between types of bias
- Evaluate the types of bias present in study designs
- Evaluate the presence of potential confounding in study designs
- Appraise different sampling methods for achieving desired study results

Descriptive and Analytical Epidemiological Study designs
At the completion of this lecture the student will be able to:

- Apply causal criteria to evaluate the strengths of various epidemiological study designs
- Determine the strengths and weaknesses of various study designs used in published work

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
- Apply the key concepts introduced to designing a screening program for a Veterinary teaching Hospital blood bank versus that of a shelter facility

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

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

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)

Biological Disasters of Animal Origin
At the completion of this lecture the student will be able to:

- Differentiate disasters of intentional origin from those that are natural or accidental
- Judge the consequences of biological disasters of animal origin
- Identify the major categories of the Centres for Disease Control and Prevention (CDC) biological agents and the main agents within each
- Execute their responsibilities as Veterinarians in responding to biological disasters of animal origin
- Identify the agencies (& abbreviations for the agencies) in the U.S. and Internationally that a Veterinarian should notify or collaborate if such an event occurs

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Program Competencies	**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.	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	
1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.	1,3,4
2.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
3. Demonstrate, evaluate, and model leadership, teamwork and conflict resolution **skills** as a member of a multidisciplinary team.	1,3,4
4. Model lifelong continuing education and professional development.	1
8.Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences.	3,4
C. Core Clinical Competencies (Skills)	
1.Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis	2
7.Design and execute plans for health promotion, disease prevention, and food safety.	1,2,3,4
8.Demonstrate and model effective client communication and ethical conduct.	1,2,3,4
9.Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.	1

XII. Course Schedule

Week	Lecture	Time	Lecturer	Topic
		Refer to schedule	Dr. Roopnarine [RR]	Introduction to Epidemiological concepts
				Disease Reporting
				Causal relationships
				Bias, sample selection, confounding
				Descriptive Studies
				Analytical Studies
				Analytical Studies
				Study designs: *Take home Sakai*
				Screening and Diagnosis
				Screening for FIV: *Take home Sakai*
				Herd Immunity
				Investigation of an Outbreak
				Biological Disasters of Animal Origin
				Biological Disasters of Animal Origin
				Final Exam

XIII. Grading and assessment policy, and grading rubrics

Grade Scale

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

Types of Assessments:
There will be 1 final exam for the course, which will consist of multiple choice questions. The examination shall cover the material described in the powerpoints, notes and class study exercises. The aspects of virology, immunology, parasitology and bacteriology relevant to veterinary public health that were taught during the previous terms are considered part of the exam material. Students are responsible for reviewing those notes if needed. Students are expected to make use of the recommended books and weblinks uploaded on the SAKAI network if needed. There are 2 ungraded take home assignments on Sakai for students that have been provided to assist students in clarifying some of the fundamental concepts of this course.

Assessment	Date	Points
Final Examination	Feb 17	40

XIV. Recommended study strategies
Active participation in turning technology sessions and study exercises are recommended to enable applicability of core concepts to veterinary practice.

XV. Instructor's expectations of the student
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2. 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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    5. Examinees will be notified via MyCourses, of all exam related information. Email
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    8. 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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Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.

7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
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17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

*No other personal belongings will be permitted.

XX. Copyright policy

The Plagiarism Policy is detailed in the SGU Student Manual 2016/2017, pages 24-25. 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".***

Appendix:
N/A

SVM Course Code: **PTHB 512**
Course Director**: Diana Stone and Euan Allan**
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format: **~75% of the course had been completed before the 'Online completion mandate**	Weekly Learning Schedule:	Assessment Schedule: **Times are Grenada time zone (AST)**
Mucosal Immunity Avian Immunity	**Mucosal Immunity** One Lecture via Panopto	March 23-29 Mucosal Immunity Panopto lecture	Open book Quiz on Sakai Open at 8:00 am Thursday, March 26 **Due Monday, March 30th at 8 am** Will have two hours to complete 10 Points
Neonatal Immunity	**Neonatal Immunity** One lecture via Panopto	March 30-April 5 Neonatal Immunity Panopto lecture	Open book Quiz on Sakai Open at 8:00 am Thursday April 2 **Due Monday, April 6th at 8 am** Will have two hours to complete 10 points
Vaccines Hypersensitivities	**Vaccines** 1.5 lectures via Panopto	April 6-12 1.5 Vaccines Panopto lectures	Open book Quiz on Sakai Open at 8:00 am Thursday April 9 **Due Monday, April 13th at 8:00 am** Will have two hours to complete 10 points
Total lectures: 9	Total lectures (Panopto): 3.5		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = **_94__** *Total points breakdown:* • Two Formative quizzes: 4 points • Midterm exam: 45 points • Final exam: 45 points	Total points = **_79__** *Total points breakdown:* • Two formative quizzes: 4 pts (completed) • Midterm: 45 points (completed) • Exam on mucosal immunity: 10 pts • Exam on neonatal immunity: 10 pts • Exam on vaccines: 10 pts

Learning outcomes: please list any CLO or LLO's which were omitted below:

Avian Immunity

- 26aAC: Contrast avian immunity with mammalian immunity.
- 26bAC: List avian Ig and the roles of each type.
- 26cAC: Explain avian passive immunity and describe why it is important for human activities.

Hypersensitivities LLOs:

- 29aD: Describe the events that occur with sensitization (priming) and second exposure to an allergen
- 29bD: Describe the mechanisms of Type I hypersensitivity and timing of clinical signs.
- 29cD: Describe the antibody classes and cellular infiltrates involved in Type I hypersensitivity.
- 29dD: Recognize the clinical signs commonly associated with Type 1 hypersensitivities
- 30aD: Describe the mechanisms of Type II hypersensitivity and timing of clinical signs.
- 30bD: Describe the antibody classes and cellular infiltrates involved in Type II hypersensitivity.
- 30cD: Recognize the clinical signs commonly associated with Type II hypersensitivities
- 30dD: Describe the mechanisms of Type III and IV hypersensitivities and timing of clinical signs.
- 31aD: Describe the antibody classes and cellular infiltrates involved in Type III and IV hypersensitivity.
- 31bD: Recognize the clinical signs commonly associated with Type III and IV hypersensitivities
- 31cD: Describe the diagnostic tests used to diagnose the type of hypersensitivity present in the patient and identify the type of samples you need to collect for the tests.
- 32aD: Describe basic treatments for each hypersensitivity and the immunology behind these treatments
- 32bD: Cases: Recognize clinical conditions that represent each type of hypersensitivity.

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. **Mucosal immunity:**
    1. 24aAB: Characterize the mechanisms of mucosal immune protection.
    2. 24bAB: Contrast the structural and functional differences between mucosal inductive and effector sites.
    3. 24cAB: Describe the assembly and secretion of IgA at mucosal sites.
    4. 24dAB: Define mucosal immune exclusion and immune elimination. Provide examples.

2. Neonatal Immunity:

1. 25aC: Differentiate between colostrum and milk immunoglobulin composition and species differences
2. 25bC: Describe the importance and the mechanism for maternal immunoglobulin absorption into the neonatal circulation and how maternal immunoglobulin protects the gut of the neonate.
3. 25cC: Describe criteria for determining failure of passive transfer in foals and in calves and approaches to treatment
4. 25dC: Describe the rationale behind some serial vaccination schedules used for young domestic animals.

3. Vaccines:

1. 27aC: Recognize the different types of vaccines, how they differ and the pros and cons of each.
2. 27bC: Identify the type of immune response the different vaccines will generate.
3. 27cC: Describe the methods used to attenuate organisms for MLV and to kill “inactivated” vaccines.
4. 28aC: Describe the functions of adjuvants and what types of vaccines need them
5. 28bC: Recognize the concept of core and noncore vaccines.
6. 28cC: Describe the potential adverse reactions to vaccines and when certain kinds of vaccines can and cannot be use.

Veterinary Immunology
PTHB 512 – 2 credits
Sp 2020

Co-Course Director: Diana Stone, MPH, DVM, PhD, Diplomate ACVPM. dstone@sgu.edu. Office in trailer behind former BocoLupo. Email D. Stone to arrange times to meet.

Co-Course Director: Euan Allan, MSc, PhD. Eallan1@sgu.edu. Office in Marion Hall "Veterinary Research and Diagnostic Laboratories" building. (next to Sis Hall. This building is also where the bacteriology teaching/diagnostic lab is located). Email Dr. Allan to arrange times to meet.

Ms. Cindy Edwards is our departmental secretary.

Location: Dave Brown Hall,….

Pre-requisites: Current 2nd term SVM student

Required/Recommended Resources: Class Notes are required and will be posted on MyCourses; 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

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

Course Rationale: This course is designed to be an **introduction** to a complex and continually evolving discipline that defines the immune system. The primary objective of the course is to provide students the basic elements needed to understand the immune system and its role in combating disease processes. This area of study is dynamic and should be interwoven in other subjects as you progress through your veterinary education. In other words, this will not be the last time you hear of it! Specific diseases associated with hypersensitivities, autoimmunity, and immune deficiency will be discussed in more detail in your other courses including General Pathology, Systemic Pathology, Clinical Pathology, and Medicine courses.

Course Goals:

- To prepare students for Terms 3, 4, 5, 6 and their clinical 4th year of training. Immunology forms the bases of many diagnostic tests, therapies and disease prevention strategies (such as vaccines). The basics of immunology are also needed to diagnose and treat diseases of the immune system. Normal immune responses can also contribute to disease.
- To ensure students understand the basics of innate and acquired immunity including the role of cytokines, cell surface receptors, Complement proteins, phagocytic cells, antigen processing and presentation and the role of MHC molecules, humoral immune responses and cell-mediated immune responses, mucosal immunity, neonatal immunity, the hypersensitivities, generation of T-cell and B-cell receptor diversity, and the interaction of innate and acquired immunity.

- To help students develop problem solving skills. Students will be expected to apply immunology concepts to novel situations on exams.
- To ensure students understand the immunologic bases of immunology-based diagnostic assays and to correctly interpret results. To understand specificity and sensitivity of a test and the need for positive and negative controls for diagnostic tests.

Course Learning Outcomes:

A. **Define and differentiate** the properties of antigens, antibodies, MHC molecules, antigen processing, immune cells, innate/adaptive/passive immunity, and humoral and cell mediated immune responses.
B. **Recognize and compare** the innate and acquired immune mechanisms involved in mucosal immunity and immune responses to intra-cellular and extracellular pathogens.
C. **Describe, interpret and predict** the results of immunodiagnostic tests, antibody results for passive transfer, failure of passive transfer, primary/secondary immune responses to infection/vaccination.
D. **Recognize and compare** the immune mechanisms and clinical signs that characterize the four types of hypersensitivity reactions.

Lecture Learning Outcomes: <u>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.)</u>

- 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.
- 2aA: Recall and define hematopoiesis.
- 2bA: List the immune cells that comprise the innate and adaptive immune system.
- 2cAB: Define the role of each innate immune cell.
- 3aAB: Identify and define the role of innate sentinel cells.
- 3bA: Define the molecules essential for innate immunity.
- 3cAB: Describe the steps of phagocytic killing.
- 4aA: Differentiate between the two main phagocytic cells.
- 4bAB: Define TLRs and describe their role in innate immunity.
- 4cAB: Explain the mechanisms by which NK cells identify and kill a virally infected cell.
- 5aAB: Define the complement system.
- 5bAB: Compare and contrast the classical and alternative complement pathways.
- 5cAB: Describe how the complement system destroys microbes (effector mechanisms).
- 6aA: Define antigen, recognize what molecules can be antigens, and identify what antigens are and their characteristics (immunogenicity vs antigenicity).
- 6bA: Describe what an epitope is and what role it plays in cross-reactivity.
- 6cA: Differentiate between a hapten, and epitope, and an antigen.
- 7aAB: Differentiate between intra/ extracellular microbes.
- 7bAB: Define endogenous and exogenous antigens, and their sources, and appreciate different immune responses to each.

- 7cA: Be able to identify and list important non-microbial antigens.
- 8aA: List the major differences between MHC-I and MHC-II antigen capture, processing and presentation.
- 8bA: Identify and contrast the three professional/semi-pro APCs.
- 8cAB: Gain an initial appreciation of antigen presentation to lymphocytes.
- 9aAB: Compare the two pathways for antigen presentation, and contrast these with cross presentation.
- 9bAB: Link the importance of allelic diversity in MHC to the function of MHC during an adaptive immune response.
- 9cAB: Provide an example of the role of MHC in disease risk.
- 10aAB: Describe T/B cell maturation/selection and explain why they are absolutely essential processes.
- 10bAB: Compare and contrast the BCR and the TCR, and appreciate the process of BCR/TCR diversity.
- 10cAB: Recall lymphocyte surface receptors and explain the importance of co-stimulation.
- 11aAB: Describe the process of T cell activation and define Th cells
- 11bAB: Compare and contrast CD4+ T cell subsets (aka Classes), specifically T.h1 and Th2.
- 11cAB: Relate T cell subsets to effector arms of the immune system: CTLs and Antibody.
- 12aAB: Define CMI and its components.
- 12bAB: Describe CTL activation and effector mechanisms.
- 12cAB: Describe DTH and its role in CMI.
- 13: N/A: This Lecture is for Cases.
- 14aA: Identify/describe the activation/clonal expansion of B lymphocytes
- 14bA: Recognize/differentiate the Fab and Fc regions of antibody, classes of antibody, polyclonal vs monoclonal antibody
- 14cAC: Recognize the class of antibody that is reflected in a scenario and/or lab results.
- 15aA: Review protein electrophoresis and recognize the relevance of the globulin fractions
- 15bA: Recognize normal/abnormal protein electrophoresis results and interpret the basic significance of low/high globulin fractions
- 15cC: Recognize/interpret the terminology and use of antibodies against antibodies in diagnostic tests
- 16aC: Define the concepts of antibody titers, seroconversion, acute vs convalescent antibody titers, T-dependent/T-independent antibody responses.
- 16bC: Describe the primary and animistic antibody responses and differentiate between the two.
- 16cC: Given a scenario, predict the kind of antibody response expected
- 17aC: Given a scenario and serology results, recognize appropriate conclusions regarding vaccination/infection/exposure to pathogen/antibody classes and titers.
- 17bC: Describe and recognize protective immunity and sterile immunity
- 17cA: Review antigen-antibody interactions, polyclonal/monoclonal antibody, antibodies to antibodies, primary/animistic antibody responses and recognize their relevance to immunodiagnostic tests
- 18aC: Describe the uses of immune diagnostic tests, samples and reagents used, and controls needed
- 18bC: Review titers, describe titration and interpretation of titer results

- 18cC: Recognize whether a immunodiagnostic test detects antibody or antigen or can be designed either way.
- 18dC: Given a scenario and immunodiagnostic results, identify exposure/infection/vaccination/disease status
- 19aC: Describe the immunologic concepts/procedures for ELISA, Western Blots and Immunohistochemistry tests, samples/reagents/controls/ used and advantages/limitations.
- 19bC: Recognize key examples of these tests, including the different ELISAs (direct, indirect, sandwich, antigen-capture, competitive), direct and indirect Western Blots.
- 19cC: Appropriately interpret results of these tests.
- 20aC: Describe the immunologic concepts/procedures for precipitation/agglutination tests, the importance of the zone of equivalence, the samples/reagents/controls used and advantages/limitations.
- 20bC: Recognize key examples of these tests including Coggins, RID, Hemagglutination, Hemagglutination inhibition, latex bead agglutination.
- 20cC: Appropriately interpret results of these tests
- 21aC: Describe the immunologic concepts/procedures for serum neutralization and complement fixation tests, samples/reagents/controls/ used and advantages/limitations.
- 21bC: Recognize key examples of these tests and in particular the tests used for rabies serology in humans and animals (RFFIT and FAVN).
- 21cC: Appropriately interpret results of these tests.
- 22aC: Describe the concepts of sensitivity and specificity of a diagnostic test
- 22bC: Given appropriate data, identify the TP/TN/FP/FN from the data and calculate the sensitivity and specificity of a diagnostic test,
- 22cC: Given the sensitivity/specificity of specific diagnostic tests, identify which test is most useful to use in a given scenario and determine the expected TP/TN/FP/FN.
- 23: NA. This lecture is for Cases on immunodiagnostics
- 24aAB: Characterize the mechanisms of mucosal immune protection.
- 24bAB: Contrast the structural and functional differences between mucosal inductive and effector sites.
- 24cAB: Describe the assembly and secretion of IgA at mucosal sites.
- 24dAB: Define mucosal immune exclusion and immune elimination. Provide examples.
- 25aC: Differentiate between colostrum and milk immunoglobulin composition and species differences
- 25bC: Describe the importance and the mechanism for maternal immunoglobulin absorption into the neonatal circulation and how maternal immunoglobulin protects the gut of the neonate.
- 25cC: Describe criteria for determining failure of passive transfer in foals and in calves and approaches to treatment
- 25dC: Describe the rationale behind some serial vaccination schedules used for young domestic animals.
- 26aAC: Contrast avian immunity with mammalian immunity.
- 26bAC: List avian Ig and the roles of each type.
- 26cAC: Explain avian passive immunity and describe why it is important for human activities.

- 27aC: Recognize the different types of vaccines, how they differ and the pros and cons of each.
- 27bC: Identify the type of immune response the different vaccines will generate.
- 27cC: Describe the methods used to attenuate organisms for MLV and to kill "inactivated" vaccines.
- 28aC: Describe the functions of adjuvants and what types of vaccines need them
- 28bC: Recognize the concept of core and noncore vaccines.
- 28cC: Describe the potential adverse reactions to vaccines and when certain kinds of vaccines can and cannot be use.
- 29aD: Describe the events that occur with sensitization (priming) and second exposure to an allergen
- 29bD: Describe the mechanisms of Type I hypersensitivity and timing of clinical signs.
- 29cD: Describe the antibody classes and cellular infiltrates involved in Type I hypersensitivity.
- 29dD: Recognize the clinical signs commonly associated with Type 1 hypersensitivities
- 30aD: Describe the mechanisms of Type II hypersensitivity and timing of clinical signs.
- 30bD: Describe the antibody classes and cellular infiltrates involved in Type II hypersensitivity.
- 30cD: Recognize the clinical signs commonly associated with Type II hypersensitivities
- 30dD: Describe the mechanisms of Type III and IV hypersensitivities and timing of clinical signs.
- 31aD: Describe the antibody classes and cellular infiltrates involved in Type III and IV hypersensitivity.
- 31bD: Recognize the clinical signs commonly associated with Type III and IV hypersensitivities
- 31cD: Describe the diagnostic tests used to diagnose the type of hypersensitivity present in the patient and identify the type of samples you need to collect for the tests.
- 32aD: Describe basic treatments for each hypersensitivity and the immunology behind these treatments
- 32bD: Cases: Recognize clinical conditions that represent each type of hypersensitivity.

Veterinary Immunology
PTHB 512 – 2 credits
Sp 2020

Lecture Schedule: Fall 2019 (Term 2)

Lecture # ….Date and Time See official Term 2 schedule	Topic	Lecturer
1. **Wed, Jan. 22, 2020**	**Introduction to Immunology**	*Stone*
2	**Intro continued/Innate Immunity**	*Stone/Allan*
3	**Innate Immunity**	*Allan*
4	**Innate Immunity**	*Allan*
5	**The Complement System**	*Allan*
6	**Adaptive Immune Response/Antigen**	*Allan*
7	**Adaptive Immune Response/Antigen**	*Allan*
8	**Adaptive Immune Response/ APC and Ag processing**	*Allan*
9.	**MHC**	*Allan*
10.	**Lymphoid Organs; B and T lymphocytes**	*Allan*
FORMATIVE QUIZ		
11.	**T helper 1 and T helper 2 cells**	*Allan*
12.	**Cell-Mediated Immunity**	*Allan*
13.	**Clinical Cases**	*Stone*
14.	**B lymphocytes and humoral immunity**	*Stone*
15.	**primary/secondary antibody responses**	*Stone*
16	**More on humoral immune responses**	*Stone*
17.	**Humoral immune response continued**	*Stone*
18.	**Immunodiagnostics**	*Stone*
19.	**Immunodiagnostics**	*Stone*
FORMATIVE QUIZ		
20.	**Immunodiagnostics**	*Stone*
21	**Immunodiagnostics**	*Stone*
22	**Immunodiagnostics**	*Stone*

Veterinary Immunology
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Sp 2020

Mon. March. 9, 2020, 8:30 am	**MIDTERM**	
23.	**Mucosal Immunity**	*Allan*
24.	**Neonatal Immunity**	*Stone*
25.	**Neonatal continued/Avian immunity**	*Stone/Allan*
26.	**vaccines**	*Stone*
27.	**vaccines**	*Stone*
28.	**Hypersensitivities**	*Stone*
29.	**Hypersensitivities**	*Stone*
30.	**Hypersensitivities**	*Stone*
31.	**Hypersensitivities**	*Stone*
Monday, Apr. 6, 2020, 8:30 am	**FINAL**	

Assessment Exams, Formative Quizzes and Grading Policy:

- **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), 95 minutes for the exam; **Final Exam**: 45 questions (45 points), 95 minutes for the exam. The examinations will be sequestered. Many of the exam questions will require you to apply what you have learned to novel situations. In-class Clicker Questions will give you experience doing this. For exams, students will not only need to understand and know the material, but be able to apply the information and concepts to novel situations.
- **Formative Quizzes:** There will be two Formative Quizzes in the course for a **maximum of 4 points**. For each formative quiz if the student receives 80% or better on the quiz, they will receive 2 points. If the student receives below 80% on the quiz, they will receive 1 point.
- A make-up exam will be given ONLY when the student has an EXCUSED absence. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic PRIOR to the time of the test. Excuses that are issued after the examination will not be accepted. Do not expect to be excused for weddings or birthdays. Funerals of very close family members are adequate justification. Excuses to attend special meetings will be considered through the SVM Associate Dean of Students Office and will include assessment of the student's level of academic performance. SGU policy: no wristwatches will be allowed into exams, not on wrists or on

the desk top. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an ESSAY, Short-Answer or Oral Format.

- **Grading Scale**

≥89.50%	A
84.50-89.49	B+
79.50-84.49	B
74.50-79.49	C+
69.50-74.49	C
64.50-69.49	D+
59.50-64.49	D
<59.49	F

- All other exam policies are followed according to the SGU Examination Policy and the Student handbook.
- **Please note:** The course director enters in the raw scores (points). The computer then calculates the percent and assigns the letter grade to that percent. Percents are carried out to TWO decimal points. **There is no provision in this course to obtain additional points.**

Office Hours, Study Strategies and Time Management:

- Dr. Stone and Dr. Allan are available by appointment: dstone@sgu.edu and eallan1@sgu.edu. We will accommodate your schedule and we are willing to meet you before 8 a.m. and/or after 5 pm if necessary.
- The best strategies for doing well in immunology are:
  - Keep up on a daily bases. Read class notes before class and review the notes after class.
  - Understand the material first, then learn it (commit it to memory). Do not try to memorize things you do not first understand.
  - Practice applying the concepts. In-class Clicker Questions will provide experience in this.
  - Attend the DES sessions
  - If you do not understand some of the concepts, read on the topic in the recommended text books.
  - See the instructor early on if you do not understand the material after you have attended the DES sessions and read on the topic in the recommended texts.
  - Ask questions in class. There are no stupid questions.

Instructors' expectations of students: Students are expected to read the class notes before the lecture covering the material. Students are expected to attend all lectures and be engaged in classroom 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.

Professionalism:

- Professional behavior is expected in class at all times. This includes showing up on time.
- Turn cell phones off or silent them during lectures

Veterinary Immunology
PTHB 512 – 2 credits
Sp 2020

Attendance Policy: Although attendance at lectures is not taken, attendance to lectures is expected. Course notes, homework assignments (scenarios and MCQ sample questions) and all Lecture PowerPts are posted on MyCourses. All lectures are available on Sonic Foundry. For missing an exam, only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will 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/year ONLY, and then you need a medical leave of absence.

Policy regarding missing exams or other required activities: Only absences that are excused by the SVM Dean of Student's Office will be accepted for missing an exam or quiz. Unexcused absences for exams will result in the student receiving a zero for the exam.

ExamSoft Policy: You MUST have your ID card to enter the exam hall. You must have your computer with updated wireless access via the Bradford system and set the time to the LOCAL time in Atlantic Standard Time. ExamSoft is able to track testing behaviors, i.e. testing time, testing location, and any deviations from the honor code will be strictly punished by receiving a zero for the exam and reporting to the SGU Disciplinary board. Please refer to the SGU Honor Code in the student handbook. If you have a computer problem go to the Office of Institutional Advancement (OIA) prior to the exam to get a loaner laptop for 24 hours. If you have a problem downloading the exam on exam day you will be moved to a secondary location to have the issue addressed by IT and take your exam. You will receive a white board for the exam, you may NOT write anything on the board prior to the examination start. There is a timer in ExamSoft so you can monitor your time, there will be NO extensions. You cannot leave the exam venue until you have confirmed upload of your examination. You should also check your email after to ensure that your answer file has been uploaded.

SVM Course Code: __PTHB515_____
Course Director: __Cheetham Brow_____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
[Module Viruses of EQUINE] Lectures: Viral dz affecting 1. __Systemic 2. __Neuro 3. __Respiratory 4. -Reproductive/skin 5. Cases	[Module Viruses of EQUINE] Lectures via Panopto: 1. Equine infectious anemia, Equine arteritis, Influenza and rhinopneumonitis 2. EEE,WEE,WNV (remind rabies), Eq abortion, Coital Exanthema. Papilloma vs sarcoid 3. _Cases	March 23-25	[Assignments on Sakai: Fill in the blank and cases on Sakai lessons] [open date March 25/ due date April 5] [10 points]
[Module viruses of Ruminants] Lectures: 4 lectures on viruses of cattle and 2 lectures for small ruminants 1 lecture for cases Presented by system 1. __ 2. __ 3. __ 4. Etc.	[Module viruses of Ruminants] Lectures via Panopto: 1. FMD, BVD 2. Bov Leukosis, MCF, Shipping fever syndrome, IBR (other presentions of herpes) 3. Diarrhea in calves (rota,corona). Mammilitis and pseudocowpox. Prions 4. Bluetongue, OPP, OPA, CAE, border dz, Orf 5. Cases	March 26,27,30, 31 April 1 and 2	[Assignments on Sakai: Fill in the blank and cases on Sakai lessons] [Open date April 2 /Due date April 10] [10 points]
[Module viruses of Swine] Lectures: 4 lectures for viruses of swine presented by system 1 lecture on cases 1. __ 2. __ 3. __ 4. __	[Module viruses of swine] Lectures via Panopto: 1. Hog cholera and ASF, pseudorabies 2. Vesicular diseases (V. stomatitis, swine vesic dz, FMD) Circovirus (multiple present) 3. Influenza, PRRS, Parvo, Rota, TEGV and PED 4. Cases	April 3,6,7,8	[Assignment on Sakai: Fill in the blank and cases and Sakai lessons] [Open date April 8/ Due date April 13] [10 points]
Total lectures: 14 lectures, 3 cases in group modality	Total lectures (Panopto): 9 lectures, 3 sessions on cases presented to them (?) or on lessons active learning 1 zoom lecture for final review (?)		A forum will be open for each (Equine, Ruminants and swine) for students to post questions

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = __100_ *Total points breakdown:* Quiz 1: 20 points Midterm: 20 points Final: 50 points Take home assignments: 10 points	Total points = __100_ *Total points breakdown:* Quiz 1: 20 points Midterm: 20 points Final (open book): 20 points Take home assignments: 40 points

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

No CLO or LLOs will be omitted; instead the number of diseases covered will be decreased. The viral diseases presented will be those most frequently occurring in the USA and also those covered frequently in NAVLE. Diseases such as African horse sickness for example, and many others, will not be presented nor tested but are included in the long notes for them to have for future reference or if they are from countries outside North America.

- **For all the viral diseases covered in this course you need to: Know the etiologic agent, the general characteristics of the viral family it belongs to, the major clinical signs and differential diagnoses, the general pathogenesis, the diagnostics and the control measures, any particular detail pertinent to the specific disease** Tables summarizing this information have been provided, please make use of them

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Pathobiology

PTHB 515-3 CREDITS
Term 3 Veterinary Virology Syllabus
Fall 2019

I. Course Faculty and Staff Information

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

Email: scheetha@sgu.edu

Tel#1 (473) 444 –ext.3805

Office: SVM trailer

Office hours will be arranged to fit the class schedule

II. Course location

Sis Hall West

III. Prerequisite and/or co-requisite courses

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

IV. Required resources

Veterinary virology long notes

V. Recommended resources

"Fenner's Veterinary Virology" Machachlan & E. J. Dubovi (Eds.) 4th ed., 2010.

Relevant internet sources for updating the current scenario of viruses and viral diseases of veterinary importance. They include sites of avma, aaep, aaha, pigsite, cdc, google scholar, pubmed.

VI. Special accommodation

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

VII. Other requirements NA

VIII. Course rationale (catalogue course description)

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

By the end of the course students should be able to……..

- ❖ Explain the basic properties of viruses and their classification.
- ❖ Identify viral diseases affecting various species of animals and their diagnosis.
- ❖ Determine the advantages and limitations of vaccines and antiviral chemotherapeutics.
- ❖ 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

LO for lecture 1 : Introduction

Define virus

- ☐ Describe the components of the viral particle (genome, capsid, envelope) nature of the components and where do they derive from
- ☐ Define the concept of peplomer
- ☐ Define the concept of epitope
- ☐ Identify the types of viral genomes : DNA, RNA, segmented or not
- ☐ Identify who determines how to classify a virus, what is the suffix for every category

- [ ] Explain what is the base of viral classification these days
- [ ] Compare and contrast RNA from DNA viral families.
- [ ] Identify which viral families are DNA, RNA, segmented, naked or enveloped
- [ ] Distinguish viruses which replicate in the nucleus from those which replicate in the cytoplasm

LO for lecture 2 : Viral replication

Describe how do we study the replication of viruses

- [ ] Describe how do we study viral replication in viruses that do not grow in cell culture
- [ ] Explain the concept of susceptible and permissive cells
- [ ] Recognize the sequence of events of the one step growth curve, what do you measure?
- [ ] Explain what is the eclipse time
- [ ] List and describe the basic steps in viral replication
- [ ] Explain the concepts of genome replication, transcription and translation applied to viruses (including what is the source and what is the product).
- [ ] Determine what is required for attachment
- [ ] List and explain different methods of viral penetration
- [ ] Explain what does uncoating mean and how do virus translocate (cellular chaperones, signaling)
- [ ] Describe the replication of DNA viruses
- [ ] Describe the replication of RNA viruses
- [ ] Describe the concept of + and – sense RNA in replication
- [ ] Appreciate the replication mechanism of Retroviruses
- [ ] Explain what are the structures of mRNAs (cap, poly AAAA) and their functions
- [ ] Explain what the packing sequence in the viral genome is used for
- [ ] Describe how do most naked viruses exit the cell
- [ ] Describe how do enveloped viruses exit the cell

LO for lectures 3,4: Viral identification

Name and understand the reasons why we would need to reach a diagnosis at the individual or heard level or at the national level

- [ ] Discuss why is it important for the practicing veterinarian to collect and transport samples correctly

- [ ] List what are the desired characteristics for diagnostic tests
- [ ] Review from immunology: explain what is sensitivity and specificity of a diagnostic test
- [ ] Describe and compare laboratory methods used to identify viruses
- [ ] Define what is a direct method and which methods are available in virology
- [ ] Define what are indirect methods and which methods are available in virology
- [ ] Describe antigen detection methods (antigen ELISA, IF, IHC etc)
- [ ] List advantages and disadvantages of antigen detection methods
- [ ] Explain the concept of Electron microscopy (EM) and know its sensitivity and disadvantages. Explain what are IEM and SPIEM
- [ ] Describe the molecular methods of viral genome detection, PCR and RT-PCR general concept
- [ ] List the advantages and disadvantages of molecular methods
- [ ] List the uses of culture of viruses
- [ ] Describe the methods of culturing viruses (cells, embryonated eggs and lab animals)
- [ ] Compare and contrast the types of cell cultures and list the disadvantages of cell culture
- [ ] Identify the different cytopathic effects of viruses
- [ ] Describe the use of embryonated eggs, routes of inoculation in culturing viruses
- [ ] Discuss the use of lactating mice and other lab animals (in virology)
- [ ] Explain the use of serology in virology, interpret the IgG and IgM curve, differentiate 1ry and 2ry infection, interpret results and have the concept of paired samples.
- [ ] Explain the concept of hemagglutination inhibition, which viruses agglutinate RBCs
- [ ] Have the general idea on how Antibody ELISA, Western blot etc, work (what are they detecting?)
- [ ] Explain how virus neutralization test works, why is it so useful? and what is the limitation
- [ ] List and explain the disadvantages of serological methods
- [ ] Explain how are viruses quantified, plaque assay, etc.
- [ ] Describe what PFU stands for, and MOI, CPE, infectious dose and lethal dose
- [ ] List the general concepts on laboratory safety and laboratory hazards
- [ ] Describe what is BSL and why do we need to set the categories

LO for lecture 5: Viral Pathogenesis

Define viral pathogenesis

- [ ] Explain the concept of “Iceberg of viral infections”

- [ ] Describe the host-virus-environment interaction
- [ ] Explain the virulence and viral load concepts
- [ ] List host factors and environmental factors important to viral infections
- [ ] Identify the courses of viral infection and possible outcomes
- [ ] Describe the different viral entry ports
- [ ] Define cell tropism, primary replication, spread and secondary replication
- [ ] Explain the mechanisms of viral spread
- [ ] Describe the viral cellular pathogenesis, and its direct and indirect damage
- [ ] Define inclusion bodies, determine their origin and location
- [ ] Describe the clinical signs associated with viral diseases
- [ ] List the different mechanisms of viral shedding and understand their significance

LO for lecture 6: Viral Oncogenesis and viral immunology

Review immune system cell types, IgG types, cytokines, complement and MHC

- [ ] Explain the role of innate, cellular immunity and humoral immunity against viral infections
- [ ] Understand the benefits and complications of the host immune response to viruses
- [ ] Describe what an immune pathological response is and list what could be the causes
- [ ] Give examples of viral strategies evading the host's immune response
- [ ] Differentiate viral latency and persistence and outline the mechanisms employed by viruses
- [ ] Discuss what are passive immunity and maternal antibodies
- [ ] List what type of antibodies are present in colostrum and milk, what's the difference between species
- [ ] Define what the translocation cutoff is
- [ ] List and understand possible reasons of failure of maternal antibody transfer
- [ ] Explain the concept of maternal antibody interference with vaccinations
- [ ] Explain the concept of half-life of antibodies

LO for lecture 7: Viral Evolution

Define the concept of genotype and phenotype

- [ ] List and describe what types of point mutation substitutions there are
- [ ] Explain what indels are and how can they later the reading frame
- [ ] Define the concept of genetic drift and the types of mutations that cause it

- [ ] Define the concept of genetic shift and the types of events that cause it
- [ ] Explain what the difference between recombination and reassortment is
- [ ] Describe what defective interfering particles (DIP) are
- [ ] Compare and contrast the rate of mutation for RNA viruses and DNA viruses, why the difference?
- [ ] Define the concept of quasispecies within the host
- [ ] Explain what complementation and phenotypic mixing are. Why could they be useful?
- [ ] Discuss why do viruses mutate so fast

LO for lecture 8: Viral vaccines

Review vaccines from immunology class (term 2 notes)

- [ ] Name the factors involved when designing a vaccination program and schedule
- [ ] Explain the concept of herd immunity
- [ ] Explain why are multivalent vaccines useful
- [ ] Describe what the differences between live attenuated and inactivated vaccines are
- [ ] List and understand the types of attenuated vaccines
- [ ] List and understand the types of inactivated vaccines or viral proteins/subunits
- [ ] List and understand the types of vaccines produced by recombinant DNA techniques
- [ ] Explain what a DNA vaccine is
- [ ] Explain what an adjuvant is
- [ ] List what types of adjuvants are commonly used in veterinary vaccines
- [ ] Determine which types of vaccines require an adjuvant, why?
- [ ] Determine which types of vaccines require more booster shots and produces shorter immunity
- [ ] Identify which types of antibodies are stimulated with each type of vaccine. What do they depend on?
- [ ] List what are the advantages and disadvantages of each type of vaccine
- [ ] Explain who chooses the vaccine type and what is taken into account to do so
- [ ] Explain who determines the application schedule for a specific vaccine
- [ ] Define who determines which route a vaccine will be delivered
- [ ] Explain what does under-attenuation mean; genetic instability and heat liability
- [ ] Explain what the difference between vaccine efficacy and vaccine safety is
- [ ] List and explain what other factors affect the vaccines' efficacy

- [ ] List and explain what other factors affect the vaccines' safety?
- [ ] Explain why is it hard to develop antiviral drugs and why are many of them prodrugs
- [ ] Discuss why are antivirals not commonly used in veterinary medicine
- [ ] Explain why is it important to know and preserve (or not) the stability of viral infectivity
- [ ] Explain how does temperature affect viral infectivity
- [ ] List the different types of viral disinfectants and their use, as well as their major characteristics

LO for lecture 9: Viral epidemiology

Describe what viral epidemiology studies

- [ ] Define the following terms: incidence, prevalence, morbidity, mortality, epidemic, endemic, containment, elimination, eradication
- [ ] List horizontal modes of transmission
- [ ] List vertical modes of transmission
- [ ] Define zoonosis
- [ ] Define Arbovirus
- [ ] Explain why are some arboviruses NOT zoonotic
- [ ] Identify viral patterns of disease, what other factors may affect them?
- [ ] Explain what a notifiable disease is
- [ ] List what are required for surveillance of viral diseases and explain why do we need a laboratory diagnosis
- [ ] Determine what control measures can be established during an outbreak to control transmission
- [ ] Identify what characteristics can determine if it is feasible to eradicate a viral disease

LO for lectures 11-12 Viral families of veterinary importance

For each viral family: Identify generalizations and exceptions

- List the general characteristics (genome, enveloped or naked)
- Hosts and clinical signs
- Diagnostic tests available
- Control

LO for all other lectures:

- **For all the viral diseases covered in this course you need to: Know the etiologic agent, the general characteristics of the viral family it belongs to, the major clinical**

signs, the general pathogenesis, the diagnostics and the control measures, any particular detail pertinent to the specific disease Tables summarizing this information have been provided, please make use of them

This syllabus is a guide; some lectures may take more or less time depending upon class participation.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
CLOs 1,2,3,4	**A. Core Medical Knowledge** (PLOs 3, 4 5 6) **B. Core Professional Attributes** **C. Core Clinical Competencies (Skills)**

XII. Course Schedule

Date		Topic
Jan 20	1	Introduction to virology
Jan 22	2	Viral replication
Jan 24	3	Viral identification
Jan 27	4	Viral pathogenesis
Jan 29	5	Viral oncogenesis and Immuno
Jan 31	6	Viral evolution
Feb 3	7	Viral vaccines
Feb 5	8	Viral epidemiology
Feb 6	9	Viral families
Feb 10	10	Review
Feb 14		Quiz 1
Feb 24	11	Canine 1
Feb 25	12	Canine 2
Feb 26	13	Canine 3
Feb 27	14	Feline 1
Feb 28	15	Feline 2
Mar 2	16	Feline 3
Mar 3	17	Cases
Mar 4	18	Review
Mar 5	19	
Mar 6	20	
Mar 11		Midterm

Mar 17	21	Equine 1
Mar 18	22	Equine 2
Mar 19	23	Equine 3
Mar 20	24	Cases equine
Mar 23	25	Ruminants 1
Mar 24	26	Ruminants 2
Mar 25	27	Ruminants 3
Mar 26	28	Ruminants 4
Mar 27	29	Cases ruminants
Mar 30	30	Prions
Mar 31	31	Small ruminants 1
April 1	32	Small ruminants 2
April 2	33	Swine 1
April 3	34	Swine 2
April 6	34	Swine 3
April 7	35	Swine 4
April 8	36	Cases small ruminants and swine
April 9	37	Review
April 14		Final

XIII. Grading and Assessment Policy:

The examinations will consist of multiple choice questions. The examinations will cover only the materials presented in the lectures but outside reading is encouraged. The content of the examinations will be based on all the material covered in lecture from the **long notes**, Powerpoint presentations, as well as didactic material distributed through the SAKAI network 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 books and files uploaded on the SAKAI network if needed.

EXAMINATION SCHEDULE AND POINTS

Exam	Date	Time	Points
Quiz 1	Sept 5 th	1:30 pm	20
Midterm	Oct 8 th	1:30 pm	20
Final	Dec 4 th	1:30 pm	50

The three exams add to 90 points, the other 10 points will be given for extra activities such as take home assignments for a total of 100 points.

These are **NOT** bonus points. There will be 4 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 1 or 2 point each of your final grade and these are awarded for professionalism of meeting a deadline and not content (for which SAKAI provides immediate feedback of the correct answer). Formative assessments such as group discussions, take home assignments, minute papers, will not be graded but they will provide a basis for self-evaluation, reflection, and peer review.

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 other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

The course long notes and lecture slides will be posted on Sakai, and lectures recordings will be available on Panopto. The exam material will come from LONG notes, ppt from lectures and in class discussions. A review session of the material covered in each exam will be offered before each exam. These have been helpful to the students who have attended in the past. Additional office hours can be made by appointment.

The material for this course is presented in different formats (long notes, slides, tables, class activities, take home assignments) which may at times be repetitive. It aims to

provide students with auditory, visual, reading/writing, kinestetic (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.** 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.
- **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.

XV. Instructor's expectations of the student

Students are expected to read lecture notes and complete assignments and come prepared to answer questions. Clicker questions will be included in some of the lectures so students should make sure their devices are working correctly in order to participate.

XVI. Professionalism statement

Please exhibit professional behavior in class. Students are expected to arrive on time for lectures and exams. The consumption of food is not allowed during lectures. Water and non-alcoholic drinks in spill-proof containers are allowed. The use of mobile phones is not allowed during class and exams. Exceptions to these rules have to be discussed with the course director. The lecturer may ask students who breach any of the above rules to leave the class.

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

Students are expected to attend all classes. Although attendance may not be recorded at every academic activity, attendance may be taken randomly through

Turning technologies (clicker questions), specially on dates (green highlight) that group activities/cases will be carried on. Clicking for someone else is not acceptable, both parties: the one who is missing class and the one who is clicking for someone else are in the wrong. Students' absence may adversely affect their academic status as specified in the grading policy. If the student is unable to attend they should inform the course director and provide a reason.

If absence from individual classes, examinations, and 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.
Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University. A make-up exam will be given ONLY when an excuse from the student clinic is presented. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic **PRIOR** to the time of the test. Excuses that are issued after the examination 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. 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 a year ONLY, and then you need a medical leave of absence.
Any make-up exams (quizzes, midterm, final) will be given as an **oral 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. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam.

Prior to Exam Day

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

3. 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.
4. 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.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.

15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to
37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
39. Examinees found violating any of the Examination Policies and Procedures including
40. attempting to disable or tamper with Examplify's security features will be subject to
41. academic disciplinary action.
42. 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

    *No other personal belongings will be permitted.

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.

SVM Course Code: PTHB 516, Avian, Fish and Exotic Animal Diseases
Course Director: Marancik
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Reptile/Amphibian Medicine Lectures: 1. Intro to Amphibian Medicine 2. Reptile Biology and Husbandry 3. Reptile Diagnostics and Therapeutics 4. Reptile Diseases 5. Reptile Anesthesia and Surgery	[Reptile/Amphibian Medicine Lectures via Panopto: 1. Intro to Amphibian Medicine 2. Reptile Biology and Husbandry 3. Reptile Diagnostics and Therapeutics 4. Reptile Diseases 5. Reptile Anesthesia and Surgery	March 23-27	Open note, short answer assessments Open March 23rd/Due April 20th 10 points
Small Companion Mammal Medicine Lectures: 1. Rabbit Medicine 2. Guinea Pig Medicine 3. Small Rodent Medicine 4. Ferret Medicine Lectures on Small Herbivore Dental Disease and GI Stasis, Chinchilla Medicine, Sugar Glider Medicine, African Hedgehog Medicine, and Primate Medicine are included for those who would like to look through the information.	Small Companion Mammal Medicine Lectures via Panopto: 1. Rabbit Medicine 2. Guinea Pig Medicine 3. Small Rodent Medicine 4. Ferret Medicine	March 30-April 3rd	Open note, short answer assessments Open March 23rd/Due April 20th 10 points
Total lectures: 13	Total lectures (Panopto): 9		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = ___ *Total points breakdown:*	Total points = ___ *Total points breakdown:* [include added assignments/low stakes assessments]

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. _____
2. _____
3. Etc.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Department of Pathobiology

***AVIAN, FISH AND EXOTIC ANIMAL DISEASES* (3 credits)**

PTHB 516 Term 4

Spring 2020

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 will be arranged by each professor to fit the class schedule. Additional office hours can be made by appointment and arrangements can be made with technical staff to access the laboratories after office hours and during weekends as needed.

Dr. Marie Rush, DVM, DACZM, Visiting Professor
Email: antechimagingservices.com
Dr. Hugh Ferguson, BVM&S. PhD, Dipl ACVP, MRCVS, FRCPath, Part-Time
Email: hferguson@sgu.edu
Dr. Dan Johnson, DVM, DABVP, Visiting Professor
drdan@avianandexotic.com
Dr. Alfred Chikweto BVM, MSc, Associate Professor
Email: achikweto@sgu.edu
Tel: 444-4175
Ms. Jonnel Edwards, BSc, MSc, Lab Demonstrator
Email: jedward6@sgu.edu

II. Course location

All lectures will be given in the Raymond and Jan Sis Lecture Hall
The fish laboratory will be held in the upstairs room of the Aquatic Animal Medicine Research Laboratory.

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 Pocket Pets and Small 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. 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

1. You are required to wear proper protective equipment during the laboratory sessions including laboratory coats, gloves, and closed toed shoes. For the necropsy laboratory, the protective attire will include scrubs and protective rubber footwear (boots).
2. Identification badges should be worn during the laboratory session.
3. Laboratory resources like chairs, microscopes, videos, VCR, glass slides etc. are expensive and limited in number. Care should be taken not to damage them to ensure their safety for future use.
4. Leave your working place clean and tidy after the laboratory session.
5. Wash your hands thoroughly before leaving the laboratory.
6. Eating or drinking (except water) is strictly prohibited in the lecture hall and laboratory.

VIII. Course rationale

Non-traditional species represent an important and growing segment of veterinary medicine. This course provides a foundation in exotic animal medicine, including etiology, pathogenesis, diagnosis and treatment of avian, fish and exotic animal species. This includes species that are commonly encountered as pets, 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, fish, 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	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	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	1. Recognize the ethical, moral and psychological implications of euthanasia 2. Generate an understanding of the needs for and difficulties with euthanasia.
11	Fish Diseases	1. Describe the various ways in which the veterinary profession are and can become increasingly involved with fish 2. Illustrate the various ways fish are important in today's world.
12	Fish Diseases	1. Compare and contrast the anatomical differences between fish and other vertebrates, particularly mammals. 2. Explain how and why fish tissues respond a certain way to stimuli and the consequences of those responses
13	Fish Diseases	1. Compare and contrast the anatomical differences between fish and other vertebrates, particularly mammals. 2. Explain how and why fish tissues respond a certain way to stimuli and the consequences of those responses
14	Fish Diseases	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
15	Fish Diseases	1. Distinguish important bacterial diseases of food and pet fish 2. Describe the pathological impact that these diseases can have on fish health 3. Identify which pathogens can be zoonotic.
16	Fish Diseases	1. Distinguish the clinical presentations of the important bacterial diseases of food and pet fish 2. Describe the pathological impact that these diseases can have on fish health 3. Identify which pathogens can be zoonotic
17	Fish Diseases	1. Explain how viral diseases of fish are becoming limiting factors in food fish production 2. Recognize the clinical signs of viral diseases in fish 3. Explain the general pathological impact of viruses in fish
18	Fish Diseases	1. Explain how viral diseases of fish are becoming limiting factors in food fish production 2. Recognize the clinical signs of viral diseases in fish

		3. Explain the general pathological impact of viruses in fish
19	Fish Diseases	1. Explain the physiologic and husbandry conditions that predispose fish to parasitic disease. 2. Distinguish the major parasites effecting the gill and skin of fish based off of clinical presentation and describe how you would confirm the diagnosis. 3. Compare and contrast the effect that each parasite has on fish health
20	Fish Diseases	1. Distinguish the major parasites effecting systemic organs based off of clinical presentation and describe how you would confirm the diagnosis 2. Compare and contrast the effect that each parasite has on fish health
21-25	Reptiles and Amphibians	1. Identify the unique anatomy and medical, 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 reptiles and amphibians.
26-35	Small Mammals	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	Commercial Birds	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.
37	Commercial Birds	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.
38	Commercial Birds	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.
39	Commercial Birds	1. Name the diseases caused by Escherichia coli in avian species. 2. Describe the mode of transmission of *E. coli* 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 *E. coli* infection in avian species.
40	Commercial Birds	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.
41	Commercial Birds	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.
42	Commercial Birds	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.
43	Commercial Birds	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.
44	Commercial Birds	1. Describe etiology and epidemiology of fowl pox, infectious bronchitis (IB) and Egg drop syndrome (EDS 76). 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.
45	Commercial Birds	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.

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, fish, 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 Core Clinical Competencies
Recognize unique husbandry requirements for each group of animals and disease manifestations if conditions are not adequately met.	Core Medical Knowledge Core Clinical Competencies
Determine appropriate diagnostic tests to confirm diagnoses of infectious and non-infectious disease.	Core Medical Knowledge Core Clinical Competencies
Determine treatment and biosecurity strategies in production, research, and pet animal environments including for zoonotic pathogens.	Core Medical Knowledge Core Clinical Competencies

XII. Course Schedule

Week	Lecture	Day/Date	Time	Lecturer	Topic
1	1	Mon 20 Jan	9:30 am	Dr. Rush	Pet Birds
	2	Tues 21 Jan	9:30 am	Dr. Rush	Pet Birds
	3	Wed 22 Jan	9:30 am	Dr. Rush	Pet Birds
	4	Thurs 23 Jan	9:30 am	Dr. Rush	Pet Birds
	5	Fri 24 Jan	8:30 am	Dr. Rush	Pet Birds
2	6	Mon 27 Jan	9:30 am	Dr. Rush	Pet Birds
	7	Tues 28 Jan	9:30 am	Dr. Rush	Pet Birds
	8	Wed 29 Jan	9:30 am	Dr. Rush	Pet Birds
	9	Thurs 30 Jan	9:30 am	Dr. Rush	Pet Birds
	10	Fri 31 Jan	9:30 am	Dr. Rush	Pet Birds
Quiz 1 Pet birds Monday 3 Feb 8:30 am Venue TBA					
4	11	Mon 10 Feb	9:30 am	Dr. Ferguson	Fish
	12	Tues 11 Feb	10:30 am	Dr. Ferguson	Fish
	13	Wed 12 Feb	9:30 am	Dr. Ferguson	Fish
	14	Thurs 13 Feb	10:30 am	Dr. Ferguson	Fish
	15	Fri 14 Feb	8:30 am	Dr. Ferguson	Fish
5	16	Mon 17 Feb	11:30 am	Dr. Ferguson	Fish

	17	Tues 18 Feb	9:30 am	Dr. Ferguson	Fish
	18	Wed 19 Feb	9:30 am	Dr. Ferguson	Fish
	19	Thurs 20 Feb	9:30 am	Dr. Marancik	Fish
	20	Friday 21 Feb	9:30 am	Dr. Marancik	Fish

6	21	Mon 24 Feb	9:30 am	Dr. Chikweto	Commercial Birds
	22	Tues 25 Feb	9:30 am	Dr. Chikweto	Commercial Birds
	23	Wed 26 Feb	9:30 am	Dr. Chikweto	Commercial Birds
	24	Thurs 27 Feb	8:30 am	Dr. Chikweto	Commercial Birds
	25	Fri 28 Feb	9:30 am	Dr. Chikweto	Commercial Birds

7	26	Mon 3 Mar	9:30 am	Dr. Chikweto	Commercial Birds
	27	Tues 4 Mar	9:30 am	Dr. Chikweto	Commercial Birds
	28	Wed 5 Mar	9:30 am	Dr. Chikweto	Commercial Birds
	29	Thurs 6 Mar	9:30 am	Dr. Chikweto	Commercial Birds
	30	Fri 7 Mar	9:30 am	Dr. Chikweto	Commercial Birds
Exam 1 (MIDTERM) Fish and Commercial Birds Thursday 12 March 8:30 am Venue TBA					

9	31	Mon 16 Mar	9:30 am	Dr. Johnson	Reptiles and Amphibians
	32	Tues 17 Mar	9:30 am	Dr. Johnson	Reptiles and Amphibians
	33	Wed 18 Mar	9:30 am	Dr. Johnson	Reptiles and Amphibians
	34	Thurs 19 Mar	9:30 am	Dr. Johnson	Reptiles and Amphibians
	35	Fri 20 Mar	TBD	Dr. Johnson	Reptiles and Amphibians

10	36	Mon 23 Mar	9:30 am	Dr. Johnson	Companion Animals
	37	Tues 24 Mar	9:30 am	Dr. Johnson	Companion Animals
	38	Wed 25 Mar	9:30 am	Dr. Johnson	Companion Animals
	39	Thurs 26 Mar	9:30 am	Dr. Johnson	Companion Animals
	40	Fri 27 Mar	11:30 am	Dr. Johnson	Companion Animals

11	41	Mon 30 Mar	9:30 am	Dr. Johnson	Companion Animals
	42	Tues 31 Mar	9:30 am	Dr. Johnson	Companion Animals
	43	Wed 1 Apr	9:30 am	Dr. Johnson	Companion Animals
	44	Thurs 2 Apr	TBD	Dr. Johnson	Companion Animals
	45	Fri 3 Apr	9:30 am	Dr. Johnson	Companion Animals
Exam 2 (FINAL) Reptiles, Amphibians and Companion Animals Mon 6 Apr 8:30am Venue TBA					

Schedule for Laboratory

Lab Group	Day	Date	Time	Topic/Venue	Lecturer
Group A	Fri	21 Feb	1:30 pm	Fish/AAMRL	Dr. Ferguson, Dr. Marancik, Ms. Edwards
Group B	Fri	21 Feb	2:45 pm	Fish/AAMRL	Dr. Ferguson, Dr. Marancik, Ms. Edwards
Group C	Fri	21 Feb	4:00 pm	Fish/AAMRL	Dr. Ferguson, Dr. Marancik, Ms. Edwards

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 ONE quiz and 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:
Quiz 1: 20 Points (Pet Birds)
Exam 1 (Mid-Term): 40 Points (Fish and Commercial Birds)
Exam 2 (Final): 30 points (Reptiles/Amphibians and Small Mammals)

Total points: 90

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.

XIII. Instructor's expectations of the student

The student is expected to attend and come prepared to all lectures and laboratories. 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

All students are expected to be familiarized with the examination guidelines issued by the office of the Dean of the School of Veterinary Medicine. All students are expected to attend all assigned academic activities for all courses currently registered. Scheduling of examinations is at the discretion of the University. University policy dictates that an examination cannot be given prior to the scheduled date. Students 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.

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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.

4. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams only in the examination venue and not in
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.

20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to
37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
39. Examinees found violating any of the Examination Policies and Procedures including
40. attempting to disable or tamper with SofTest's security features will be subject to
41. academic disciplinary action.
42. 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

*No other personal belongings will be permitted.

XVIII. Copyright policy

SVM Course Code: _PTHB532_____
Co-Course Directors: M. Wilkerson/R. Kabuusu
Dawn Seddon's lectures
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
[Course Topic/Module] Lectures: Lectures via Panopto: 1. Urinary system 2. Urinary system 3. Urinary system 4. Electrolytes 1 incl osmolality 5. Electrolytes 2 Cl, HCO3	[Course Topic/Module] Lectures via Panopto **Lectures 27 - 31:** 1. Urinary – Renal tests 2. Urinary chemistry 3. Urinary sediment 4. Electrolytes 1 incl osmolality 5. Electrolytes 2 Cl, HCO3	**Week 10** **March 23-27** Renal and Electrolytes Panopto Lectures (New).	**[Cases for evaluation over Lectures 27 -31– open book short answer]** **[Open March 23 – April 1 Due Date April 1.]** [**20 points**]
[Course Topic/Module] Lectures: 1.Blood gases & Acid base 2. Ca, Vit D, PTH, PTHrp 3. Ca, Vit D, PTH, PTHrp,P, Mg 4. Enzymes. Muscle 5. Liver	[Course Topic/Module] Lectures via Panopto: **Lectures 32-37** 1.Blood gases & Acid base 2. Ca, Vit D, PTH, PTHrp 3. Ca, Vit D, PTH, PTHrp,P, Mg 4. Enzymes. Muscle 5. Liver	**Week 11** **March 30 -April 3** Calcium, Mag, Phos and Hormone Ezymes, Muscle, and Liver Panopto Lectures (Fall 2019)	**[Cases for evaluation over Lectures 32 -35– open book short answer]** **[Open March 30 – April 8 Due Date April 8.]** [**20 points**]
[Course Topic/Module] Lectures: 1. Liver 2. Lipids 3. Exo panc, GI	[Course Topic/Module] Lectures via Panopto: **Lectures 38 -40** 1. Liver 2. Lipids 3. Exo panc, GI	**Week 12** **April 6 – April 9** Liver Lipids Exo panc, GI (Panopto lectures Fall 2019)	**[Cases for evaluation over Lectures 36-40– open book short answer]** **[April 3 – April 15 Due Date April 15]** **[20 Points]**
Lectures 1. Exoc. Panc/GI 2. Endo. Panc. 3. Glucose	**Lectures 41-44** 1. Exoc. Panc/GI 2. Endo. Panc. 3. Glucose	**Week 13** **April 15 – April 17** Exoc panc / GI Endo pancreas, Glucose (Panopto lectures Fall 2019)	

Lectures 1. Adrenal 2. Adrenal 3. Adrenal 4. Thyroid Hormones 5. Thyroid Hormones	**Lectures 45 - 49** 1. Adrenal 2. Adrenal 3. Adrenal 4. Thyroid Hormones 5. Thyroid Hormones	**Week 14** **April 20 – April 24** Adrenal hormones Thyroid hormones	[**Cases for evaluation – open book short answer over Lectures 41-49]** **[April 15 – May 4** **Due date – May 4]** **[20 Points]**
Total lectures: 21	Total lectures (Panopto): 21		**80 points**

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _162__ *Total points breakdown:* Quiz 1 (Examsoft) 20 points Mid-term exam (Examsoft) 50 points Quiz 2 (Examsoft) 20 points Final exam (Examsoft) 50 points Hematology case interpretations 8 points Diagnostic cytology cases 4 points Clinical chemistry cases 10 points **Total 162 points**	**Total points = _122__** *Total points breakdown:* [include added assignments/low stakes assessments] *Quiz 1 (Examsoft)* *completed 20 points* *Lab Assignments Completed* Hematology case interpretations completed 8 points Diagnostic cytology cases completed 4 points ***Midterm makeup for hemostasis and cytology To be created by R. Kabuusu MCQ in Sakai 10 points*** **Planned Post Midterm Open Book Assessments Short Answer questions of posted Case interpretations - Dr. Seddon's Section** 1. Renal interpretation **20 points** 2. Electrolytes, Acid-Base, Minerals, Enzymes, Muscle Lab data interpretation **20 points** 3. Liver, Lipid, Exocrine pancreas, GI case interpretation **20 points** 4. Endocrine (Endocrine pancreas, Adrenal/thyroid) case interpretations **20 points** **Total 122 points**

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

Nothing omitted but emphasis will be place during lectures what students need to concentrate on.

*Slight Modifications are possible in the next week

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
PATHOBIOLOGY DEPARTMENT
CLINICAL PATHOLOGY (4 credits)
PTHB 532 TERM 3

SPRING 2020

I. Course Faculty and Staff Information

Course instructors: Melinda Wilkerson, DVM, MS, PhD, ACVP (Anatomic & Clinical pathology)
Professor and co-course director
Office location: SVM Pathobiology Trailer Block behind Anatomy
Email: mwilkers@sgu.edu
Office telephone number: +1473 439 2000 xtn 3673
Office hours: email to schedule an appointment

Richard M. Kabuusu, DVM, MPH, CPH, PhD
Professor and co-course director
Office location: SVM Pathobiology Trailer Block behind Anatomy
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Office telephone number: +1473 439 2000 xtn 3672
Office hours: schedule an appointment via email

dawn Seddon, BVSc, MSc (VetPath), ACVP (Clin Path), MRCVS, NHD Micro
Professor
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Office hours: email to schedule an appointment

Laboratory Technicians: Ms. Ruth Alexander, BSc.
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Office telephone number: +1473 439 2000 xtn 3489

Ms. Lucinda Ogilvie
Office location: Clinical Pathology Laboratory
Email: logilvie@sgu.edu
Office telephone number: +1473 439 2000 xtn 3540

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

All lectures will be conducted in Ray and Jan Sis Lecture Theatre 2

Laboratory sessions requiring microscopes will take place in the Bacteriology Teaching Lab

Lab 1 will also require subgroups to move to the clinical pathology diagnostic lab

Case discussion labs will be held in Charter Hall lab

III. Pre- and co-requisite courses

Physiology

Basic cellular processes

All present term three courses

IV. Required resources

Long class notes (where provided) and power-point lectures

Laboratory manual for Veterinary clinical pathology Spring 2020

V. Recommended resources

Thrall MA, Weiser G, Allison RW and Campbell TW. (2012). Veterinary hematology and clinical Chemistry, 2nd Edition. Wiley-Blackwell.

Stockham SL and Scott MA (2008). Fundamentals of veterinary clinical pathology. 2nd Edition. Blackwell Publishing (Dr. Wilkerson follows this textbook very closely**)

*eclinpath website; online textbook. Website: http://www.eclinpath.com/

Villers E, Ristic J and Blackwood L (2016). BSAVA manual of canine and feline clinical pathology. 3rd Edition.

https://mycampus.sgu.edu/group/mycoach-vet/integrating-example

VI. Special accommodation

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

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

VII. Other requirements

Proper laboratory attire (See first page of the Spring 2020 Lab manual for details)

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-level outcomes

This introductory course is intended to provide the student with content, laboratory and critical thinking skills to:

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, cavitary effusions, and aspirates from lesions in tissues (marrow, lymph nodes, & common inflammatory or neoplastic lesions.

Detail description of CLOs

CLO1. Explain p*re-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 show 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 pathogeneses, 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, cavitary effusions, and aspirates from lesions in tissues (marrow, lymph nodes, & common inflammatory or neoplastic lesions.

Lesson-level outcomes

1. **Introductory concepts**

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)
c. Define reference intervals, reference range, and differentiate Gaussian from non-Gaussian reference interval distributions of analytes
d. Distinguish between preanalytical, analytical, and post analytical errors
e. Distinguish between precision, accuracy, analytical sensitivity, analytical specificity and detection limit

2. **Erythrocytes (Physiology & Anemia Classification)**

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, polychromatophils and identify regenerative or nonregenerative anemias in laboratory data using [Retic] or marrow responsiveness.
d. Provide a classification of the anemia using morphologic criteria (Wintrobe Indices) or pathophysiologic criteria

3. **Erythrocytes (morphology, parasites)**

a. Identify and describe importance of reticulocytosis, polychromasia, discocytes, rubricytosis, hypochromia, anisocytosis, macrocytes, microcytes, spherocytes, inclusions other than parasites: basophilic stippling & Howell jolly bodies
b. Identify and define significance of abnormal erythrocyte shapes: poikilocytes, schizocytes, spherocytes, ecchinocytes, elliptocytes, codocytes, acanthocytes, eccentrocytes, pyknocytes, keratocytes
c. Identify erythrocyte parasites
    - *(Anaplasma marginale*, *A. centralie*, *Cytauxzooan*, *Babesia*, *Mycoplasmas sp.)*

4. **Erythrocytes (Analytical principles of Wintrobe Indices and Nonregenerative anemia)**

a. Recognize which analytes impedance analyzers measure (MCV, RBC, Hgb)
b. Recognize which analytes are calculated HCT, MCHC, MCH and what they measure.
c. Be able to calculate absolute reticulocyte concentration
d. Identify the disorders associated with nonregenerative anemias and describe the pathogenesis of the anemia in inflammation, renal disease, erythroid hypoplasia and ineffective erythropoiesis

5. **Erythrocytes (regenerative anemias - hemolytic 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. Erythrocytes (Regenerative anemias – hemolytic anemic disorders)

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:
    - erythrocyte metabolic defects (Heinz body anemia, hypophosphatemia, eccentrocytic, L-sorbose toxicity)
    - erythrocyte fragmentation
    - bacterial and parasitic
    - heparin-induced anemia

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 analyzes* (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 (physiology, migration, analytic principles, and neutrophil shifts)

a. Describe the myeloid bone marrow pools and time spent in each pool in health and during inflammation
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
e. Define left and right shifts of neutrophil concentrations

10. Leukocytosis (Neutrophilia, lymphocytosis, monocytosis, eosinophilia, and basophilia)

a. Recognize conditions that cause a left shift (inflammation) or right shift (steroids)
b. Describe, define, and identify toxic neutrophils
c. Describe pathogenesis of acute inflammatory neutrophilia, chronic inflammatory neutrophilia, steroid or stress neutrophilia, or physiologic neutrophilia
d. List diseases and conditions that cause lymphocytosis.
e. Describe pathogenesis of chronic lymphocytosis, physiologic (shift) lymphocytosis, and lymphoproliferative lymphocytosis
f. List common causes of monocytosis, eosinophilia, and basophilia
g. Describe and identify reactive lymphocytes

11. Leukopenia

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

a. Describe the physiology and functions of platelets
b. Describe the analytical principles of determination of platelet concentration via impedance, optical, and manual methods
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 medicated and consumptive thrombocytopenia.
g. Describe the pathogenesis of inflammatory, Fe deficiency, and exercise induced thrombocytosis

14. Proteins 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
    - Recognize interferences in refractometry and BCG
    - Be able to interpret serum protein electrophoresis (SPE) patterns
    - Differences between total solids concentration and total protein concentration
e. Define and explain processes that cause dysproteinemias
    - Nonselective hyperproteinemias and pathologic states
    - Selective hyperproteinemias and pathologic states
    - Nonselective hypoproteinemias and pathologic states
    - Selective hypoproteinemias and pathologic states

15. Proteins 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 (pseudohyperalbuminemia)

16: Primary hemostasis

a. Describe primary, secondary and tertiary hemostasis
b. Outline the main goal of primary hemostasis
c. List hemorrhagic patterns associated with primary hemostatic disorders
d. Describe the main clinical pathology abnormalities of primary hemostatic disorders
e. List qualitative tests used to assess primary hemostatic disorders
f. List quantitative tests used to assess primary hemostatic disorders
g. Compare thrombocytopenia versus thrombocytopathy

17: Secondary hemostasis

a. Outline the main goal of secondary hemostasis
b. List hemorrhagic patterns associated with secondary hemostatic disorders
c. Describe the main clinical pathology abnormalities of primary hemostatic disorders
d. List tests used to assess intrinsic and common pathway disorders
e. List tests used to assess extrinsic and common pathway disorders
f. Outline the main regulatory proteins of the coagulation cascade
g. List one major dz/ condition that affects intrinsic and extrinsic pathway

18: Tertiary hemostasis and thrombosis

a. Outline the main goal of tertiary hemostasis
b. List tests used to assess tertiary hemostasis
c. Outline the main regulatory proteins of the tertiary hemostasis
d. List one major disease involved
e. Interpret CBC and coagulation test results in clinical cases of bleeding

19: Principles of cytological examination (consolidate)

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 cavitary 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 transduates
d. Differentiate between neoplastic and inflammatory effusions
e. Recognize mesothelial cells
f. List several causes of protein-poor transduates
g. List several causes of protein-rich transduates
h. List several causes of exudates
i. List major causes of septic exudates

24: Body cavitary effusions

a. Differentiate between neoplastic and inflammatory effusions
b. Differentiate iatrogenic from pathologic hemorrhage
c. Differentiate chyle from pseudochyle
d. Classify equine peritonitis based on cytological findings
e. Describe cytologic features of FIP
f. Describe cytologic features in uropreritoneum
g. Describe cytologic features in bile peritonitis

25: Synovial fluid cytology and cerebrospinal fluid

h. Describe the collection and handling of synovial fluid
i. Describe the major cells in normal joint fluid
j. Describe the major cells in acute and chronic arthritis
k. Differentiate thixotropism from mucin clot)
l. Describe techniques unique to joint fluid analysis
m. Describe the collection and handling of CSF samples

n. Explain the basis for urgent analysis of CSF
o. List the key elements and unique tests of CSF analysis
p. Describe the common findings in “normal” CSF
q. 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)

Midterm Exams

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;
    - Describe mechanisms of pre-renal, renal, and post renal azotemia
    - 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

29. Explain mechanisms of polyuria in the following disorders (See recording of lecture 26):

- Chronic renal failure
- Diabetes Mellitus
- Central Diabetes Insipidus
- Nephrogenic Diabetes Insipidus
- Hyperadrenoadrenocorticism
- Hypoadrenocorticism
- Hypercalcemia
- Hepatic insufficiency

30. Electrolytes, total body sodium, potassium, water, osmolality

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

d. Be able to interpret K data from a clinical scenario, recognize abnormalities and provide possible pathogenesis (mechanisms).
e. Calculate and interpret osmolality
f. Interpret serum chemistry data (especially electrolyte and total solute concentrations) that indicate or suggest:
    - Different forms of dehydration (i.e., hypertonic, isotonic, & hypotonic)
    - Hypoadrenocorticism
    - Metabolic acidoses and alkaloses
    - Uroperitoneum
    - Oliguric or anuric renal failure
    - Anorexia
    - Ketoacidotic diabetes mellitus
    - Equine sweating
    - Upper gastro-intestinal obstruction in dogs, cats, or ruminants
    - Lactic acidosis
    - Ethylene glycol toxicosis

31. Chloride and bicarbonate (HCO_3^- or TCO_2), Anion Gap

a. 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).
b. 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.
c. Calculate the AG

32. 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 $Paco_2$
    - Increases and decreases in plasma Pao_2
    - Increases and decreases in plasma HCO_3– concentrations
    - Increases and decreases in plasma total CO_2 concentrations

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 $PaCo_2$ due to sample being exposed to air or when collected with excess heparin

- Increased PaO_2 due to sample being exposed to air or when collected with excess heparin
- Decreased PaO_2 and decreased pH when there is delayed analysis of a heparinized blood sample
- Increased $PaCo_2$ due to respiratory disease or disorders that restrict respiration or as a compensation to alkalemia
- Decreased $PaCo_2$ 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 PaO_2 due to pulmonary disease
- Increased PaO_2 during gas anesthesia
- PaO_2 is within reference intervals when anemia is causing hypoxia
- Tissue hypoxia when there is not hypoxemia

33. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

a. Explain the difference in the regulation of [fCa^{++}] in horses compared to other species.
b. 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 Ca^{2+} concentrations due to acidemia or alkalemia
   - Hyperphosphatemia due to dehydration, renal failure, uroperitoneum, urinary tract obstruction, hypoparathyroidism, and myopathies
   - Hypophosphatemia due to anorexia, hyperparathyroidism, hyperinsulinism, and milk fever
   - Hypermagnesemia due to renal failure
   - Hypomagnesemia due to grass tetany or prolonged anorexia
   - Increased iPTH concentrations due to parathyroid neoplasm, chronic renal disease, or a diet with a low Ca^{2+}:PO4 ratio, and Increased PTHrp concentrations due to malignancies

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

a. Explain, list, or recognize the reasons for hypocalcemia or hypomagnesemia due to hypoproteinemia and/or hypoalbuminemia
b. Hyperphosphatemia due to in vitro hemolysis or delayed blood sample handling
c. Pseudohypocalcemia due to collection of blood into an EDTA anticoagulant
d. Decreased fCa^{2+} concentration when blood sample collected with excess heparin
e. Altered fCa^{2+} concentrations when blood or serum sample is not handled anaerobically

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

a. Interpret serum [tCa^{++}] or plasma calcium [fCa^{++}], phosphorus, magnesium, and their regulatory hormone data including:

- Hypercalcemia, hypocalcemia, and alterations in free Ca^{2+} concentrations
- Hyperphosphatemia and hypophosphatemia
- Hypermagnesemia and hypomagnesemia
- Increases in iPTH or PTHrp concentrations, decreases in iPTH concentrations, or iPTH concentrations WRI with a concurrent hypercalcemia

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

a. Recognize typical total calcium and phosphorus concentrations, and their regulatory hormone [iPTH, PTHrp, vit. D] data that suggest or indicate:

- Primary hyperparathyroidism
- Primary hypoparathyroidism
- Humoral hypercalcemia of malignancy
- Secondary hyperparathyroidism
- Hypervitaminosis D
- Renal insufficiency/failure in dogs, cats, cattle, and horses
- Milk fever

35b. Calcium, magnesium, Vit D, PTH, PTHrp, Phosphorus

a. Interpret serum magnesium for

- Decreased GFR
- Hemolysis
- Hypoproteinemia
- Osmotic diuresis
- Ketonuria
- Bovine grass tetany

36 Enzymes including Muscle, Liver, pancreas

a. Define and identify leakage enzymes vs. inducible enzymes
b. Identify different liver enzymes used for evaluating liver disease in small and large animals.
c. Explain, list, or recognize the physiologic and pathologic processes or mechanisms that cause the following:
    - Increased activities of ALP, ALT, AST, GGT, GMD, ID, and LD due to hepatic, biliary, or hepatobiliary disorders or conditions
    - Increased activities of ALP due to glucocorticoids in dogs and hyperthyroidism in cats
    - Increased activities of AST, LD, CK, or ALT due to muscular disorders
    - Increased activities of AMS or LPS due to pancreatic disease, dehydration, or renal disease
    - Increases in PLI concentration due to pancreatic disease
    - Decreases in TLI due to exocrine pancreatic insufficiency
d. Explain, list, or recognize the reasons for:
    - Alterations in AST, LD, or CK activities due to in vitro hemolysis or delayed blood sample handling
    - Different enzyme data when assays are performed at different temperatures or with different substrates

37. Enzymes

a. Interpret serum enzyme data including increased activities of ALP, ALT, AMS, AST, CK, GGT, GMD, ID, LD, and LPS

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

38. Liver

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
   - Hypercholemia (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

39. 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.
- d. Explain the mechanism of production of ketones and NEFAs in ruminants during negative energy balance with hepatic lipidosis.

40. Pancreas (exocrine) and Intestinal disorders

a. Explain, list, or recognize the physiologic or pathologic processes or mechanisms that cause the following:
   - Hyperamylasemia, hyperlipasemia, increased PLI concentration in acute pancreatitis
   - Decreased TLI concentration in chronic pancreatitis or pancreatic acinar cell atrophy (exocrine pancreatic insufficiency)
   - Increased TLI concentration, amylase and lipase in azotemic dogs
   - Decreased cobalamin or folate concentrations due to pancreatic or intestinal disorders
   - Increased fecal α1-PI concentration in dogs and cats with intestinal diseases
   - Flat glucose absorption curves in horses with intestinal diseases
   - Microbial dysbiosis

b. Interpret
   - increased serum AMS & LPS activities
   - increased PLI concentration
   - decreased serum TLI concentration
   - decreased cobalamin concentration
   - decreased and increased folate concentration
   - increased fecal α1-PI concentration
   -

41. Pancreas (exocrine) and Intestinal disorders

a. Interpret laboratory test results related to exocrine pancreas and intestine that suggest or indicate:
   - Acute pancreatitis
   - Exocrine pancreatic insufficiency
   - Azotemic disorders
   - Diffuse or segmental disease of intestinal mucosa
   - Protein-losing enteropathy

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

42. Glucose / Endocrine pancreas

a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
   - Hyperglycemia due to excitement, eating a meal, stress, β-cell destruction, feline pancreatic insular amyloidosis, acute pancreatitis, hyperadrenocorticism, equine

hyperpituitarism, pheochromocytoma, steroid therapy, intravenous glucose therapy, xylazine & detomidine therapy, and insulin overdose
- Hypoglycemia due to functional β-cell neoplasm, hypoadrenocorticism, hepatic insufficiency, xylitol toxicosis, spontaneous bovine ketosis, and insulin overdose, hypoglycemia in sepsis, young animals, small breeds
- Increased fructosamine concentration in persistent hyperglycemic states
- Decreased fructosamine concentration in persistent hypoglycemic states, hypoproteinemic states, or hyperthyroidism
- Increased fructosamine in persistent hyperglycemic states
- Hyperinsulinemia (inappropriate) relative to glucose in functional β-cell neoplasm and insulin in hyperglycemic disorders
- Hypoinsulinemia due to β-cell damage or hypoglycemic disorders

43. Glucose / Endocrine pancreas

a. Interpret serum (blood, plasma) glucose, ketoamine, and insulin concentrations including:
   - Hyperglycemia
   - Hypoglycemia
   - Increased fructosamine concentration
   - Hyperinsulinemia
   - Hypoinsulinemia
b. 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
c. Explain, list, or recognize the reasons for:
   - Pseudohypoglycemia 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

44. Adrenal hormones

a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
   - Typical hematology and Chemistry changes seen in hyper- and hypadrenocorticism
   - The common presentation in terms of organ involved – ie primary, secondary and tertiary organ
   - Normocortisolemia in a dog with hyperadrenocorticism
   - Increased urinary cortisol to creatinine ratio due to hyperadrenocorticism or nonadrenal disease
   - Increased ACTH concentration in hypoadrenocorticism
   - Increased ACTH concentration in hyperadrenocorticism
   - Decreased ACTH concentration in hyperadrenocorticism
   - Inadequate cortisol suppression in LDDST in PDH, FAN, or nonadrenal disease
   - Inadequate cortisol suppression in HDDST in PDH, FAN, or nonadrenal disease
   - Escape from suppression in LDDST or HDDST

- Adequate cortisol suppression in PDH or nonadrenal disease
    - Exaggerated cortisol response to ACTH in PDH, FAN, or nonadrenal disease
    - Poor cortisol response to ACTH in FAN
    - Normal cortisol response to ACTH in PDH, FAN, or nonadrenal disease
- Explain, list, or recognize the reasons for:
    - Falsely low ACTH concentrations if sample is not handled properly

45. Adrenal hormones

a. Interpret serum or plasma cortisol and ACTH concentrations and urine cortisol:creatinine ratios including:
    - Hypercortisolemia
    - Hypocortisolemia
    - Increased ACTH concentration with concurrent hypercortisolemia or hypocortisolemia
    - Decreased ACTH concentration with concurrent hypercortisolemia or hypocortisolemia
    - Increased cortisol:creatinine ratio

46. Adrenal hormones

a. Interpret serum or plasma cortisol and ACTH concentrations and urine cortisol:creatinine ratios that indicate or suggest:
    - Hyperadrenocorticism due to pituitary neoplasm
    - Hyperadrenocorticism due to adrenal neoplasm
    - Iatrogenic hyperadrenocorticism
    - Primary hypoadrenocorticism
    - Iatrogenic hypoadrenocorticism
    - Nonadrenal disease that is causing hypercortisolemia or secondary hyperadrenocorticism

a. Differentiate between tests and be able to apply to disease syndromes associated with hypo – and hyperadrenocorticism
b. Describe the sensitivity and specificity of tests used for diagnosis of hyperadrenocorticism

47. Thyroid hormones

a. Explain, list, or recognize the physiologic, pathologic, or pharmacologic processes or mechanisms that cause the following:
b. The most common organ involved – ie primary, secondary or tertiary organ
c. Important changes in hematology and chemistry associated with hypo- and hyperthyroidism
d. Understand euthyroid sick syndrome and list the factors that cause this
e. Hyperthyroxemia due to thyroid neoplasm or administration of TSH
f. Absence of hyperthyroxemia in feline hyperthyroidism due to thyroid adenoma

48. Thyroid hormones

a. Hypothyroxemia or decreased free [T4] due to lymphocytic thyroiditis (or other causes of thyroid gland damage), nonthyroidal disease, and some drug treatments
b. Increased TSH concentrations due to lymphocytic thyroiditis (or other causes of thyroid gland damage)
c. Increased TgAA concentration due to lymphocytic thyroiditis
d. Failure to suppress [T4] with T3 treatments in a cat

e. List the main breeds of dogs which have lower RIs for T4
f. Explain, list, or recognize the reasons for:
    - Positive interference by thyroxine autoantibodies on measurement of thyroxine concentration

49. Thyroid hormones

a. Describe the feedback mechanism in control of thyroid hormones and list which hormones are the most active and which ones are involved in the feedback mechanism
b. Describe why freeT4 by equilibrium dialysis is the gold standard test for assessing the thyroid.

50. Thyroid hormones

a. Interpret serum thyroxine, free thyroxine (by equilibrium dialysis), TSH, and TgAA concentrations including:
    a. Hyperthyroxemia
    b. Hypothyroxemia
    c. Hyperthyroxemia with concurrent free thyroxine concentrations
    d. Hypothyroxemia with concurrent free thyroxine concentrations
    e. Increased TSH concentration
    f. Increased TgAA concentration

Learning objectives for the laboratory sessions

Lab 1

- Handle EDTA blood samples appropriately
- Fill a capillary tube and read hematocrit
- Read plasma color
- Measure plasma protein with a refractometer
- Evaluate the buffy coat and to check for extracellular parasites
- Prepare and stain a blood smear
- Observe and be able to describe the basic principles of the Abaxis HM5 hematology analyzer for RBC, HCT, Hgb, and WBC concentration determinations

Lab 2

- Identify and describe the morphologies of RBCs (crenation/echinocytes from healthy animals
- Identify and describe the morphologies of platelets from healthy animals
- Identify and describe the morphologies of WBCs from healthy animals
- Perform a differential WBC count and an absolute WBC count
- Perform platelet estimates via blood film review
- Compare obtained results with reference intervals

Lab 3

- Identify morphologic abnormalities of RBC (anisocytosis, macrocytes, microcytes, hypochromasia, polychromasia, spherocytes, and platelets (clumping) and describe clinical significance
- Recognize a left shift and toxic neutrophils
- Recognize changes in leukocyte numbers and morphology in inflammatory state
- Recognize changes in lymphocyte numbers and morphology in inflammatory state
- Practice interpretation of the hematology data
- Be able to classify anemia, leukocyte patterns, and thrombogram

Lab 4

- Case discussions including integrating and interpret abnormal laboratory findings (CBC, coagulation data, to develop the ability to recognize laboratory result patterns to aid in the diagnosis of diseases such as IMHA, hemorrhage, inflammation, etc… and provide a differential or definitive diagnosis

Lab 5

- Case discussions including interpretation abnormal laboratory findings and describe pathogenesis of the laboratory abnormalities
  (CBC, coagulation data, and protein concentrations to develop the ability to recognize laboratory result patterns to aid in the diagnosis of diseases)

Lab 6

- Perform an aspiration of sample, and make an FNA smear
- Recognize bacteria in glass slides
- Recognize and classify inflammatory lesions using glass slides (+/- bacteria)
- Recognize and classify neoplasms using glass slides
- Identify the three types of cutaneous neoplasms using glass slides
- Describe characteristics of all round cells neoplasms using glass slides

Lab 7

- Student case presentations including on cytology using digital images
- Recognize the cytological abnormalities suggestive of neoplasms
- Recognize cytological abnormalities suggestive of benign tissues
- Recognize cytological abnormalities suggestive of acute inflammation
- Recognize cytological abnormalities suggestive of chronic inflammation
- Recognize bacteria in glass slides

Lab 8

- Measure urine specific gravity using a refractometer
- Measure chemicals in urine using reagent strips
- Perform urine sediment analysis
- Distinguish artifacts from significant findings
- Interpret urinalysis, CBC and serum chemistry results

Lab 9 and 10

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

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

Course level outcome	SGUSVM program level outcome
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, cavitary effusions, and aspirates from lesions in tissues (marrow, lymph nodes, & common inflammatory or neoplastic lesions.	**A. Core Medical Knowledge**
Being professional in the lab	**B. Core Professional Attributes**
Introduction to making blood films, performing microhematocrits, using a refractometer to read USG and total proteins, and performing a urinalysis	**C. Core Clinical Competencies (Skills)**

XI. Course Schedule

The schedule is only a guideline; lecture may run ahead or behind schedule at times

Laboratory schedule

Date (Lab)	Groups (Teams)	Time in	Venue	Lab description
29 Jan Lab 1	1 (teams 1-5) 2 (teams 6-10) 3 (teams 11-14)	8:00 – 9:20 9:25 – 10:45 10:50 – 12:20	Bacti Lab	Making blood smears Preforming PCV and plasma total protein Overview of HM5 and VS2 hematology/ Chemistry analyzers (George Daniels)
5-Feb Lab 2	A (teams 1-7) B (teams 8-14)	8:30 – 10:30 10:30 -12:30	Bacti Lab	Identification of major blood cells (WBC, Platelets, RBC normal morphology)
12-Feb Lab 3	A (teams 1-7) B (teams 8-14)	8:30 – 10:30 10:30 – 12:30	Bacti Lab	Interpretation of CBC cases using blood smears (glass and digital slides)
19-Feb Lab 4	Whole class	8:30 – 10:30	Charter Hall Lab	Hematology case discussions by faculty
26-Feb Lab 5	Whole class	8:30 – 10:30	Charter Hall Lab	Systematic hematology, hemostasis, and Proteins case interpretation Discussion by instructor and students
4 March Lab 6		8:30 – 10:30 10:30– 12:30	Bacti Lab	Cytology case using glass slides
5 March Lab 7	Whole class	8:30 – 10:30	Charter Hall Lab	Cytology case presentations by students
1-Apr Lab 8	A (teams 1-7) B (teams 8-14)	8:30 -10:30 10:30-12:30	Bacti Lab	Urinalysis and urinary cases
8-Apr Lab 9	Whole class	11:30 – 12:30	Charter Hall Lab*	Clinical chemistry case presentations by faculty
22-Apr Lab 10	Whole class	8:30 – 10:30	Charter Hall Lab	Clinical chemistry case presentations by students
29-Apr Lab 11	Whole class	8:30 – 10:30	Charter Hall Lab**	Optional lab**

*Venue is not confirmed

**To be confirmed

Lecture schedule

Wk	Lecture	Day	Date	Time	Instructor	Projected lecture
1	1	Mon	Jan 20	3:30 pm		Introductory concepts
	2	Tues	Jan 21	3:30 pm		Erythrocytes physiology/ morphology
	3	Wed	Jan 22	3:30 pm	Dr. Wilkerson	Erythrocytes parasites analytical principles
	4	Thur	Jan 23	3:30 pm		Non-regenerative anemia
	5	Fri	Jan 24	3:30 pm		Hemolysis
2	6	Mon	Jan 27	3:30 pm	Dr. Wilkerson	Erythrocytosis/Fe & IMHA/ESAAIg tests
	7	Tues	Jan 28	3:30 pm	Dr. Daniel	Leukocytes physiology analytical principles
	8	Thur	Jan 30	3:30 pm	Dr. Wilkerson	Neuts/Lymphs/Monos/Eosinop/basophils
3	9	Mon	Feb. 3	3:30 pm	Dr. Wilkerson	Leukocyte Introduction
	10	Tues	Feb. 4	3:30 pm		Leukocytosis
	11	Thur	Feb. 6	3:30 pm		Leukopenia
4	12	Mon	Feb. 10	3:30 pm	Dr. Wilkerson	Organisms & Leukemia
	13	Tues	Feb. 11	3:30 pm		Thrombogram
	14	Wed	Feb. 12	3:30 pm		Proteins 1
	15	Thur	Feb. 13	3:30 pm		Proteins 2
	16	Fri	Feb. 14	3:30 pm	Dr. Kabuusu	Primary hemostasis
5	17	Mon	Feb. 17.	1:30 pm		Secondary hemostasis
	18	Tues	Feb. 18.	3:30 pm		Tertiary hemostasis
	19	Thur	Feb. 20.	3:30 pm	Dr. Kabuusu	Principles of cytology
	20	Fri	Feb. 21.	4:30 pm		Inflammatory & neoplastic processes
6	21	Mon	Feb. 24.	1:30 pm	Dr. Kabuusu	Round cell neoplasms & lymph nodes
	22	Tues	Feb. 24.	3:30 pm		Internal organs and respiratory tract
	23	Thur	Feb. 27.	3:30 pm		Cavitary effusions
		Fri	Feb. 28	4:30 pm		Quiz 1
7	24	Mon	March 2	3:30 pm	Dr. Kabuusu	Cavitary effusions
	25	Tues	March 3	3:30 pm		Synovial fluids and CSF cytology
	26	Fri	March 6	3:30 pm	Dr. Wilkerson	Processes of the Nephron (See Panopto)
8	**Mid-term Exam: Mar. 16, 2020**					
9	27	Mon	Mar. 23	3:30 pm		Urinary system
	28	Tues	Mar. 24	3:30 pm	Dr. Seddon	Urinary system
	29	Wed	Mar. 25	1:30 pm		Urinary system
	30	Thur	Mar. 26	3:30 pm		Electrolytes 1 incl osmolality
	31	Fri	Mar. 27	3:30 pm		Electrolytes 2 Cl, HCO
10	32	Mon	Mar. 30	3:30 pm	Dr. Wilkerson	Blood gases & acid base
	33	Tues	Mar. 31	3:30 pm	Dr. Seddon	Ca, Vit D, PTH, PTHrp
	34	Wed	April. 1	1:30 pm		Ca, Vit D, PTH, PTHrp
	35	Thur	April 2	3:30 pm		P, Mg
	36	Fri	April 3	1:30 pm		Enzymes. Muscle
	37	Fri	April 3	2:30 pm		Liver
11	38	Mon	April 6	1:30 pm		Liver
	39	Tues	April 7	3:30 pm	Dr. Seddon	Lipids
	40	Wed	April 8	3:30 pm		Exo panc, GI
		Thur	April 9			Quiz 2
12	41	Wed	April 15	3:30 pm		Exoc panc / GI
	42	Thur	April 16	3:30 pm	Dr. Seddon	Endo panc Glucose
	43	Fri	April 17	3:30 pm		Endo panc Glucose
	44	Fri	April 17	4:30 pm		Adrenal hormones
13	45	Mon	April 20	4:30 pm	Dr. Seddon	Adrenal hormones
	46	Tues	April 21	4:30 pm		Adrenal hormones
	47	Wed	April 22			Thyroid hormones
	48	Thur	April 23			Thyroid hormones
	49	Fri	April 24			Thyroid hormones
14	50	Mon	April 27	3:30 pm		Review
16	**Final Exam: Monday May 4, 2020**					

Grading and assessment policy, and grading rubrics

Assessments will be via ExamSoft, take home case assignments and online formative questions based on the material taught during lectures and laboratory sessions. The Examsoft examinations will take the form of multiple-choice questions (MCQ) but the take home case assignments may follow the short-answer format. The quizzes, mid-term and final examinations will include images, tables of data, and case scenarios. These exams will test the students' ability to recall or recognize information taught, as well as the application of that information in the context of interpretation of laboratory data and synthesizing the mechanisms or pathogenesis of the abnormal findings. Do not memorize any reference intervals (except where indicated); these will be provided whenever required. All examinations will be sequestered and are thus discouraged from memorizing questions (see student manual). There will not be a review of any exam taken. However, a strength and opportunity report will be mailed to each student. A student is required to print the strength and opportunity report and bring it with them to meet with a faculty regarding the exam.

Laboratory quizzes will be evaluated using AF-IT cards. Although only team effort will count toward student grade, the individual card will be used as roll call (attendance). See the laboratory manual for further details on AF-IT quizzes.

Three (3) extra credit points may be given based on professionalism and in-class activities.

Examsoft quizzes and exams

Quiz 1	20 points
Mid-term exam	50 points
Quiz 2	20 points
Final exam	50 points

Laboratory-based quizzes

Hematology case interpretations-lab 4	2 points
Hematology case interpretations-lab 5	6 points
Diagnostic cytology cases	4 points
Clinical chemistry cases	10 points
Total	**162 points**

Grading policies

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

Office hours or other Instructor consultation hours

Students are encouraged to send questions by email in the first instance. The instructor may address the question in the first minutes of the lecture or respond to the email directly. Otherwise, a student is encouraged to send an email to the instructor with three possible appointments (date and time) and the instructor will get back to the student with a suitable appointment (one of the three options provided).

Any other requirements such as equipment (e.g. dissection kit) or clothing required (e.g. scrubs, closed toe shoes), etc.

See the guidelines in the lab manual. Read them, sign them and return a signed copy to the course director within the second week of the semester. These will not be accepted after week two of the term.

XII. Recommended study strategies and time management

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) 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

General time management recommendations are the following:

For each lecture, you can expect to spend this amount of time
15 minutes is required to preview material before lecture
50 minutes is expected for each lecture
*90 minutes is expected to review within 24 hrs of the lecture
15 minutes to test yourself (recall) also within 24 hrs after lecture

XVI. Professionalism statement

Students are expected to conduct them themselves professionally during lectures, laboratory sessions and during exams. If in doubt, please refer to the student and lab manuals.

XVII. Attendance policy

Students are expected to be on time for all lectures and laboratories and to stay in class/ lab for the entire duration unless extenuating circumstances require them to come late or leave early. In the event that a student is going to be late or leave early, professional courteousness in the form of an advance notice is to be given to the present instructor via an email or proxy. Attendance is mandatory for all laboratory sessions and attendance check will be taken during all laboratory sessions. Attendance of lectures (though not mandatory) will be monitored using

clicker questions at any time. Individual instruction is unavailable especially for students who missed lectures or laboratories without valid SGU medical excuses or DOS approved leaves of absence. Refer to student's manual if in doubt.

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

A make-up exam will be given when a valid SGU medical excuse is provided (electronically or hard copy) and in accordance with the Dean of Students' Office. If a student is not in a position to take an exam due to a wedding, professional meeting or some other unforeseen circumstance (such as sickness or the loss of family member), the procedure detailed in the student manual and guided by the DOS office for a make-up exam will be followed. The make-up exam may take a different format (but not content) from the original exam, and it may be paper-based. The dates for the make-up exam 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.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams only in the examination venue and not in
4. advance. The “start of the exam” is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees’ eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may

not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action. 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

*No other personal belongings will be permitted.

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.

Course Syllabus

Course Code and Name: PTHB 545: Food Hygiene and Meat Inspection

Course Director:

Satesh Bidaisee, DVM, MSPH, EdD, Professor of Public Health

Office: Department of Public Health and Preventive Medicine, Caribbean House

Contact: email: sbidaisee@sgu.edu, Phone: 473-439-2000 ext. 3527

Course Collaborators: Dr. Eleni Michalopoulou and Dr. Austin Kirwan

Pre-requisite:

- Enrollment in the Global Veterinary Health (GVH) track of the Doctor of Veterinary Medicine (DVM) Program
- Completion of the term 4 DVM course: Veterinary Public Health

Course Locations:

- Mirabeau Abattoir, Grenville, St. Andrews, Grenada
- Gouyave Fish Market, St. Johns, Grenada
- Arawak Company Limited, Mausica, Trinidad
- Langford Abattoir, Bristol University, United Kingdom

Course Aim and Objectives:

The aim of this course is to prepare students for the role of a veterinarian in the food system. Emphasis will be on the processes involved in producing safe meat products from healthy animals, but where relevant, links will be made with practice and role of the veterinarian in ensuring that animals are healthy when they are sent for slaughter and their welfare is not compromised.

Specific objectives for the course will include:

- To expose students with the processes involved in slaughtering and processing of animals
- To familiarize students with welfare aspects of the slaughtering process
- To demonstrate to students practical meat inspection

Overall, students will also be expected to develop the following skills and attributes:

Verbal communication with colleagues, written records/reports, teamwork and professional behavior, evidence of enquiry, awareness of personal limitations, responsible use of medicines, understanding public health risks, health and safety, hygiene and biosecurity awareness and the

application of knowledge, practical skills and clinical reasoning (including assignments and wet labs specimen reports).

Course Description:

This course is a field based experience towards providing students with theoretical and practical knowledge and skills in food hygiene and meat inspection in an abattoir setting, a full throughput commercial poultry processing plant and a fish processing plant. Students will be exposed to procedures, standards, regulations, food safety assurance and health and safety for the United Kingdom, United States and the Caribbean region. Students will familiarize themselves with slaughter processes of cattle, sheep and pigs at the Langford Abattoir as a one week intensive. The one week intensive will provide exposure to processes involved in slaughtering of animals as well as animal health, food safety and welfare controls that are carried out. The role of the veterinarian in relation to animal welfare and safety of food products of animal origin will be emphasized.

Course Details:

This course consists of preparatory sessions in Grenada and Trinidad to be completed after pre-requisites followed by a one week abattoir rotation at Langford abattoir at the University of Bristol, UK.

The Grenada experience will include preparatory lecture sessions and visits to the Mirabeau Abattoir to observe ante mortem, slaughter and post mortem inspections and Gouyave Fish Market to observe the processing of fish from landing to package products. The Trinidad experience will involve a visit to Arawak Farms which is a fully integrated poultry farm and processing enterprise.

Upon completion of term 6 of the DVM program, students can proceed to he week rotation at Langford abattoir is a Royal College of Veterinary Surgery (RCVS) approved clinical rotation for DVM 4th year DVM students of Bristol University and of the Royal Veterinary College, London. This rotation is offered throughout the year and SGUSVM GVH track students will make arrangements with GVH Track Coordinator to arrange their week long placement.

Course Outline:

A. Preparatory sessions in Grenada:

- 2 hrs of lecture:
    - Introduction to Food Hygiene and Meat Inspection
    - Principles of Ante Mortem and Post Mortem Inspection
- 2 hrs of ante mortem, slaughter and post mortem demonstration at Mirabeau Abattoir
- 1 hr of fish processing at Gouyave Fish Market

B. Preparatory session in Trinidad

- 2 hrs of lecture on the integrated farm enterprise, food safety standards and practice
- 2 hrs of poultry farm visit
- 2 hrs of poultry processing inspection
- 2 hrs of poultry product processing

C. Langford Abattoir, University of Bristol one week rotation

Monday: self study and preparation day

> Materials to be studied includes principles of meat inspection, hygiene in the food chain, Hazard Analysis Critical Control Points (HACCP), parasitology, Tuberculosis in cattle, animal welfare during transport, lairage and stunning, European Regulation 854/2004 on ante mortem and post mortem inspection procedures.

Tuesday: first day of abattoir

> Students will receive the workbook with the mandatory assignments for the week during the induction that day. Mostly sheep and cattle will be slaughtered on this day. At the start of the day, students will be quizzed about the materials from day 1 study. Students will also be expected to assemble and disassemble a cash special captive bolt gun and to shoot it at least once in a removed head of a cow.

Wednesday: second day of abattoir

> During this day, students will be required to carry out a structural and facilities audit of the abattoir on the basis of a pre-prepared form.

Thursday: wet lab practical and post mortem inspections

> Mostly pigs will be slaughtered this day. Some sheep and cattle may be processed as well. Either on Tuesday or on Thursday students will be required to perform and observed a complete post mortem examination of a cow, sheep/goat or pig. This will be part of the student's examination.

Friday: self study, completion of assignments

Course Evaluation:

The following components contribute equally to a passing grade (70% and above)

- Oral exam at the start of Langford abattoir work
- Abattoir case report; a draft of this must be peer-reviewed by another student (template is available) prior to submission of final version
- A wet lab specimen report for two specimens to be chosen from post mortem room practical
- A report on a structural and facility audit of the abattoir (group task; verbal report)

- A completed reflective logsheet/assessment form and written report to be submitted

SVM Course Code: **SAMS 501**
Course Director: Dr R Hagen Argudin Pina
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Canine and feline vertebral column 1. Lecture 5: Vertebral column 2. Lab 4 : Vertebral column 3. Self-study questions to Lab 4	Travel , moving, packing, arriving , setting up study space…	March 16 - 22	
Canine and Feline Thorax 1. Lecture 6: Thorax 2. Lab 5 : Thorax 3. Self-study questions to Lab 5	Canine and feline vertebral column At the beginning of the week: 1. Lecture 5: Vertebral column: on MyCourses/ Resources ; Panotpo recording on MyCourses/ Panopto 2. Lab 4 Questions: Vertebral column: Powerpoint pdf on MyCourses/ Resources 3. Self-study questions Powerpoint pdf for Lab 4 on MyCourses/ Resources On Friday: 4. Answer Keys to Lab 4 as Panopto recording on MyCourses/ Panotpo 5. Self-study questions as Powerpoint pdf on MyCourses/ Resources	March 23-29 During the week: 1. Review Lecture 5 Powerpoint pdf 2. listen to the Panopto recording Lecture 5 3. Work through Lab 4 questions 4. Work through the self-study questions to Lab 4 On Friday: 5. check the Answer key to Lab 4 6. check the key to the self-study questions to Lab 4 7.	NA
	1. Preparation for Quiz 1	March 30- April 5 1. Study course material for Quiz 1 next week: Lectures 1, 2, 3 and 4 Labs 1,2 and 3	NA

Canine and feline abdomen 1. Lecture 7: Abdomen 2. Lab 6: Abdomen 3. Self-study questions to Lab 6	Canine and feline thorax At the beginning of the week: 1. Lecture 6: Powerpoint pdf on MyCourses/ Resources; Panotpo recording on MyCourses/ Panopto 2. Lab 5 Questions on MyCourses/ Resources 3. Self-study questions for Lab 5 on MyCourses/ Resources On Friday: 4. Panopto recording of Key to Lab 5 on MyCourses/ Resources 5. Answer Keys to self-study questions on MyCourses/ Resources	April 6 – 12 During the week: 1. Review Lecture 6 Powerpoint pdf 2. listen to the Panopto recording Lecture 6 3. Work through Lab 5 4. Work through the self-study questions to Lab5 On Friday: 5. check the Answer key to Lab 5 6. check the key to the self-study questions to Lab 5	**Quiz 1** Lectures 1,2, 3 and 4 Labs 1, 2 and 3 20 Questions = 20 points
Canine and feline skull 1. Lecture 8: Skull 2. Lab 7: Skull 3. Self-study questions to Lab 7	Canine and feline abdomen At the beginning of the week: 1. Lecture 7: Powerpoint pdf on MyCourses/ Resources; Panotpo recording on MyCourses/ Panopto 2. Lab 6 Questions on MyCourses/ Resources 3. Self-study questions for Lab 6 on MyCourses/ Resources On Friday: 4. Panopto recording of Key to Lab 6 on MyCourses/ Resources 5. Answer Keys to self-study questions on MyCourses/ Resources	April 13 – 19 During the week: 1. Review Lecture 7 Powerpoint pdf 2. listen to the Panopto recording of lecture 7 3. Work through Lab 6 4. Work through the self-study questions to Lab6 On Friday: 5. check the key to Lab 6 6. check key to the self-study questions to Lab 6	NA
NA	Canine and feline skull At the beginning of the week: 1. Lecture 8: Skull: Powerpoint pdf on	April 20 – 26 During the week: 1. Review Lecture 8 Powerpoint pdf	NA

	MyCourses/ Resources; Panotpo recording on MyCourses/ Panopto 2. Lab 7: Skull: Questions as Powerpoint pdf on MyCourses/ Resources 3. Self-study questions to Lab 7 On Friday: 6. Panopto recording of Key to Lab 6 on MyCourses/ Resources 7. Answer Keys to self-study questions on MyCourses/ Resources	2. listen to the Panopto recording of lecture 8 3. Work through Lab 7 4. Work through the self-study questions to Lab 7 On Friday: 5. check the Answer key to Lab 7 6. check the self-study questions to Lab 7	
NA	NA	April 27 – May 3rd Study for Quiz 2 next week Lectures 5, 6,7 and 8 Labs 4,5,6,7	NA
Final exam Lectures 1 to 8 Labs 1 to 7 45 questions, MCQ, / 45 points Canceled		May 4 - 10	**Quiz 2** L5-8 Labs 4-6 20 points
Total lectures: 8 Total Radiology Labs: 7	Total lectures : 8 Total Radiology Labs: 7		Total quizzes: 2

A**ssessment Summary:**

Original Point Allocation:	Revised Point Allocation
Total points = 45 *Total points breakdown:* One final exam of 45 questions; cumulative	Total points = 40 *Total points breakdown:* Two quizzes of 20 questions each; not cumulative

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

Content remains unchanged as is basic. Facilitating learning by supplying additional self-study questions.

Dr R Hagen Argudin Pina (Course Director)
Dr Leticia Marcelino , March 19th 2020

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

Spring 2020

I. Course Faculty and Staff Information

Course Director:
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 Location: Cassia building, True Blue Campus, Lower floor
Office Hours: by appointment via e-mail

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, (part time)
Email Address: hmcallister@sgu.edu
Office Location: Cassia building, True Blue Campus, Lower floor
Office Hours: by appointment via e-mail

Leticia Marcelino, DVM, MSc, MRCVS, OV

Instructor in Diagnostic Imaging SAMS, SVM SGU

Email address: ltomasma@sgu.edu

Office location: Small animal hospital

Office hours: by appointment via e-mail

Christine Gibbs, BVMS, DVR, PhD, DipECVDI

Visiting Professor

Rachel Moon, DVM, DACVR
Visiting Professor

II. Course location (see XII. for schedules)

Lectures: Venue **: TBC**

Labs: **Charter Hall Laboratory**

Exam: May 6th 2020 Venue **TBC**

III. Prerequisite and/or co-requisite courses

Co-requisite course: Veterinary Anatomy I

IV. Required reading:

The student is required to read the following text sections, which will be provided on My Courses/ Resources: **Thrall, D.E. Textbook of Veterinary Diagnostic Radiology**, 6th Edition, Elsevier/ Saunders, 2013: **Chapter 1**: Radiation Protection and Physics of Diagnostic Radiology, pages 2 to 21.

V. Recommended resources

Students are NOT required to acquire a textbook. However we recommend the following:

Main recommended textbook:

Thrall, D.E. **Textbook of Veterinary Diagnostic Radiology**, 7th Edition, Elsevier/ Saunders 2018. Includes chapters on physics of radiology and normal radiographic anatomy of Canine, Feline and Equine species. This is a very good reference for more in-depth reading. It covers all the material that will be discussed in lectures and labs. Available at the library.

Additional recommended textbooks:

Ayers, Susie. **Small Animal Radiographic Techniques and Positioning**, Wiley& Blackwell, 2012.

Thrall, D.E. and Robertson, I.D. **Atlas of Normal Radiographic Anatomy & Anatomic Variants in the Dog and Cat.** 2nd edition, Elsevier, 2016.

Websites: These are definitively worth looking at:

Radiology website with normal radiographic anatomy of main domestic species of the University of Illinois:

http://vetmed.illinois.edu/courses/imaging_anatomy/index.html

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

VI. Special accommodation

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

VII. Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs. No white coats are needed for radiology 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 are scheduled ahead of the lab classes. The course consists of **8 lectures**. 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 locations are appended under ***Appendices***.

Lab Classes are held in Charter Hall Laboratory according to the schedule (see ***Appendices*** for dates, times, contents and groups). The class is split into four groups to facilitate and improve student- tutor interaction. The lab groups are the same as for the anatomy labs so that the group which is not in the anatomy lab will be in the radiology lab and vice versa. Each of these 2 major groups A and B will then be split in half A1; A2 and B1; B2 resulting in four groups for the lab classes. There are **7 lab classes** for each group scheduled: 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 are dedicated to different anatomical regions. Each lab covers one or several anatomical region(-s) and images will be supplied with questions to identify/ recognise anatomy, the projections and differences between the adult and juvenile skeleton and between species. The labs are a regular and continuous *formative assessment*.

Students are expected to evaluate radiographs and give answers to formative questions, which will be provided in the lab. The cases/ questions will focus on the material covered in the lecture(-s) usually prior to the Lab session which is basic radiological anatomy. The images will be projected on the large overhead screens or on the computer screens in the Charter Hall Laboratory and the radiological anatomy will be assessed by the whole group with interactive discussion, question and answer sessions and 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 the laboratory sessions and revise the anatomy (as far as possible) and the corresponding lecture/-s, as this will make the discussions more fruitful and the labs more effective. An effort is made to harmonise the material taught with the Anatomy I course.

The course should prepare the student to be competent in:

- understanding the basic principles of x-ray formation and x-ray interaction with tissues and the environment
- understanding the basic principles of image formation
- recognising common artefacts
- learning about consistent radiographic technique to ensure good quality diagnostic radiographs
- knowing how to label and identify radiographs
- knowing the standard radiographic projections that are used to visualize the discussed anatomical regions in cats and dogs in practice and be aware of the importance of correct and consistent positioning
- understanding basic principles and the radiological terminology of image interpretation
- recognising normal radiological anatomy in juvenile and adult cats and dogs and recognising specific species differences
- awareness of the health hazards of using ionizing radiation and how to minimize them

The images are NOT provided prior to the lab sessions to encourage active participation and simulate a clinical setting, where images have to be reviewed on the spot.

Once the whole class has attended each lab, a key with any questions answered and additional explanations (if necessary) will be made available for personal study on 'My Courses', '2020-01-SAMS501-V-0-Radiology I, ; 'Resources'; Radiology Labs.

The Lab sessions require **mandatory** attendance and students must make sure to attend the allocated lab session. Students will be required to sign in for each lab session. Part of the course will be instructed by Visiting Professors (VP) (Dr Gibbs, Dr Moon) as indicated under ***Appendices***.

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.

IX. Course-level outcomes

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

- explain the basic principles of how an x-ray generator works and x-rays are generated
- explain the basic principles of how a radiograph is created
- discuss image quality, radiographic technique, sources of potential artefacts and their prevention
- list and identify the standard projections used in radiography of canine and feline anatomy and how these projections are obtained
- identify the normal radiological anatomical features and anatomical variations in the young and adult dog and cat
- apply the basics of image interpretation
- employ correct radiological terminology
- state the potential radiation hazards to personnel, patient and the public when using ionizing radiation to ensure its safe use in clinical practice

X. Lesson Level Outcomes

Lessons include lectures and Laboratory Sessions and CLOs 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.	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.
List, explain and apply the commonly used radiographic projections in dogs and cats to radiograph the body systems including axial	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals

and appendicular skeleton, skull, thorax and abdomen.	B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.
Explain the basic principles of X-ray and image formation in radiology (physics).	A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.
Discuss image quality, radiographic technique, sources of potential artefacts and their prevention	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.
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.	A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities. B7 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity.
Demonstrate proficiency in the correct use of medical terminology when verbally describing and reporting diagnostic radiographic studies of cats and dogs.	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.

XII. Course Schedule

Appended under ***Appendices***.

XIII. Grading and assessment policy

Types of assessment: There will be only **1** Final exam. The examination will consist of MC question type questions and a considerable number of the questions will include images. All examinations (this includes Make-up and Resit exams) will be in ExamSoft. Resit/ Make-up and Completion exams may include question types other than MC. Students need to be familiar with the use of ExamSoft/ *Examplify* software prior to the

examinations.
Examination material will be based on all of the information provided on *My Courses*, during lectures and radiology lab discussions including lecture notes, lecture and lab Powerpoint pdfs and any additional material as indicated on *My Courses*. An effort is made to communicate Exam details prior to the examinations. The exam is sequestered. The only time when questions can be viewed is during the exam. *There will be no detailed breakdown of questions published prior to the final 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.

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: SAMS 501, Radiology I

Examination Location: TBC

Examination	**May 6th**	Number of	Maximum	Lecture content:	Lab content
Final exam	9.30 am	MCQs: 45	points: **45**	Lectures 1 to 8	Labs1 to 7

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

XIV. Recommended study strategies

Students should read the material provided prior to attending lectures and labs. When studying for examinations, all the material relating to an exam that is provided on *MyCourses* must be reviewed. Exam contents are summarised under XIII and will be announced prior to the exam. 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 dimensionality of radiology. Students are requested to ask for support (request office hours, make use of DOS) if needed in a timely manner.

XV. Instructor's expectations of the student

Students are expected to read the supplied documentation before class. 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 and discussed during the lab classes and any questions that may arise can be answered.

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 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. facebook, blogs, you tube and other social media) 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 after the lecture.

XVII. Attendance policy

Students are requested to refer to the Student manual (available on the Carenage website): Students are expected to attend all classes for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy. If absence from individual classes, examinations, and 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).

Lecture attendance policy: Students are expected to attend lectures.

Laboratory session attendance policy: Radiology I Lab sessions require mandatory attendance. A sign-in sheet is provided during the Lab and each student is responsible to

sign it personally. If for some reason (for example a medical problem or an approved off-island trip) a student cannot attend the allocated Lab session, then the student must contact Dr. Hagen Argudin Pina, Dr. Marcelino or Dr. McAllister in advance to advise them that a lab will be missed and see if it is possible to attend a different session. Whenever possible students are encouraged to swap lab groups with a colleague in such cases so as to keep the group size even.

-> *Note* that Lab attendance does **not** incur points towards the final course grade, however unexcused absences from lab sessions may negatively influence the final course grade.

XVIII. Policy regarding missing examinations

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

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

Students are encouraged to download the exam *as soon as possible* to minimize potential problems occurring with the download and should enter the examination hall with the exam downloaded on their computers. Exams are generally made available 24 hours prior to examination start.

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 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.

5. Examinees experiencing difficulties with their laptop and or the downloading of exams are encouraged to visit the IT department for assistance prior to exam day or asap. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

On Exam Day

Students must be at the examination location ***30 minutes*** ***before the examination begins*** to allow for timely and orderly safe storage of any bags and unrushed allocation of seating in the exam venue.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
4. An examinee who is experiencing a **computer problem** should **notify a *proctor*** immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list (if available) posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behaviour.

7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. **No communication of any kind is permitted between examinees after entering the examination room.**
10. **Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.**
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To **start the exam**, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the (green) "Congratulations! Your answer file(s) uploaded successfully," (green) screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

No other personal belongings will be permitted.

Students are requested to be silent in the corridor/ area directly outside the exam venue as this can disturb and distract their peers who are still working on the exam inside the venue.

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.

XX. Copyright policy (if applicable):

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

Appendices:

Appended: XXI and XXII: Lecture and Lab Course Schedule and Learning Outcomes and Radiology I Lab Groups

XXI. Lecture schedule: Location: TBC

Date **Time** **Instructor**	**Lecture content**	**Lecture learning outcome**
Tues Feb 4th **9.30 am** **RHAP**	**Lecture 1: Physics of radiology**: X-ray generator, interaction of the x-ray with patient/ matter, image formation and interpretation, image contrast	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
Tues Feb 11th **9.30 am** **RHAP**	**Lecture 2: Artefacts and Radiation safety**: Time, shielding, technique, monitoring, methods of radiation protection (ALARA)	1 Explain definition, causes, examples and prevention of typical artefacts 2 Explain causes, advantages and disadvantages of image distortion and magnification 3 explain the sources of radiation hazard in using X-rays in veterinary medicine and list how radiation hazards can be controlled/ minimised 4 list which areas of the body are sensitive to radiation 5 recommend standard radiation safety protocols when undertaking radiography of animals

Tues Feb 18th **9.30 am** **CG (VP)**	**Lecture 3:** Radiographic technique and anatomy of the **canine and feline forelimb**	1 list and identify the standard projections for radiographing the forelimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the forelimb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal forelimb 4 demonstrate an understanding of principles of radiation safety
Tues Feb 25th **9.30 am** **CG (VP)**	**Lecture 4:** Radiographic technique and anatomy of the **canine and feline hindlimb and pelvis**	1 list and identify the standard projections for radio-graphing the hindlimb and pelvis in dogs and cats 2 identify and interpret the normal and comparative radio-graphic anatomy of the hindlimb and pelvis in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal hindlimb and pelvis 4 demonstrate an understanding of principles of radiation safety
Tues March 17 **9.30 am** **RM(VP)**	**Lecture 5:** Radiographic technique and anatomy of the **canine and feline vertebral column**	1 list and identify the standard projections for radio-graphing the vertebral column in dogs and cats 2 identify and interpret the normal and comparative radio-graphic anatomy of the vertebral column in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal vertebral column 4 demonstrate an understanding of principles of radiation safety
Tues March 24th **9.30 am** **RM(VP)**	**Lecture 6:** 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
Tues April 7th **9.30 am** **RHAP**	**Lecture 7:** Radiographic technique and anatomy of the **canine and feline abdomen**	1 list and identify the standard projections for radiographing the abdomen in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the abdomen in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal abdomen 4 demonstrate an understanding of principles of radiation safety
Tues April 14 **9.30 am** **RHAP**	**Lecture 8:** Radiographic technique and anatomy of the **canine and feline skull**	1 list and identify the standard projections for radiographing the skull in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the skull in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal skull 4 demonstrate an understanding of principles of radiation safety
Final exam ; Wednesday May 6thth 9.30 am ; Venue **:TBC**		

XIII. Radiology Labs:

Location: All Radiology I labs : ***'Charter Hall Laboratory'*.** Note that Labs start at **9.00 am**

Date **Instructor**	**Time**	**Groups**	**Lab No & content**	**Lab learning outcome**
Thursday Feb 13th RHAP/LM	**8.30-. 9.20** 9.30-10.20	A1 A 2	**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
	10.30-11.20 11.30-12.30	B1 B 2		
Thursday Feb 20th CG (VP) and LM	**8.30-. 9.20** 9.30-10.20	A 2 A 1	**2** **Forelimb** Radiographic technique and anatomy of the canine and feline forelimb	1 list and identify the standard projections for radiographing the forelimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the forelimb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal forelimb 4 demonstrate an understanding of principles of radiation safety
	10.30-11.20 11.30-12.30	B 2 B 1		
Thursday Feb 27th CG (VP) and LM	**8.30-. 9.20** 9.30-10.20	A 1 A 2	**3** **Pelvis and Hindlimb** Radiographic technique and anatomy of the canine and feline fore- and hindlimb	1 list and identify the standard projections for radiographing the hindlimb in dogs and cats 2 identify and interpret the normal and comparative radiographic anatomy of the hindlimb in dogs and cats 3 demonstrate an understanding of radiographic technique relevant to the small animal hindlimb 4 demonstrate an understanding of principles of radiation safety
	10.30-11.20 11.30-12.30	B 1 B 2		

Thursday March 19th RM(VP) and LM	**8.30-. 9.20** 9.30-10.20 10.30-11.20 11.30-12.30	A 2 A 1 B 2 B 1	**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 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
Thursday Mar 26th RM (VP) and LM	**8.30-. 9.20** 9.30-10.20 10.30-11.20 11.30-12.30	A 1 A 2 B 1 B 2	**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
Thursday April 9th RHAP and LM	**8.30-. 9.20** 9.30-10.20 10.30-11.20 11.30-12.20	A 2 A 1 B 2 B 1	**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
Thursday Apr 16th RHAP and LM	**8.30-. 9.20** 9.30-10.20 10.30-11.20 11.30-12.20	A 1 A 2 B 1 B 2	**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
Final exam ; Wednesday May 6th 2020 9.30am Venue : TBC				

Lab Groups:

Lab groups will be as for the Anatomy I labs, however the groups will attend the Radiology Lab when they are not assigned for Anatomy and vice versa.

Group lists will be supplied on MyCourses as soon as they will be available.

RHAP, LM, HMcA, SGU, 2020

SVM Course Code: **SAMS 502**
Course Director: Dr R Hagen Argudin Pina
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Equine radiology: Forelimb Lecture 4: The equine forelimb: metacarpus, carpus, elbow, shoulder Lab 3: Equine foot	NA	March 16 -21 Pack , travel, unpack, arrive, settle in, breathe, arrange for online course continuation….	
Equine radiology: Hindlimb Lecture 5: hindlimb Lab 4: Shoulder, elbow, carpus, metacarpus	**Equine Foot** 1. Lecture 3 is on MyCourses/ Panopto from Friday February 28th 2. Lab 3 Questions: The equine foot: Powerpoint pdf on 3. MyCourses/Resources Self-study questions for Lab 3: Powerpoint pdf on MyCourses/ Resources On Friday: 4. Answer Keys to Lab 3 as Powerpoint pdf and Panopto recording on MyCourses/ Resources/ Panopto 5. Self-study questions Key as Powerpoint pdf on MyCourses/ Resources	March 23- 29 1. Review Lecture 3 Powerpoint pdf 2. listen to the Panopto recording of Lecture 3 3. Work through Lab 3 questions 4. Work through the self-study questions to Lab 3 On Friday: 6. check the Answer key to Lab 3 7. check key to self-study questions to Lab 3	NA
Equine radiology: Skull Lecture 6 : skull		March 30- April 5 Prepare for Quiz 1 next week: 1. Review course material for Lectures 1, 2 and 3 including Panopto recordings. 2. Review Labs 1, 2 and 3 3. Review self -study questions	**NA**

Equine Hindlimb Lab 5: stifle, tarsus, metatarsus	Equine radiology: Forelimb 1. Lecture 4: The equine forelimb: shoulder, elbow, carpus, metacarpus on MyCourses/ Resources and Panopto 2. Lab 4: The equine forelimb: shoulder, elbow, carpus, metacarpus: Questions as Powerpoint pdf on MyCourses/ Resources 3. Self-study questions to Lab 4: Powerpoint pdf on MyCourses/ Resources On Friday: 4. Answer Keys to Lab 4 as Powerpoint pdf and Panopto recording on MyCourses/Resources/ Panotpo 5. Self-study questions key as Powerpoint pdf on MyCourses/ Resources	April 6 – 12 During the week: 1. Review Lecture 4 Powerpoint pdf 2. listen to the Panopto recording of Lecture 4 3. Work through Lab 4 questions 4. Work through the self-study questions to Lab 4 On Friday: 5. check the Answer key to Lab 4 6. check the key to the self-study questions to Lab 4	**Quiz 1** Lectures 1,2 and 3 Labs 1, 2 and 3 18 questions = 18 points
Avian Radiology Lecture CANCELED	Equine radiology: Hindlimb 1. Lecture 5: Stifle, tarsus, metatarsus on MyCourses / Resources and Panopto 2. Lab 5 Questions: The equine foot: Powerpoint pdf on MyCourses/Resources 3. Self-study questions for Lab 5: Powerpoint pdf on MyCourses/ Resources On Friday: 4. Answer Keys to Lab 5 as Powerpoint pdf and Panopto recording on MyCourses/ Resources/ Panopto 5. Self-study questions Key as Powerpoint pdf on MyCourses/ Resources	April 13 – 19 During the week: 1. Review Lecture 5 Powerpoint pdf 2. listen to the Panopto recording of Lecture 5 3. Work through Lab 5 questions 4. Work through the self-study questions to Lab 5 On Friday: 5. check the Answer key to Lab 5 6. check the key to self-study questions to Lab 5	NA

	Equine radiology: Equine skull 1. Lecture 6: Equine skull Powerpoint pdf and Pnopto recording are on MyCourses/ Resources/ Panopto 2. Lab 6 Equine skull Questions:: Powerpoint pdf on MyCourses/ Resources 3. Self-study questions for Lab 6: Powerpoint pdf on MyCourses/ Resources On Friday: 4. Answer Key to Lab 6 as Powerpoint pdf and Panopto recording on MyCourses/ Resources/ Panopto 5. Self-study questions Key as Powerpoint pdf on MyCourses/ Resources	April 20 – 26 1. Review Lecture 6 Powerpoint pdf 2. listen to the Panopto recording of Lecture 6 3. Work through Lab 6 4. Work through the self-study questions to Lab 6 On Friday: 5. check the Answer key to Lab 6 (pdf/ Panopto) 6. check the key to the self-study questions to Lab 6	NA
		April 27 – May 3rd Complete any unfinished units	
		May 4 – 10 Pepare for Quiz 2 next week: Lectures 4,5, and 6 Labs 4,5 and 6 Self-study questions	
		May 11 - 16	Quiz 2 Lectures 4, 5 and 6 Labs 4, 5 and 6 18 questions = 18 points
Total lectures: 7 Total Labs: 6	Total lectures : 6 Total Labs: 6		

Continued below

A**ssessment Summary:**

Original Point Allocation:	Revised Point Allocation
Total points = 45 *Total points breakdown:* One final exam (cumulative)	Total points = 36 *Total points breakdown:* Two quizzes (not cumulative)

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. 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.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

***RADIOLOGY II SYLLABUS* (1 credit)**

SAMS 502, TERM II

Spring 2020

I. Course Faculty and Staff Information

Course Director: 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 Location: Cassia building, True Blue Campus, Lower floor
Office Hours: by appointment via e-mail

Participating Faculty: 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, (part time)
Email Address: hmcallister@sgu.edu
Office Location: Cassia building, True Blue Campus, Lower floor
Office Hours: by appointment via e-mail

Leticia Marcelino DVM, MSc, MRCVS, OV
Instructor in Diagnostic Imaging SAMS, SVM SGU
Email address ltomasma@sgu.edu

Office location – Small animal clinic

Office hours: by appointment via e-mail

Christine Gibbs, BVMS, DVR, PhD, Dip ECVDI

Visiting Professor

Rachel Moon, DVM, DACVR

Visiting Professor

II. Course location (see XII. for schedules)

Lectures: All morning lectures: **David Brown Hall**

Afternoon lecture Feb 14th: **KB Taylor Hall Blue**

Wednesday and Friday afternoon Labs*:* **Charter Hall Laboratory**

Examination location: Final: **TBC**

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 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. Special accommodation

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

VII. Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs. No white coats are needed for radiology labs.

VIII. Course rationale

The student should at the end of the course be able to competently recognize the normal radiological anatomy of equines and bovines. The basic principles of how the image formation and interpretation are reapplied building on Term 1/ SAMS 501 knowledge. Students should be familiar with the standard projections, the anatomy they show and how they are obtained. The course offers the theoretical and practical basis for learning and understanding radiological anatomy of the equine and bovine species. The course serves as a basis for clinical radiology taught in terms 5 and 6.

Lectures are scheduled ahead of the lab classes. The course contains **7 lectures**. Lectures will be on normal bovine and equine radiological anatomy, standard projections, examples of the juvenile and adult skeleton of both species and species differences. The lectures will cover the distal and proximal fore and hindlimbs, thorax, vertebral column and the skull. One lecture is dedicated to basic radiological technique and anatomy of the avian species.

Lab Classes are held in Charter Hall Laboratory according to the schedule. For each lab session the class is split into four groups to facilitate and improve student – tutor interaction. Two groups (1 and 2) attend lab on Wednesdays and two on Fridays respectively. The lab groups are the same as for the Bacteriology/ Mycology labs with the groups not in the Bact/Myc lab in Radiology lab and vice versa.
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 slides projected on the overhead screens in Charter Hall Lab. In addition, the tutors may ask questions on the individual cases during interactive discussion of the cases presented. The cases/ questions will focus on the material covered in the lecture(-s) prior to the Lab session. The radiological anatomy will be assessed by the whole group with interactive discussion, question and answer sessions and emphasis will be on the use of correct terminology and identification of projections for the radiological anatomy presented.
Students are expected to prepare for the laboratory sessions in advance and revise the anatomy (as far as possible) and the corresponding radiology lecture material, as this will make the discussions more fruitful and 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 attended each lab, an *answer key* including the images and any additional explanations will be made available on 'My Courses', ' 2020-01-SAMS502-V-0- Radiology II', 'Resources', 'Radiology Labs' for review.
The Lab sessions require **mandatory** attendance and students must make sure to attend the allocated lab session. Students will be required to sign in for each lab session. Part of the course will be instructed by Visiting Professors (VP) (Dr Gibbs, Dr Moon) as indicated under XII.

Schedules for both lectures and lab sessions are appended under '***Appendices***' at the end of this Syllabus.

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.

IX. 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). 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.

X. Course level outcomes

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

- Have knowledge on the basic principles of radiographic technique, sources of potential artefacts and their prevention as taught in Radiology I
- Recognise the standard *projections* used in equine and bovine radiology
- Recognise the function of the different projections, i.e. what anatomical structures are highlighted in what projection
- Identify and explain the normal radiological anatomy of the skeletal and thoracic systems of the equine, bovine and body systems of avian species, juvenile specimens and variations thereof
- Explain how to obtain and label equine and bovine radiographs correctly
- Apply the correct radiographic and radiological terms used in describing radiographs
- Acquire skills in verbally describing radiographs
- Be aware of the potential radiation hazards to personnel, patients and the public when performing equine/bovine and avian radiographs in order to ensure its safe use in clinical practice

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course level outcome	**SVM program level outcome**
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.	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals B1 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	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals B1 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.	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine

	B1 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.	A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine B1 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.	A1 Recall, understand and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine B1 Demonstrate, evaluate and model effective communication with clients, the general public, professional colleagues and responsible authorities.

XII. Lesson and Laboratory learning outcomes

Appended as a table at the end of the syllabus as part of the course schedule under „***Appendices***".

XIII. Course Schedule

Appended as a table under '***Appendices***'.

XIV. Grading and assessment policy

Types of assessment: There will only be **one** cumulative Final exam. The examination will consist of MC question type questions and a considerable part of the questions will include images. The examination (this includes Make-up/ Resit and Completion exams) will be in ExamSoft. Resit/ Make-up and Completion exams may include question types other than MC. Students need to be familiar with the use of ExamSoft/ *Examplify* software. A 'practice examination' can be downloaded in ExamSoft to practice image manipulation.

Examination material will be all information provided during lectures and radiology lab discussions and all the material made available for Radiology II/ SAMS 502 on 'My Courses' including all lecture notes, lecture and lab powerpoint pdfs.

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.

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.

Examination details: SAMS 502 / Radiology II

Examination location: Final Exam: TBA

Examination	Spring 2020	MCQs	Total points	Content
Final exam	May 13th 9.30am	**45**	**45**	Lectures 1 to 7 Labs 1 to 6

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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 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.

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.

XV. Recommended study strategies

Students should read the material provided prior to attending lectures and labs. When studying for the examination, all the material that is provided on MyCourses must be reviewed. Exam contents are roughly summarised under XIV 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 the equine and bovine skeletons. 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.

XVI. Instructor's expectations of the student

Students are expected to read the supplied documentation before class. Revision of corresponding material from Radiology I and normal anatomy prior to the lectures/ radiology labs is recommended. This material is provided on *My* Courses and in the Anatomy I and II courses. Students are encouraged to highlight discrepancies in the teaching material provided in a timely manner so that these can be clarified. 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 and discussed during the lab classes and any questions that may arise can be answered.

XVII. 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 after the lecture.

XVIII. Attendance policy

Students are requested to refer to the Student manual (available on the Carenage website): Pages 7 and 8 for description of attendance policy and **reporting of absences**.
Students are expected to attend all classes for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy. If absence from individual classes, examinations, and 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).

Lecture attendance policy: Students are expected to attend lectures.

Laboratory session attendance policy: Radiology II Lab sessions require mandatory attendance. A sign-in sheet is provided during the Lab and each student is responsible to sign it personally. If for some reason (for example a medical problem or an approved off- island trip) a student cannot attend the allocated Lab session, then the student must contact Dr. Hagen Argudin Pina, Dr. Marcelino or Dr. McAllister in advance to advise them that a lab will be missed and see if it is possible to attend a different session. Whenever possible students are encouraged to swap lab groups with a colleague in such cases so as to keep the group size even.

-> *Note* that Lab attendance does **not** incur points towards the final course grade, however unexcused absences from lab sessions may negatively influence the final course grade.

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

Only documented excuses, via the University Health Clinic, or via the SGU web page: under ***Carenage/ Medical Excuse Submissions/ SVM Examinations*** will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic **PRIOR** to the time of the exam. Excuses that are issued **after** the examination has started/ been given will not be accepted. Do not expect to be excused for weddings, birthdays or conferences. Funerals of very close family members are adequate justification, but little else will 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.

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

Students are encouraged to download the exam *as soon as possible* to minimize potential problems occurring with the download and should enter the examination hall with the exam downloaded on their computers. Exams are generally made available 24 hours prior to examination start.

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 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.
5. Examinees experiencing difficulties with their laptop and or the downloading of exams are encouraged to visit the IT department for assistance prior to exam day or asap. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

On Exam Day

Students must be at the examination location ***30 minutes before the examination begins*** to allow for timely and orderly safe storage of any bags and unrushed allocation of seating in the exam venue.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
4. An examinee who is experiencing a **computer problem** should **notify a *proctor*** immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list (if available) posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behaviour.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. **No communication of any kind is permitted between examinees after entering the examination room.**
10. **Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.**
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.

15. To **start the exam**, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the (green) "Congratulations! Your answer file(s) uploaded successfully," (green) screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

No other personal belongings will be permitted.

Students are requested to be silent in the corridor/ area directly outside the exam venue as this can disturb and distract their peers who are still working on the exam inside the venue.

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 *Examplify*, 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.

XXI. Copyright policy (if applicable)

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

Appendices:

Appended are the lecture and radiology lab schedules and the groups for the Labs:

¨SAMS 502 / Radiology II

Date, Time **Lecture No** **Lecturer**	**Lecture content**	**Lecture learning outcome**
Fri Feb 14th 3.30 pm **Lecture 1** RHAP David Brown Hall	**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
Tue Feb 18th 10.30 am **Lecture 2** CG (VP) David Brown Hall	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

Fri Feb 28th 10.30 am **Lecture 3** CG (VP) David Brown Hall	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.
Tues March 17th 11.30 am **Lecture 4** RM (VP) David Brown Hall	The **equine forelimb**: Shoulder, elbow, carpus and metacarpus. Projections, radiological anatomy, variations, labeling.	Explain how the equine shoulder, elbow, carpus and metacarpus are radiographed. List and identify the standard radiographic projections, using correct descriptive terminology, for each of these joints and the metacarpus. List and identify the common oblique radiographic projections of the equine carpus and metacarpus and be aware of the reasons for their use. Identify the normal radiographic anatomy of the adult and juvenile equine carpus, metacarpus, elbow and shoulder and the anatomical variations.
Tues March 24th 10.30 am **Lecture 5** RM (VP) David Brown Hall	The equine hindlimb: **Stifle, tarsus and metatarsus**. Projections, radiological anatomy, variations, labeling.	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
Fri April 3rd	The **equine skull**:	Explain how the equine skull is radiographed

11.30 am **Lecture 6** RHAP David Brown Hall	Technique, standard projections, radiological anatomy, variations, labeling.	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.
Fri April 17th 11.30 am **Lecture 7** RHAP David Brown Hall	**Avian** Radiology: Projections, radiological anatomy, variations, labeling	Explain the practical aspects of avian radio-graphy including positioning and the standard projections. Identify the normal radiographic anatomy of the avian species

XIII. Radiology II Lab Contents and Learning Outcomes:

Radiology Labs start at 1.30 and finish at 2.20 (Group 1) and at 2.30 - 3.20pm (Group 2).
A list with the Lab groups is appended below the .Lab schedule

Lab location: **Charter Hall Laboratory**

Lab No **Lecturer**	**Lab groups** **Date & time**	**Lab content**	**Lab learning outcome**
Lab 1 CG (VP) Group 1 Group 2 Group 1 Group 2	 **Wed Feb 19th** 1.30 -2.20pm 2.30-3.20pm **Fri Feb 21st** 1.30-2.20pm 2.30-3.20pm	Bovine Radiography; radiology and technique. Normal anatomy, variations, labeling	Explain how the bovine limbs are radiographed, list and identify the standard (including oblique) projections, identify the normal radiographic anatomy of the juvenile and adult bovine limbs

Lab 2 CG (VP) Group 2 Group 1 Group 2 Group 1	**Wed Feb 26th** 1.30-2.20pm 2.30-3.20pm **Fri, Feb 28th** 1.30-2.20pm 2.30-3.20pm	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
Lab 3 **RM(VP)** Group 1 Group 2 Group 1 Group 2	**Wed Mar 18th** 1.30-2.20pm 2.30-3.30pm **Fri Mar 20th** 1.30-2.20pm 2.30-3.20pm	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
Lab 4 **RM (VP)** Group 2 Group 1 Group 2 Group 1	**Wed Mar 25th** 1.30-2.20pm 2.30-3.20pm **Fri Mar 27th** 1.30-2.20pm 2.30-3.20pm	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
Lab 5 **HMA** Group 1 Group 2 Group 1 Group 2	**Wed April 8th** 1.30-2.20pm 2.30-3.20pm **Thurs Apr 9th** 1.30-2.20pm 2.30-3.20pm	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)

Lab 6 RHAP Group 2 Group 1 Group 2 Group 1	**Wed Apr 15th** 1.30-2.20pm 2.30-3.20pm **Fri April 17 th** 1.30-2.20pm 2.30-3.20pm	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
Final Exam: Wednesday May 13th 9 .30 am **Venue** TBC			

Groups for Term 2 for Radiology II: Spring TERM 2020

Laboratory Groups for Term II for RADIOLOGY II_Spring-Term 2020- Same groups as for Bact/Myc Labs – will be appended asap.

L Marcelino/ R Hagen Argudin Pina, Spring 2020

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT

Veterinary Research Investigator 3 **(1 credit)**

SAMS504 (Term 3)

Spring 2020

I. Course Faculty and Staff Information

Dr Heidi Janicke, VetMed, PhD, MRCVS, Dipl. ECVS, SFHEA
Associate Professor in Large Animal Surgery
Office: Cassia Building (SGU campus map: # 17)
Tel: 444 - 4175 ext. 3306
Email: hjanicke@sgu.edu
Office Hours: by appointment

II. Course location

TBC

III. Prerequisite and/or co-requisite courses

PTHB502 Veterinary Research Investigator I
SAMS503 Veterinary Research Investigator II

IV. Required resources (texts, journal articles, course notes, laptop specs, etc.)

All resources on MyCourses under Resources

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

N/A

VI. Special accommodation

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

VII. Other requirements

N/A

VIII. Course rationale (catalogue course description)

In this course the student will use their knowledge gained in VRI 1& 2 to put the theory of EBVM into practice. In groups they will develop a clinically relevant PICO question and write a critically appraised topic document. The course will start with a mandatory seminar in which the groups will be formed and clinically relevant topics identified. In the following set-aside time-slots, the students will then develop a PICO question and write a CAT. Online resources will be made available to assist in the literature search and the assessment of the publications identified. Guidelines on how to write a CAT will be used.

IX. Course-level outcomes

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

1. Ask a focused and answerable question that translates uncertainty to an answerable question (PICO)
2. Search for the best available evidence
3. Critically appraise the evidence for validity and clinical relevance
4. Understand how to communicate the results into clinical practice

X. Lesson-level outcomes

There are no specific LLOs.

XI. Alignment of Course Level Outcomes with Program Level Outcomes

Course level outcome	SVM program level outcome
CLO 1 Ask a focused and answerable question that translates uncertainty to an answerable question (PICO)	**A. Core Medical Knowledge** 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. **B. Core Professional Attributes** PLO 15 Model lifelong continuing education and professional development. **C. Core Clinical Competencies (Skills)** PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
CLO 2 Search for the best available evidence	**A. Core Medical Knowledge** 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. **B. Core Professional Attributes**

	PLO 15 Model lifelong continuing education and professional development.
CLO 3 Critically appraise the evidence for validity and clinical relevance	**A. Core Medical Knowledge** 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. **B. Core Professional Attributes** PLO 15 Model lifelong continuing education and professional development. **C. Core Clinical Competencies (Skills)** PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine
CLO 4 Understand how to communicate the results into clinical practice	**A. Core Medical Knowledge** 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. **B. Core Professional Attributes** PLO 14 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. PLO 15 Model lifelong continuing education and professional development. **C. Core Clinical Competencies (Skills)** PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine

XII. Course Schedule

Introduction to course and clinical question development workshop **(mandatory)**:
January 23rd *9:30-11:30*

Independent group work on PICO and CAT:
February 13th *9:30-11:30*
February 20th *9:30-11:30*
February 27th *9:30-11:30*
March 19th *9:30-11:30*
April 2nd *9:30-11:30*
April 9th *9:30-11:30*
April 23rd *9:30-11:30*

Assignment and peer review deadline: Wednesday April 29th 5:30pm

XIII. Grading and assessment policy, and grading rubrics

- **10% Peer review**: ability to work as a group
  Please give your honest opinion, the evaluation is anonymous and this is where your mark will reflect your individual commitment to the project

- **90% PICO and CAT assignment**
  Assignment brief and worksheet are available on MyCourses under Resources and Assignment

XIV. Recommended study strategies

Decide upon a group leader who will coordinate the work on the assignment and be the liaison with the Course Director. Ensure everyone knows their role and does their work.

XV. Instructor's expectations of the student

Students are expected to be proactive and participate actively in their group, communicate effectively, and contribute to the content and organization of the work that needs to be done.

XVI. Professionalism statement

Please exhibit professional and collegial behavior during communication with your group, which includes meeting of deadlines, response to messages and emails, avoiding of distractions during meetings from mobiles etc., as well as active contribution to writing/discussions/corrections of the group.

Please turn cell phones off or silent them during presentations and meetings.

XVII. Attendance policy

Attendance to the introductory seminar is mandatory. All students should adhere to meetings scheduled by the group.

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

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.

XIX. ExamSoft policy

N/A

XX. Copyright policy

All 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.

SVM Course Code: SAMS 513
Course Director: Dr R Hagen Argudin Pina
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	***Updated Course Format:**	Weekly Learning Schedule:	5	Assessment Schedule:
Small animal skeleton 1. Lecture 18: Congenital and Developmental Disorders of the immature skeleton 2. Lecture 19: Dysplasia 3. Lecture 20: Joint disease 4. Radiology Lab 4	Week of transition, travel and online training	March 16= 21		NA
Equine radiology Lectures and Lecture notes: 1. Lecture 21: Equine foot 2. Lecture 22: Equine fetlock Long notes supplied in MyCourses/Resources for Lectures 21 and 22 Lectures via Panopto Radiology Lab: 3. Radiology **Lab 4:** Questions supplied as Powerpoint pdf: Work through questions once the Small animal skeleton lectures are finished Revision: 4. Revise Term 2 Equine foot, fetlock, metapodi and carpus Lectures and Labs: Term 2 material is supplied in MyCourses/ Resources	Small animal Skeleton Lectures: 1. Lecture 18: Congenital and Developmental Disorders of the immature skeleton 2. Lecture 19: Dysplasia 3. Lecture 20: DI of joint disease Radiology Lab 4. Lab 4 **Lecture notes** supplied in MyCourses/Resources for Lectures 18, 19, 20 **Lecture Powerpoint pdfs** and lecture notes to go with lectures supplied on MyCourses/ Resources **Lectures** via Panopto: 18, 19, 20 **Radiology Lab**: Radiology Lab 4: Bones Questions in MyCourses/ Resources 5. Term 2 material is supplied in MyCourses/ Resources in folder *SAMS502 Lectures*	**March 23- 29** 1. Lecture 18: Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture 19: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lecture 20 Read lecture notes Review Lecture pdf Listen to Panopto 4. Work through the lab questions: Lab 4 Questions supplied as Powerpoint pdf: Work through questions once you have worked through the Small animal skeleton lectures 5. Revision: Revise Term 2 Lectures on Equine foot and forelimb		NA

Equine Radiology Lectures: Lecture 23: Equine metapodi and carpus, elbow and shoulder Quiz Spring 2020 on April 3rd	Equine Radiology Lectures: 1. Lecture 21: Equine foot 2. Lecture 22: Equine fetlock 3. Lecture 23: Equine metapodi and carpus, tarsus positioning(tarsus not for quiz 1) Radiology Lab 4. Lab 4 bones **Lecture Powerpoint pdfs** and **Lecture notes** to go with lectures supplied on MyCourses/ Resources **Lectures via Panopto** **Lab 4:** Bones: Answers to questions will be supplied on Friday on MyCourses/ Resources/ Radiology Labs	**March 30 – April 5** 1. Lecture 21: Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture 22: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lecture 23: Read lecture notes Review Lecture pdf Listen to Panopto 4. Work through the lab questions: Lab 4 Questions supplied as Powerpoint pdf: Work through questions 5. On Friday read the answer key to Lab 4 (will be supplied on Friday) and compare to your answers		NA
Equine Radiology Lectures: 1. Lecture 24: Equine tarsus and stifle 2. Lecture 25: Equine spine and thorax	Equine Radiology Lectures: 1. Lecture 24: Equine tarsus and stifle 2. Lecture 25: Equine spine thorax, elbow and shoulder Radiology Lab 3. Lab 5 Equine: Limb questions **Lecture Powerpoint pdfs** and **lecture notes** to go with lectures supplied on MyCourses/ Resources **Lectures via Panopto** **Radiology Lab5**: Equine: Questions 1 to 6 (limbs) **Assessments:** **4. Quiz 1**	**April 6 – 12** 1. Revision: Revise Term 2 Equine hindlimb and thorax 2. Lecture 24: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lecture 25: Read lecture notes Review Lecture pdf Listen to Panopto 4. Lab 5: Work through Equine radiology questions 1 to 6 once you have completed the lectures 5. **Review lectures 18 to 23 and Lab 4 then proceed to do Quiz 1**		**Quiz 1** **L 18 - 23** Lab 4 **18 points**

Equine Skull; CT,MRI, Nuclear medicine Revision: 1. Term 2 Lecture and Lab: Equine head 2. Basic principles of ultrasound (SAMS 513 Lecture 5) Lectures and Lecture notes: 1. Lecture 26: Equine musculoskeletal ultrasound 2. Lecture 27: Principles of CT, MRI and Nuclear medicine; Notes on CT, MRI, Nuclear medicine 3. Lecture 28: cont. Principles of CT, MRI and Nuclear medicine Radiology Lab: 1. Lab 5 questions	Equine Skull; CT,MRI, Nuclear medicine Revision: Lecture Powerpoint pdfs are available onMyCourses/ Resources Lectures: 1. Lecture 26: Equine musculoskeletal ultrasound 2. Lecture 27: Principles of CT, MRI and Nuclear medicine (this is now condensed to 1 lecture session) 3. Lecture 28: DI of the Equine Head Radiology Lab 4. Lab 5: Equine, question no7 on the skull **Lecture Powerpoint pdfs** **Lecture notes** on CT, MRI, Nuclear medicine supplied on MyCourses/ Resources **Lectures via Panopto** **Lab 5:** Equine Skull question no 7 Questions supplied as Powerpoint pdf on MyCourses/Resources	**April 13 – 19** Revision: 1 Revise Term 2 Lecture on Equine skull 2 Revise basic principles of ultrasound (Term5 Lecture5) 3 Lecture 26: Review Lecture pdf Listen to Panopto 4 Lecture 27: Read lecture notes Review Lecture pdf Listen to Panopto 5 Lecture 28: Review lecture pdf Listen to Panopto 6 Lab 5: Work through the equine skull question no. 7 once you have finished working through lecture 28		NA
DI of Small animal skull and the vertebral column Revision: Term 1 Lecture and Lab on Small animal skull Lectures and Lecture notes: 1. Lecture 29: DI of the Equine Head 2. Lecture 30: DI of canine/ feline skull and Lecture notes 3. Lecture 31: Radiology of the small animal vertebral column and Lecture notes	SA skull and vertebral column 1. Lecture 29: DI of canine/ feline skull and Lecture notes 2. Lecture 30: Radiology of the small animal vertebral column and Lecture notes 3. Lecture 31: Small animal Myelography **Lab 5:** Answers to questions will be supplied as Powerpoint pdf on MyCourses/Resources on Friday	**April 20 – 26** 1 Revise Term 1 Lecture on the SA skull 2 Revise term 1 lecture on SA vertebral column 3 Lecture 29: Review Lecture pdf Listen to Panopto 4 Lecture 30: Read lecture notes Review Lecture pdf Listen to Panopto 5 Lecture 31: Review lecture pdf		NA

4. Lecture 32: Small animal Myelography Radiology Lab; Work on **Lab 5** questions	Revision of course material in preparation for Quiz 2	April 20 to 26 continued Listen to Panopto 6 Lab 5: Work through answers and compare with your answers 7 Review course material in pre-paration for **Quiz 2 next week**: Lectures 24 to 29 and Lab 5		
DI of the endocrine organs, Small animal musculoskeletal ultrasound, US of small parts Lectures: 1. Lecture 33: DI of the Endocrine organs in cats and dogs and Lecture notes 2. Lecture 34: Musculoskeletal ultrasound in the cat and dog, ultrasound of small parts 3. Lecture 35: Diagnostic imaging of the skull/brain/orbit/eyes Radiology Lab: Work through **Lab 6** questions	DI of the Endocrine Organs, Musculoskeletal and Small parts ultrasound Lectures: 1. Lecture 32: DI of the Endocrine organs in cats and dogs 2. Lecture 33: Musculoskeletal ultrasound in the cat and dog, ultrasound of small parts Lecture 35 is canceled Lecture notes and Lectures as Powerpoint pdfs in MyCourses/Resources and via Panopto 3. **Lab 6:** SA spine and skull: Questions supplied as Powerpoint pdf on MyCourses/Resources **4. Assessment: Quiz 2**	**April 27 – May 3** 1. Lecture 32: Read lecture notes Review Lecture pdf Listen to Panopto 2. Lecture 33: Read lecture notes Review Lecture pdf Listen to Panopto 3. Lab 6: Work through Lab questions 4. **Review lectures 25 to 29 and Lab 5 then proceed to do Quiz 2**		**Quiz 2** **L 24- 29** Lab 5 Thursday April 30th **20 points**
Lecture 36: Principles of Digital Radiography (DR) and Computerised Radiography (CR) Lab 6: Work through questions	Lecture 36 is canceled **Lab 6**: Answers to questions will be supplied as Powerpoint pdf on MyCourses/Resources	**May 4 – 10** 1. Lab 6: Work through questions and compare answers with answer key that will be supplied on Friday as a Powerpoint pdf on My Course/Resources 2. Work through Lab 6 and compare answers with answer key provided on MyCourses/Resources 3. Prepare course material for **Quiz 3 next week**		NA

		(TBC): Lectures 29 to 33 and Lab 6		
Final exam, Wed May 14 Canceled	Quiz 3 **Lectures 30 – 33** Lab 6	**May 11 – 17** Prepare course material for **Quiz 3 :** Lectures 30, 31, 32 and 33 Lab 6		**Quiz 3** **L 30- 33** Lab 6 Wednesday May 14th (TBC) 16 points
Total lectures: 36 (entire course)	Total lectures: 33 (16 post Midterm/ online)			Total quizzes: 3

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 138 *Total points breakdown:* Midterm 50 points Quiz 18 Final 70	Total points: 104 *Total points breakdown:* Midterm 50 (already done) Quiz 1 18 Quiz 2 20 Quiz 3 16

In the original course the final exam was cumulative over the entire course, i.e. Lectures 1 - 36 and Labs 1-6 were exam material. In the condensed course version, 3 quizzes cover only the material studied in the time periods leading up to the individual quizzes.

Learning outcomes: please list any CLO or LLO's which were omitted below:
Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. 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

Lectures time was reduced to one lecture instead of two, content will be reduced so as to meaningfully convey the basics as stated above. The lecture notes supplied remain unchanged since some minimal description is absolutely necessary to convey these complex concepts.

2. 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, Ocular ultrasound, Retrobulbar disease, CT of the orbit and eyes, Imaging of Hydrocephalus, Examples of: CT of the skull and brain and MRI of the skull and brain.

This lecture was canceled

3. Unterstand the basic principles of how a digital/ computerised image is created and what is different / similar to analog radiography.

This lecture was canceled

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT of Small Animal Medicine and Surgery (SAMS)

***DIAGNOSTIC IMAGING SYLLABUS* (3 credits)**

SAMS 513, TERM V

Spring 2020

I. Course Faculty and Staff Information

Course Director: Regine Hagen Argudin Pina, Dr med vet, CertVR, DipECVDI,
European specialist in Veterinary Diagnostic Imaging,
Associate Professor Diagnostic Imaging, SAMS, SVM, SGU
Email Address: rhagenar@sgu.edu
Office Location: Cassia building, lower floor, True Blue Campus
Office Hours: by appointment via e-mail

Participating Faculty: Hester McAllister, MVB, DVR, DipECVDI
European specialist in Veterinary Diagnostic Imaging,
Professor Diagnostic Imaging, SAMS, SVM, SGU (part time) and
University College Dublin, Ireland, (part time)
Email Address: hmcallister@sgu.edu
Office Location: Cassia building, lower floor, True Blue Campus
Office Hours: by appointment via e-mail

Administration: Ms Ruth Thornhill
SAMS, Cassia building, lower floor, True Blue Campus
Email Address: rthornhill@sgu.edu

II. Course location

Lectures: **Ray and Jan Sis Hall West (VSL West)/ Lecture theatre 1** (*Appendices* for schedule)

Monday morning Labs: **Charter Hall Laboratory** (see *Appendices* for schedule)

Examination location: Midterm: **Modica South** ; Quiz **St John's Hall** ; Final Exam: **Modica North**

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 resources

All material supplied on MyCourses/ 2020-01-SAMS513-V-0- Diagnostic Imaging-(21139)

V. Recommended resources

Main recommended textbook: Thrall, D.E. **Textbook of Veterinary Diagnostic Radiology**, 7th Edition, Elsevier/ Saunders 2018. Includes chapters on physics of radiology and normal radiographic anatomy of Canine and Equine species. This is a very good reference for more in-depth reading. It covers all the material that will be discussed in lectures and labs. Available at the library and online versions can be purchased.

Additional resources: Supplied on *My courses*:

This material contains additional background information which is ***not*** material that will be examined. Resource on Digital Radiography: **Thrall, D.E. Textbook of Veterinary Diagnostic Radiology**, 6th Edition, Elsevier/ Saunders, 2013: Chapter 2: Digital Radiographic Imaging, pages 22 to 37.

Additional recommended textbooks:

Kealy K., McAllister H. and Graham J.P. **Diagnostic Radiology and Ultrasonography of the Dog and Cat**, 5th edition. Saunders/ Elsevier 2011.

Holloway A. and McConnel F. **BSAVA Manual of Canine and Feline Radiography and Radiology; A Foundation Manual**, 1st edition. BSAVA 2014.

Kirberger R.M., McEvoy F. J. **BSAVA Manual of Canine and Feline Musculoskeletal Imaging,** 2nd edition. BSAVA 2016.

Schwarz T. and Johnson V. **BSAVA Manual of Canine and Feline Thoracic imaging,** 1st edition. BSAVA 2008

O'Brien, R. and Barr F. **BSAVA Manual of Canine and Feline Abdominal imaging**, 1st edition. BSAVA 2009.

Butler,J.A., Colles, C.M., Dyson, S.J., Kold, S.J. and Poulos, P.W., **Clinical Radiology of the Horse,** 4th Edition. Wiley-Blackwell 2017. Kindle edition available.

Mattoon J.S. and Nyland T.G. **Small Animal Diagnostic Ultrasound**. 3rd edition, Elsevier/ Saunders, 2015. Kindle edition available.

Penninck D. and d'Anjou M.A. **Small Animal Ultrasonography**, 2nd edition. Wiley/ Blackwell, 2015. Kindle edition available.

Barr F. and Gaschen L. **BSAVA Manual of Canine and Feline Ultrasonography**, 1st edition. BSAVA 2011.

Dennis R., Kirberger R.M., Barr F., Wrigley R.H. **Handbook of Small Animal Radiology and Ultrasound. Techniques and Differential Diagnoses**. 2nd Edition, Elsevier 2010.

Ayers Susie. **Small Animal Radiographic Techniques and Positioning**, Wiley& Blackwell, 2012.

Handbook of Equine Radiography by Martin Weaver and Safia Barakzai, Saunders and Elsevier, 2010.

Websites: These are definitively worth looking at:

Radiology website with normal radiographic anatomy of main domestic species of the University of Illinois:

http://vetmed.illinois.edu/courses/imaging_anatomy/index.html

London Royal Veterinary College website on normal radiographic anatomy:

http://www.onlineveterinaryanatomy.net/

VI. Special accommodation

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

VII. Other requirements

For the lab sessions, writing material of your choice is required to write responses for the cases provided during the labs. No white coats are required for lab sessions.

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 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 are held according to the schedule provided under *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.

Lab Classes are held on Monday mornings in Charter Hall Laboratory in two hourly sessions to ¼ of the class according to the schedule (see under *Appendices* for dates, times, contents and groups; groups will be announced once all students are registered for the term).
Labs may be presented differently depending on the instructor present, however the content will be the same. An effort is made that in each Lab session the cases/ questions will focus on material covered in lectures which are usually held prior to the Lab sessions (unfortunately due to timetabling this will not always be possible for all groups in which case more explanation will accompany the cases).
Students are expected to prepare for each lab by reviewing the lecture material taught prior to the labs. This will increase the learning effect of each lab session and allow for questions to arise and be answered and/or further explanations given. The lab sessions are a regular and continuous *formative assessment* throughout the course. The images are NOT provided prior to the lab sessions to encourage active participation and simulate a clinical setting, where images have to be reviewed on the spot. Once the entire class has performed a Lab session, an answer key for the cases and including the images and explanations will be available on *MyCourses* for review. Lab content will be examined in the examinations (Midterm, Quiz, Final).
Lab Sessions may be run as follows:
Students are encouraged to sit in evenly sized groups at the tables in front of the large screens to optimise viewing and discussing the images/ cases. Sometimes the images may be displayed on the small computer screens.
Students will be working in pairs and will be expected to evaluate radiographs of a series of cases and give (oral and written) answers to a number of printed questions, which will be provided. The images will be projected on the large overhead screens in the Charter Hall Laboratory and 2-5 minutes will be allocated to each case. The cases will then be reviewed by the whole group with interactive discussion, question and answer sessions.
Alternatively, the cases will be viewed as a group and the answers will be prepared by each group for one case that will be presented to the class followed by interactive discussion, question and answer sessions.

Emphasis will be on the use of correct descriptors for the abnormalities presented and use of correct radiological terminology. Every student will be encouraged to give a verbal description of images using correct radiological terminology and descriptors and formulate a correct radiological diagnosis, differential diagnoses and recommend further investigations and other imaging studies where appropriate.

IX. Course Learning Outcomes

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
- understand the basic principles of image formation and interpretation in CT, MRI and Scintigraphy.
- 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 verbally describing abnormalities seen in the images of various modalities and compile structured reports using correct terms and descriptors.
- be familiar with the basic terms used in describing CT, MRI and Scintigraphy images
- 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

The Course Level Outcomes :

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

I. Identify and interpret the normal anatomical features and anatomical variations mainly in the dog, cat, horse and bovine in radiological and ultrasonographic modalities

II. Identify and interpret radiological (including contrast studies) and ultrasonographic abnormalities of common clinical conditions in small and large animals; and some examples of typical appearances of common lesions as seen in CT, MRI and Scintigraphy modalities mainly in small animals.
III. Acquire and apply correct radiological terms and descriptors in formulating a structured imaging report focusing on radiology and ultrasonography.
IV. Formulate appropriate choice of diagnostic tests and imaging modalities in case discussions
V. Explain the basics of image formation and interpretation in CT, MRI and Scintigraphy
VI. Demonstrate awareness of the potential radiation hazards to patient, personnel and the public when using ionising radiation 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 Couse 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.	A1 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 including axial and appendicular skeleton, skull, thorax and abdomen.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
Recognise and correctly interpret radiological signs associated with commonly recognized pathology of the body systems of the common	A1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals.

domestic species (equine, canine, feline and some bovine).	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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
Recognise and correctly interpret radiological signs associated with commonly recognized pathology of the abdominal parenchymal organs detected by abdominal ultrasound.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
Appraise the normal heart and great vessels and the common abnormalities/ pathologies thereof on both radiographs and echocardiograms.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities.

	C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
Explain the basic principles of image formation in radiology, ultrasound, CT, MRI and Scintigraphy.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. A11 Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
Recognise the best use of advanced diagnostic imaging modalities (CT, MRI, Scintigraphy) and in which cases to recommend what modality.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
List the commonly used types of contrast media used in diagnostic imaging, the method of administration the most common types of studies performed and the risks and contraindications of their use.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible

	authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
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.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.
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.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.

Explain and recommend the use of ultrasound to perform interventional studies such as fluid/ tissue sampling and the standard practice of such.	A1 Recall, understand, and adequately utilize multidisciplinary knowledge 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. A6 Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. B1 Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities. C1 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.

XII. Course Schedule

Appended as a table at the end of the Syllabus under *Appendices*

XIII. Grading and assessment policy, and grading rubrics

Types of summative assessment: There will be **1 Quiz**, **1 Midterm exam** and **1 Final exam**. All examinations will consist of MC question type and a considerable number of the questions will include images. All examinations will be in *ExamSoft*. Resit (Make-up) and Completion exams will take place using *ExamSoft*. Completion Quizzes may be in paper format. Completion and Resit exams may include question types other than MC. The student has to be familiar with the use of *ExamSoft*/ *Examplify* software prior to the examinations.

Examination material will be based on all of the information provided on *MyCourses*, during lectures and radiology lab discussions including lecture notes, lecture and lab Powerpoint pdfs and any additional material as indicated and provided on *MyCourses*. The Quiz and Midterm exams will assess the material taught prior to these exams, the final exam is cumulative (all material of the entire course is assessed). Exam details will be communicated prior to the examinations on MyCourses. *There will be no detailed breakdown of questions published prior to the final exam.*

Exams and the Quiz are sequestered. The only time when questions can be viewed is during 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.

Grading scale:
In all exams, a maximum of 1 point is awarded per question answered correctly. Questions may be complex and in some cases multiple correct answers must be given to obtain the point.

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	Spring 2020	Number of MCQs	Maximum points	Lecture content	Lab content
Midterm Modica South	March 11th 1.30pm	50	50	Lectures 1 - 17	Labs 1+2 +3
Quiz St John's Hall	April 3rd 1.30pm	18	18	Lectures 18- 23	Lab 4
Final exam Modica North	May 14th 1.30pm	70	70	Lectures 1 - 37	Labs 1 to 6
Total		138	138		

Please note that the content of the individual exams may change if changes are applied to the schedule.

XIV. Recommended study strategies

Students should read the material provided prior to attending lectures and labs. When studying for examinations, all the material relating to an exam that is provided on MyCourses must be reviewed. Exam contents are roughly summarised under XIV 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. Students are requested to ask for support if needed (request office hours, make use of DOS) in a timely manner.

XV. Instructor's expectations of the student

Students are expected to read the supplied documentation before class. Revision of corresponding material from Radiology I and II and radiological normal anatomy prior to the lectures/ radiology labs is recommended. This 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 and discussed during the lab classes and any questions that may arise can be answered.

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 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. facebook, blogs, you tube and other social media) 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 after the lecture.

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance is taken for radiology labs. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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 the relevant section in the Student manual.

- Laboratory session attendance policy: Students must make sure to attend the allocated lab session. Students are requested to sign-in for the lab sessions. If for some reason (for example a medical problem or an approved off- island trip) the student cannot attend the allocated session, then the student must contact Dr. Hagen Argudin Pina or Dr. McAllister to advise them *in advance* that a lab will be missed and see if it is possible to swap or attend a different session.
- 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.

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.
Scheduling of examinations (regular, resit, 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 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.
5. 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.

On Exam Day

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.

1. Examinees must reset the clock on their laptops to the correct local time and time zone (Atlantic Standard Time - AST).
2. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor/ Course director. No student shall be permitted to enter the exam venue after the start password has been given.
3. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
4. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
5. Students will consult the proctors or examination seating list posted outside the examination venue (if available) to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
6. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
7. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
8. *No communication of any kind is permitted between examinees after entering the examination room.*
9. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
10. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
11. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
12. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
13. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
14. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
15. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.

16. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
17. 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

    *No other personal belongings will be permitted.

XX. Copyright policy

Appendices:

Lecture Schedule SAMS 513 Spring 2020 and LLOs

Lecture No Lecturer	Day, Date Time	Lecture content/ aim	Lecture Learning Outcomes
1 HMcA	Wed, 22nd Jan 4.30pm	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	Mon, 27 th Jan 4.30 pm	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	Tue, Jan 28th 1.30 pm	Radiology of the diaphragm and ribs	Acquire the basic concepts of the radiology and disorders of the diaphragm and ribs.
4 HMcA	Wed, Jan 29th 3.30 pm	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	Fri, Jan 31st 2.30 pm	Principles of ultrasound (artefacts and practical issues)	To understand ultrasound generation and its clinical indications, limitations and applications
6	Mon, Feb 3rd	Small animal cardiac radiology and	To be able to recognize the standard types of Ultrasound images of the heart; 2D, M-mode, Doppler, image planes

HMcA	2.30 pm	ultrasonography1: (normal cardiac radiology and echo-cardiography).	from the right side and the correct terminology for their descriptions
7 HMcA	Mon, Feb 3rd 3.30 pm	Small animal cardiac Radiology and ultrasonography 2: (abnormal cardiac radiology and echocardiography of common acquired cardiac diseases)	To recognize and describe the common abnormalities seen on ultrasonography of patients with acquired heart disease.
8 HMcA	Wed, Feb 5th 3.30 pm	Small animal cardiac radiology and ultra-sonography 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	Wed, Feb 5th 4.30 pm	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	Mon, Feb 10th 3.30 pm	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	Tues, Feb 11th 4.30 pm	Small animal abdomen 3: (Abnormal GIT radiology and ultrasonography of the GIT including pancreas)	To be able to recognise common abnormal radiological and ultrasonographic findings of the GIT and pancreas
12 RHAP	Wed, Feb 12th 3.30pm	Small animal abdomen 4: Radiology and ultra-sonography of the kidneys	Recognise normal kidneys in the cat and dog on radiographs and ultrasonograms. Know normal renal anatomy, morphology (shape, size, opacity/ echogenicity) of cats and dogs. Recognise common renal pathologies and their typical radiological and sonographic changes. Apply radiological principles when assessing kidneys.
13 RHAP	Fri, Feb 14th 1.30pm	Small animal abdomen 5: Imaging of the urinary tract: Contrast studies: kidneys, ureters, bladder; Ultrasound of the ureters; normal and abnormal	Understand the indication, technique, interpretation of contrast studies (CS) and their potential risks/ complications; type of contrast medium; phases of CS; recognise normal and abnormal CS, describe and formulate a diagnosis.
14 RHAP	Mon, Feb 24th 1.30pm	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. Assess normal and abnormal pregnancy in cats and dogs.
15 RHAP	Wed, Feb 26th 3.30pm	Small animal skeleton 1: Radiology of bone, bone development, morphology, bone changes, periosteal reactions.	Understand technique and interpretation of radiology of bone, bone structure, morphology, opacity, development, periosteal reactions, loss of bone vs bone production, associated soft tissue changes

16 RHAP	Wed, March 4th 1.30pm	Small Animal skeleton 2: Radiology of Aggressive vs Non-aggressive bone lesions	Understand the radiological patterns of bone destruction and classification of bone lesions into aggressive / non-aggressive lesions, typical behaviour of aggressive/ non-aggressive bone lesions, lytic vs proliferative lesions, patterns of bone destruction,; which type of periosteal reaction goes with which class of bone lesion; progression of bone lesions.
17 RHAP	Thurs, March 5th 1.30pm	Small animal skeleton 3: Radiology of bone: Fractures and fracture healing, normal and ab-normal fracture healing, complications of fracture healing and asynchronous bone growth	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.
Wednesday , March 11th, 2020 1.30 pm **SAMS 513 Midterm Exam,** Venue : **Modica South**			
18 RHAP	Mon, March 16th 1.30pm	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
19 RHAP	Wed, March 18th 1.30pm	Small animal skeleton 4: Developmental skeletal lesions and Disorders of joints / Dysplasia	Understand the radiology of congenital and developmental lesions affecting joints. Be able to recognise and interpret typical radiological changes of specific (common) pathologies and dysplasias affecting joints.
20 RHAP	Fri, March 20th 1.30pm	Small animal skeleton 5: 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 entheseophytes; septic arthritis; osteoarthritis / osteo-arthrosis/ degenerative joint disease; developmental joint disease: OC/ OCD, elbow dysplasia, hip dysplasia; patella luxation, immune mediated joint disease, polyarthropathies.
21 HMcA	Mon, March 23rd 1.30pm	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	Wed, March 25th 1.30pm	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

23 HMcA	Tue, March 31st 4.30pm	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
Friday, April 3rd **SAMS 513 Quiz Spring 2020** 1.30pm Venue: **St John's Hall**			
24 HMcA	Tues, April 7th 4.30 pm	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	Wed, April 8th 1.30 pm	EQ 5: Radiography and Radiology of the equine spine and thorax	Explain how and be able to recognise equine projections and radiological technique with particular consideration of personnel safety of the equine spine and thorax. Be able to identify/ recognise common radiological abnormalities of the equine
26 RHAP	Tues, April 14th 2.30 pm	EQ 6: Equine Musculoskeletal ultrasound (normal equine tendon and common abnormalities of the meta-carpal/ -tarsal and phalangeal regions and the stifle of horses).	Know technique, application and interpretation of ultrasound of the normal metacarpal/-tarsal/ phalangeal region. Recognise normal anatomy and morphology of tendons, ligaments, synovial structures and bone in ultrasound. Identify common abnormalities of tendons, ligaments and synovial structures in the equine patient and recognise the sonographic appearance of acute and chronic lesions thereof.
27 RHAP	Wed, April 15th 2.30 pm	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
28 RHAP	Thurs, April 16th 2.30 pm	Cont. Principles of CT, MRI and Nuclear medicine	As above.
29 RHAP	Mon, April 20th 2.30pm	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.
30 RHAP	Tues, April 21st 2.30pm	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.
31 RHAP	Thurs, April 23rd 2.30pm	Radiology of the small animal vertebral column: Anatomical variants, anomalies, acquired, inflammatory, degenerative, traumatic,	Recognise normal and variant skeletal morphology, anomalies, inflammatory, traumatic, metabolic, degenerative and neoplastic diseases of the vertebral column and the techniques to demonstrate it.

		metabolic and neo-plastic pathologies; IV disc disease	
32 RHAP	Fri, April 24th 2.30pm	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
33 RHAP	Mon, April 27th 2.30pm	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
34 RHAP	Wed, April 29th 1.30pm	Musculoskeletal ultrasound in the dog and cat, Ultrasound of small parts: examples	Understand the technique and clinical application of ultrasound in small animal musculoskeletal pathological conditions and examination of small parts; e.g. the eye
35 RHAP	Thurs, April 30th 1.30pm	Diagnostic imaging of the Skull / Eyes and orbit/ Brain	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, Ocular ultrasound, Retrobulbar disease, CT of the orbit and eyes, Imaging of Hydrocephalus, Examples of: CT of the skull and brain and MRI of the skull and brain
36 RHAP	Mon, May 4th 4.30pm	Principles of Digital Radiography (DR) and Computerised Radiography (CR)	Unterstand the basic principles of how a digital/ computerised image is created and what is different / similar to analog radiography.
37 RHAP	Thurs, May 7th 3.30pm	TBA	
Thursday, May 14th **SAMS 513 Final Exam Spring 2020** 1.30pm Venue: **Modica North**			

Lab Schedule SAMS 513 Spring 2020 and LLOs: Lab Venue: Charter Hall Lab

Note that Lab groups are appended just after the Lab Schedule

DATE	TIME	GROUPS	Lab No; Content	Lab Learning Outcomes	Instructor
Jan 27th	8:30 - 10:20	A1- A6	**Lab 1** **Thorax: Pleura, Mediastinum Diaphragm, Ribs**	Revise normal thoracic radiological anatomy and interpretational pitfalls. Identify and interpret the common radiological conditions of the thoracic cavity of small animals including the pleura and mediastinum	HMcA RHAP
	10:30 - 12:20	A7- B4			
Feb 3rd	8:30 - 10:20	B5- C2			HMcA RHAP
	10:30 - 12:20	C3 – C9			

Feb 10th	8:30 - 10:20	A7- B4	**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.	HMcA
	10:30 - 12:20	A1 – A6			RHAP
Feb 17th	8:30 - 10:20	C3- C9			RHAP
	10:30 - 12. 20	B5- C2			RHAP
Feb 24th	8:30 - 10:20	A1- A6	**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.	RHAP
	10:30 - 12:20	A7- B4			
March 2nd	8:30 - 10:20	B5- C2			RHAP
	10:30 -12:20	C3- C9			
March 16th	8:30 – 10:20	A7- B4	**Lab 4** **Bones** **Aggr vs non-aggr Fractures, Developmental skeletal lesions, Joints**	Identify and interpret the common radiological appearance of develop-mental 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.	HMcA RHAP
	10:30 - 12:20	A1- A6			
March 23rd	8:30 - 10:20	C3- C9			HMcA
	10:30 - 12:20	B5- C2			RHAP
March 30th	8:30 – 10:20	A1- A6	**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 radio-logical conditions of the equine skull. Practice review of case examples with question and answer discussions with instructors	HMcA
	10:30 - 12:20	A7- B4			RHAP
April 6th	8:30 - 10:20	B5- C2			HMcA
	10:30 - 12:20	C3- C9			RHAP
April 27th	8:30 - 10:20	A7- B4	**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
	10:30- 12:20	A1- A6			RHAP
May 4th	8:30 - 10:20	C3- C9			RHAP
	10:30 - 12:20	B5- C2			RHAP

Group #	Name	Group #	Name	Group #	Name
A1	Caresse Rios	**B1**	Morgan Richmond	**C1**	Haley Witt
A1	Ethan Egli	**B1**	Yuna Im	**C1**	Luis Garcia
A1	Kayla Mochizuki	**B1**	Garrett Mock	**C1**	Megan O'Brien
A1	Cammie Cathey	**B1**	Sarah Wentela	**C1**	Nicole Fennig
A2	Alyssa Gerbus	**B2**	Jessica Patterson	**C2**	Leah Levenson
A2	Cassidy Novkov	**B2**	Pegah Sadeghi	**C2**	Gina Giacomelli
A2	Alexia Estrada	**B2**	Rachael Atkinson	**C2**	Victoria Falen
A2	Scarlett Gallagher	**B2**	Maxwell Beecroft	**C2**	Laura Graham
A3	Dominic Mezzanotte	**B3**	Kristina Lonche	**C3**	Mattisen DiRubio
A3	Jennifer Maldonado Rivera	**B3**	Guelmarie Davila	**C3**	Conor Gallagher
A3	Freshteh Davari	**B3**	Sara D'Argenio	**C3**	Cori Zuehlke
A3	Arynn Mundorf	**B3**	Colin Beaton	**C3**	Janeen Danenberg
A4	Lindsay Muhs	**B4**	Rachel Hayon	**C4**	Amanda Getto
A4	Virginia Glazebrook	**B4**	Maria Fuzailov	**C4**	Caroline Earnheart
A4	Ashley McFrederick	**B4**	Rick Mullis	**C4**	Amy Maher
A4	Tara Walcott	**B4**	Emily Johns	**C4**	April Hall
A5	Jessica Pawlowski	**B5**	Megan Leavitt	**C5**	Rebecca Martin
A5	Parvenah Larijani	**B5**	Brittney Forrest	**C5**	Kelly Udelsman
A5	Andrew Thompson	**B5**	Nicole Kizielewicz	**C5**	Jennifer Collins-Hall
A5	Kate Montgomery	**B5**	Logan Stietz	**C5**	Ariel Ferri
A6	Andrea Iorgovan	**B6**	Laura Bylina	**C6**	Audrey Dollinger
A6	Natasha Weeraratne	**B6**	Joseph Incandela	**C6**	Kayla Anderson
A6	Jessica Strums	**B6**	Merecedes Kruse	**C6**	Athanasia Karagiannis
A6	Viktoria Czaran	**B6**	Rachel Johnson	**C6**	Rachel Manto
A7	Sasha Dubrovsky	**B7**	Ethan Porter	**C7**	Eve Indiviglio
A7	Lillian Gilbert	**B7**	Lauren Gaddy	**C7**	Mirna Metry
A7	Ariana Gonzalez	**B7**	Christian Small	**C7**	Orit Farahan
A7	Nathan Strauss	**B7**	Elizabeth Tyler	**C7**	Monique Pitre
A8	Travis Jackson	**B8**	Chelsea Nahous	**C8**	William Reeves
A8	Alexandra Baker	**B8**	Adam Cabrera	**C8**	Chloe Colon
A8	Lauren McCormick	**B8**	Cassaundra Martel	**C8**	Cristina Mastromonaco
A8	Jennifer Kirk	**B8**	Kelly Ejnes	**C8**	Heather Brown
A9	Tokaj Kozak			**C9**	Tristan Hackney
A9	Kristen Walter			**C9**	Hayleigh Moore
A9	Alexander Tsompanas			**C9**	Lisa Gale
A9	Lois Noel			**C9**	Justine Mckinnon

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

***INTRODUCTION TO SURGICAL SKILLS SYLLABUS* (1 credit)**

SAMS514 TERM 4

SPRING 2020

I. Course Faculty and Staff Information

Course Director:

Tara Paterson, DVM, MSc.
Associate Professor
Email: tpaterson@sgu.edu
Office: Cassia building, 2nd floor
Office hours: By appointment only

Instructors:

Emily Turitto, DVM
Assistant Professor
Email: eturitt1@sgu.edu
Office: SVM Trailor

Keith Kalasi, DVM
Assistant Professor
Email: kkalasi@sgu.edu
Office:

Note: There will also be a few visiting professors assisting in the course throughout the term.

VSL Technical Staff:

Elizabeth Peach, RVT epeach@sgu.edu
Jakobus Louw, VSL Technician jlouw@sgu.edu
Quacy Matthew, VSL Technician QMatthew@sgu.edu
Lydia Williams, VSL Technician LWillia8@sgu.edu
Jude Modeste, VSL Technician jmodeste@sgu.edu

II. Course location

All laboratories will take place in the Veterinary Surgery Lab or Anesthesia Prep room located on the bottom floor of Sis Hall. Lectures will be held in KB Taylor Blue.

III. Prerequisite and/or co-requisite courses

None.

IV. Required resources (texts, journal articles, course notes, laptop specs, etc.)

- Veterinary Surgery: Small Animal (2nd ed)(Johnston & Tobias, 2018)
- SAMS514 Suture Pattern Guide (Sakai)
- Lecture notes (Sakai)
- SAMS514 demonstration videos (Sakai)

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

- Veterinary Surgical Preparation and Protocol (Pasquini, 2011)
- Fundamentals of Small Animal Surgery (Mann, Constantinescu & Yoon, 2011)

VI. Special accommodation

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

VII. Other requirements

Required laboratory materials: suture pad, 6" small intestine simulation model & basic surgical instruments (needle holder, Brown-Adson thumb forceps, Doyen suture scissors +/- three hemostatic forceps); suture material for at-home practice would be helpful

Appropriate attire for the surgery lab: scrubs, closed toe shoes

VIII. Course rationale (catalogue course description)

This course is an introductory surgery course and is designed to lay the foundation for advanced 3rd year courses in surgery including both Small Animal Surgery (SAMS518) & Large Animal Surgery (LAMS516) as well as clinical surgical courses including Junior Surgery and Anesthesia lab (SAMS527) and Small Animal Clinical Services (SAMS528).

IX. Course-level outcomes

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

1. Demonstrate proficiency in a variety of basic surgical skills including knot tying, suture patterns, ligation, instrument handling.

2. Describe the appropriate procedures for surgical preparation of both the surgeon & patient.

3. Discuss the principles of bandaging taught in the course and apply this knowledge in the selection and application of commonly used bandages & slings.

4. Explain the importance of asepsis and describe the various aspects of aseptic technique used to minimize the risk of surgical infection.

5. Describe the various classifications of suture material, differentiate between types of suture material and apply this knowledge to the selection of suture material for a given surgical procedure.

6. Describe the stages of wound healing & principles of wound management and apply these to the management of wounds.

7. Explain topics related to basic surgical principles including: hemostasis.

X. Lesson-level outcomes

See Appendix 1. These should be used by the student to help guide them in preparation for examination.

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

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 two practical examinations, one group surgical case report and one final written examination.

Practical examinations:
Students will be required to demonstrate proficiency in all surgical skills as outlined in the syllabus. Student clinical assessment will be in the form of two practical examinations. Performance will be graded based on a scale of 0-10 with scores ≥7 being satisfactory. Any performance graded *below 7* is deemed unsatisfactory. To ensure adequate proficiency, the student will be asked to meet with a course instructor to repeat the demonstration of the surgical skill 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 covered in both lecture & lab.

Surgery report assignment:
Students will be asked to work together in groups of three to complete an assignment based on a fictitious surgical procedure of their choice. An electronic copy of the assignment will be posted on Sakai. Assignments will be due towards the end of the term, but can be submitted at any time during the course of the term.

Bonus Exam question assignment:
Each student will have the opportunity to submit one multiple-choice style examination question during the term. Students will be assigned to a particular lecture topic upon which this question should be based. These questions must be submitted before the final exam at the end of the term. 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:

Practical exams (30% each)	60%
Final written examination	30%
Surgical case assignment	10%
	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 that was deemed unsatisfactory in a practical examination may receive an Incomplete grade for the course until a decision has been taken regarding their eligibility for advancement. *According to university regulations, students with an Incomplete grade on their transcript will not be eligible to enroll for the following semester.*

XIV. Recommended study strategies

Surgical skills: Routine practice of the surgical skills taught in lab should be performed outside of class hours. This will prevent the last-minute panic to learn skills before the practical exams. In addition, this will aid the student in identifying what suture patterns or skills that they are having difficulty with. These difficulties can then be addressed during the regularly scheduled lab hours. Any student requiring additional assistance can make such arrangements via email with the course director (tpaterson@sgu.edu). If a mutually convenient time to meet cannot be established, then a request will be extended by the course director to one of the other course instructors. Tuesday afternoons (after lectures) are often an ideal time to meet. When seeking additional assistance for practical skills, *please ensure that you have practiced at home 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 Lecture/Laboratory Level Outcomes (Appendix 3) to guide in their preparations for the final written examination.

XV. Instructor's expectations of the student

1. The student is expected to prepare for each laboratory session by reviewing all pertinent instructional videos *prior to* each laboratory session. If no videos are available, the student should review the step-by-step instructions in the SAMS514 Suture Pattern guide.

2. The student is expected to practice the surgical skills on a regular basis outside of laboratory hours.
3. The student is expected to arrive to their scheduled laboratory session on time and remain in lab for the full 90 minutes.
4. The student is asked to assist in the clean-up of the laboratory facility at the end of their lab session. This includes:

   Clean-up: At the end of each laboratory session, please ensure that the workstation is clean. Please dispose of all materials as described below. The second group of the afternoon is asked to please clean table tops with the disinfectants provided in the Surgical suite and wipe dry. If the overhead surgical lights were used, please ensure that they are turned off.
   Waste disposal: Please ensure that materials used during each lab session are disposed of appropriately. Surgical needles and scalpel blades must be disposed in the appropriate red sharps containers located at each end of the Surgical suite. Non-biohazard material (paper, suture material *without* needle, suture packaging) should be disposed of in the grey waste bin. Exam or surgical gloves should also be disposed of in the appropriate waste bins.

XVI. Professionalism statement

Professional behavior in the classroom and laboratory facilities is expected at all times. **The use of cellular phones is strictly prohibited during class time – particularly during laboratory sessions**. Exceptions will be made on a case by case basis under extenuating circumstances. Please ensure that they are switched off or in silent mode during lectures/labs. The use of laptops, tablets, etc. in the classroom and laboratory for purposes *other than* learning is not acceptable. Ensure that all social media websites are logged off during class time.

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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 attendance policy: Attendance to lectures is expected. There is often discussion in lecture pertaining to the laboratory session for that week. Therefore, if the student fails to attend lecture, it is expected that they will review the entire lecture via Panopto *prior to* the follow day's laboratory session in order to be fully prepared for the lab. Should the online recording of the lecture fail, it is the student's responsibility to obtain information from the missed lecture from a colleague.

Laboratory session attendance policy: Attendance to labs are mandatory and will be taken during each laboratory session. As per the 2016-2017 Student Manual, laboratory sessions are considered required educational activities (along with quizzes & exams). The Student Manual (ref page 101-102) clearly states that students are allowed only two medical excuses and one non-medical excuse per year. This pertains to all required educational activities. Students are expected to complete the appropriate online procedures for these absences. For further details and procedures, please refer to the Student Manual. Students failing to attend a laboratory session without completing the appropriate procedures will be contacted. In addition, the SVM Assistant Dean of Students will be notified and the appropriate actions taken.

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. 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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. 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.

5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.

30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to
37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
39. Examinees found violating any of the Examination Policies and Procedures including
40. attempting to disable or tamper with Examplify's security features will be subject to
41. academic disciplinary action.
42. 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

    *No other personal belongings will be permitted.

XX. Copyright policy (if applicable):

APPENDICES

Appendix 1: Lesson and Laboratory Level Outcomes

Lecture/lab Learning Outcome	Course learning outcome Number(s)
LECTURE: Sterilization & disinfection	
Explain the difference between sterilization, disinfection & antisepsis	**4**
List the common forms of sterilization used in veterinary medicine and their applications/limitations: steam, ethylene oxide, ionizing radiation, gas plasma, paracetic acid, cold chemical sterilization	**4**
Discuss cold sterilization and list the appropriate chemical agents used for this method of sterilization	**4**
Describe the different types of sterilization indicators and be familiar with their limitations	**4**
Explain the difference between antiseptic & disinfectant	**2, 4**
Cite the spectrum of activity for the following antiseptics: povidone iodine, chlorhexidine, hydrogen peroxide, alcohol-based combination antiseptic preparations	**2, 4**
LECTURE: Principles of asepsis	
Define asepsis	**4**
Describe the various procedures used in aseptic technique performed by the surgical team	**2, 4**
List the potential sources of microbes implicated in surgical site infection (SSI)	**4**
Describe the ways to decrease a surgical patient risk for SSI	**2, 4**
Cite Halsted's surgical principles	**4**
Describe the steps taken by the surgical team when preparing a patient for surgery	**2, 4**
Describe the procedures for surgical site preparation	**2, 4**
Know the principles of surgical drape application	**2, 4**
List the surgical apparel worn by the surgical team and describe their function	**2, 4**
Discuss the appropriate conduct of personnel in the operating room	**2, 4**
Describe the process of surgeon hand scrubbing and list the appropriate antiseptics for this purpose	**2, 4**
LECTURE: Surgical instrumentation & techniques	
Identify, name & describe the function of the basic surgical instruments	**1**
Demonstrate the proper handling of these instruments	**1**
List the parts of a ringed instrument	**1**
Describe the different methods of grasping needle holders, scalpel handles and scissors	**1**
Describe the different methods of making incisions and their applications	**1**
Explain the difference between blunt and sharp dissection	**1**

LECTURE: Suture material	
Describe the properties of each of the following types of suture material: Surgical gut, polyglactin 910 (Vicryl – plain, Rapide, Plus), polydiaxanone (PDS), polyglecaprone 25 (Monocryl), silk, nylon, polyester, polypropylene, stainless steel, barbed suture	**5**
Classify the suture materials above according to: absorption (absorbable versus non-absorbable), strand type (mono- versus multifilament), origin of fibers	**5**
Discuss the inherent characteristics of suture material: size, flexibility, memory, surface friction, knot security, tensile strength & tissue reactivity	**5**
Describe the systems of suture material sizing	**5**
Discuss the purpose of suture material coatings and cite the benefits of triclosan	**5**
Explain the difference in the process of absorption between natural and synthetic suture materials	**5**
Discuss the factors to consider when selecting a suture material for a given procedure	**5**
List the potential complications of suturing	**5**
Discuss the biomaterial alternatives to suture & list their applications: tissue adhesive, surgical staples & hemoclips	**5**
LECTURE: Surgical needles	
Identify the parts of a surgical needle	**5**
Discuss the factors to be considered when selecting a surgical needle	**5**
List the various types of surgical needle point and pair these with the appropriate tissue	**5**
LECTURE: Surgical bleeding & principles of hemostasis	
Differentiate between surgical bleeding and hemorrhage	**7**
Recognize/describe the different types of surgical bleeding (arterial, venous, capillary)	**7**
List the different methods of hemostasis	**7**
Explain the difference between electrocautery & electrocoagulation	**7**
Cite potential causes of excessive surgical bleeding	**7**
LECTURE: Principles of bandaging	
List the functions of bandages	**3**
Cite the three layers of a bandage and their function(s)	**3**
Differentiate between adherent & non-adherent contact layers	**3**
Discuss the function of adherent dressing and list types of adherent dressing	**3**
Discuss the basic principles of bandage application	**3**
Describe the process of applying the following types of orthopedic bandages and list their function(s): Robert Jones, modified Robert Jones (+/- reinforcement), Spica splint, cast	**3**
Describe the process of applying the following types of orthopedic slings and list their function(s): Velpeau, Ehmer	**3**
List the potential complications of a bandage	**3**

LECTURE: Pathophysiology of wound healing	
Differentiate between open & closed wound and list examples of each	**6**
Discuss the degrees of contamination and how it relates to the relative risk of surgical infection; give examples of each	**6**
Explain the degrees of contamination as it relates to traumatic wounds	**6**
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	**6**
LECTURE: Wound management	
Discuss the principles of managing a traumatic wound	**6**
Cite the methods used for wound cleansing, lavage, irrigation and wound debridement; select the most appropriate option based on the nature of the wound	**6**
Cite the applications of various topical medications commonly used in wound management [including spectrum of activity (where applicable) and effect on wound healing]	**6**
List the types of wound healing and their associated types of surgical closure (where applicable)	**6**
Discuss important aspects of managing degloving wounds	**6**
List the benefits of honey/sugar in wound healing	**6**
LECTURE: Drains	
List the functions of drains	**6**
Cite the indications for the use of drains	**6**
Describe the characteristics upon which drains can be classified	**6**
Compare the Penrose & Jackson-Pratt drains	**6**
Discuss the key principles of drain placement	**6**
Explain vacuum-assisted wound management	**6**
LAB: Knots & hand ties	
Perform a square knot & surgeons knot using the 2-hand tie technique	**1**
Perform a square knot & surgeons knot using the 1-hand tie technique	**1**
LAB: Skin suture patterns I (Interrupted patterns)	
Perform a square knot & surgeons knot using an instrument tie	**1**
Demonstrate proficiency in the following interrupted suture patterns: simple interrupted, cruciate, vertical mattress, interrupted horizontal mattress, Surgeon's stitch	**1**
LAB: Skin suture patterns II (Intradermal pattern)	
Demonstrate proficiency in performing the intradermal skin pattern using either a buried knot or the Aberdeen knot as the final knot	**1**

LAB: Skin suture patterns III (Continuous patterns)	
Demonstrate proficiency in the following continuous suture patterns: Simple continuous, Ford interlocking, Continuous horizontal mattress	**1**
LAB: Surgeon preparation & surgical draping	
Demonstrate the following processes involved with surgeon surgical preparation: aseptic hand scrub, application of surgeon's gown, open & closed gloving techniques	**2**
Demonstrate the application of surgical quarter drapes as a solo surgeon	**1, 4**
LAB: Bandaging	
List the types of bandaging material and their uses	**3**
Describe the process of applying the following types of orthopedic bandages/slings and list their function(s): Robert Jones, modified Robert Jones (+/- reinforcement), Spica splint, cast	**3**
LAB: Hollow organ suture patterns	
Demonstrate proficiency in the following hollow organ suture patterns: appositional (simple interrupted & simple continuous), Lembert (interrupted & continuous), Cushing & Connell	**1**
Discuss the applications of the Purse string suture pattern	**1**
Demonstrate proficiency in performing a Finger trap	**1**
LAB: Ligatures & 3-clamp technique	
Demonstrate proficiency in the following ligatures: Circumferential, transfixing, modified Miller's knot	**1**
Demonstrate proficiency in the 3-clamp technique for pedicle ligation	**1**

Appendix 2: Alignment of Course Level Outcomes with Program Level Outcomes

	COURSE LEARNING OUTCOME	SVM COMPETENCY
1	The student is expected to demonstrate proficiency in a variety of basic surgical skills including knot tying, suture patterns, ligation, instrument handling	C4
2	The student is expected to be able to describe the appropriate procedures for surgical preparation of both the surgeon & patient	C4, C8
3	The student is expected to be able to discuss the principles of bandaging taught in the course and apply this knowledge in the selection and application of commonly used bandages & slings	A1, C4
4	The student is expected to be able to explain the importance of asepsis and describe the various aspects of aseptic technique used to minimize the risk of surgical infection	C4
5	The student is expected to be able to describe the various classifications of suture material, differentiate between types of suture material and apply this knowledge to the selection of suture material for a given surgical procedure	C4
6	The student is expected to be able to describe the stages of wound healing & principles of wound management and apply these to the management of wounds	A1, C2, C4
7	The student is expected to discuss topics related to basic surgical principles including: hemostasis	A1, C4

A. Core Medical Knowledge

B. Core Professional Attributes

C. Core Clinical Competencies (Skills)

Appendix 3: Course Schedule

	Week	Date	Group	Lecture topic / Lab skills
MODULE #1	WEEK #1	Jan 21		LECTURE: Intro to Surgical knots, Sterilization & disinfection
		Jan 22	A, B	LAB: Hand ties
	WEEK #2	Jan 28		LECTURE: Intro to Suturing Skin, Principles of Asepsis
		Jan 29	B, A	LAB: Skin suture patterns I (Interrupted patterns)
	WEEK #3	Feb 4		LECTURE: Pathophysiology of wound healing
		Feb 5	A, B	LAB: Skin suture patterns II (Intradermal)
	WEEK #4	Feb 11		HOMEWORK: Surgical instruments
		Feb 12	B, A	LAB: Skin suture patterns III (Continuous patterns)
	WEEK #5	Feb 18		HOMEWORK: Suture material & surgical needles
		Feb 19		No Lab
	WEEK #6	Feb 25		LECTURE: Review of instrument & suture homework
		Feb 26	A, B	LAB: Module #1 review (optional)
	WEEK #7	Mar 3	A	**PRACTICAL EXAM #1**
		Mar 4	B	
	WEEK #8			MID-TERM EXAM WEEK
MODULE #2	WEEK #9	Mar 17		LECTURE: Intro to Ligatures, Wound management
		Mar 18	B, A	LAB: Ligatures & 3-clamp technique
	WEEK #10	Mar 24	**3:30pm**	LECTURE: Intro to hollow organ suture patterns
		Mar 25	A, B	LAB: Hollow organ suture patterns
	WEEK #11	Mar 31		LECTURE: Drains, Hemostasis
		April 1	B, A	LAB: Surgical draping, gowning & gloving
	WEEK #12	April 7		LECTURE: Principles of bandaging
		April 8	A, B	LAB: Bandaging
	WEEK #13	April 14		LECTURE: Review of course material (optional)
		April 15	B, A	LAB: Module #2 review (optional)
	WEEK #14	April 21	B	**PRACTICAL EXAM #2**
		April 22	A	
	WEEK #15			**SURGICAL CASE ASSIGNMENTS DUE**
	WEEK #16	**May 6**	**8:30**	**FINAL WRITTEN EXAM**

ST GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE AND SURGERY DEPARTMENT

PHYSICAL DIAGNOSIS I SYLLABUS (1 credit)

SAMS 515 TERM 2

Spring 2019

I. Course Faculty and Staff Information

Course Director
Francesca Ivaldi, MSc DVM, Associate Professor
FIvaldi@sgu.edu
Small Animal Clinic
Office hours by appointment

Other faculty

Anne Corrigan MS DVM MS DACVIM (SAIM), Professor
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Wayne Sylvester DVM MSc, Assistant Professor
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II. Course location

David Brown Hall, Andrew Bedford Hall,VSL Prep area, SIM lab.

III. Prerequisite and/or co-requisite courses

a. 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. Clinical skills text

VI. Other requirements

a. Scrubs
b. Closed toe shoes
c. White coat
d. Stethoscope
e. Pen
f. Watch or digital time piece
g. SIM lab:
    i. Pencil (no pens allowed)
    ii. Cell/smart phones are NOT allowed

VII. Course rationale (catalogue course description)

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, communication skills, clinical reasoning, and literature review. The laboratory exercises are tailored to provide the veterinary student with the opportunity to practice medical exams that are commonly performed in the everyday clinical setting. Use of the SGU Simulation laboratory allows students a more in-depth experience with cardiac arrhythmias, murmurs, and abnormal respiratory noises as they relate to commonly observed clinical case presentations. 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 4^{th} year clinical rotations abroad and for eventual careers in veterinary practice.

VIII. Course goals (Instructor's point of view)

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 communication skills

IX. Course-level objectives

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

1. Demonstrate general physical examination, including proper restraint techniques for small animals, using the dog as the model, and properly document findings
2. Identify and institute appropriate communication skills with clients and colleagues
3. Apply clinical reasoning to basic veterinary cases
4. Critically evaluate literature and correlate it to topics presented in the course
5. Identify appropriate injection site protocol and technique

X. Detailed course content

Detailed course content can be found under Resources in Sakai.

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

Course Learning Outcome	SVM PLO / **Category**	RCVS Competency / **Category**
Demonstrate general physical examination, including proper restraint techniques for small animals, using the dog as the model, and properly document findings	**A.1.** Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals /**Core Medical Knowledge** A.2. Analyze homeostasis and disturbances thereof /**Core Medical Knowledge** A.7. Evaluate and analyze normal versus abnormal animal	**17.** Handle and restrain animal patients safely and humanely, and instruct others in helping the veterinary surgeon perform these techniques. / **General Professional skills and attributes expected of newly qualified veterinary surgeons** 18. Perform a complete clinical examination / **Practical and clinical competences expected of new veterinary surgeons**

	behavior /**Core Medical Knowledge**	6. Prepare accurate clinical and client records, and case reports when necessary, in a form satisfactory to colleagues and understandable by the public / **Practical and clinical competencies expected of new veterinary surgeons**
Identify and institute appropriate communication skills with clients and colleagues	B.1. Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities / **Core Professional Attributes** B.2. Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy / **Core Professional Attributes** **C.8.** Demonstrate and model effective client communication and ethical conduct./ **Core Clinical Competencies (Skills)**	5. Communicate effectively with clients, the public, professional colleagues and responsible authorities, using language appropriate to the audience concerned. / **General Professional skills and attributes expected of newly qualified veterinary surgeons**
Apply clinical reasoning to basic veterinary cases	A.6. Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine /**Core Medical Knowledge**	38. Understanding of, and competence in, the logical approaches to both scientific and clinical reasoning, the distinction between the two, and the strengths and limitations of each. **/ Underpinning knowledge and understanding**
Critically evaluate literature and correlate it to topics presented in the course	A.11. Understand and apply basic principles of research, and recognize the contribution of research to all aspects of veterinary medicine / **Core Medical Knowledge** C.9. Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine / **Core Clinical Competencies (Skills)**	9. Be able to review and evaluate literature and presentations critically **/ General Professional skills and attributes expected of newly qualified veterinary surgeons**

Identify appropriate injection site protocol and technique	**A.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 / **Core Medical Knowledge**	**4.** Promote, monitor and maintain health and safety in the veterinary setting; demonstrate knowledge of systems of quality assurance; apply principles of risk management to their practice **/ General Professional skills and attributes expected of newly qualified veterinary surgeons**

XII. Course Schedule

Please find attached as two tables at the end of the syllabus, one with lecture and lab schedule and one with student group assignments

XIII. Grading and assessment policy, and grading rubrics

The grade for this one-credit course will be as follows:

Homework assignment 10 points
OSCE examination 30 points (requirement for advancement)
Lab quizzes 40 points

The OSCE will consist of stations covering: Handling/restraint, Ophthalmology, Dermatology, Musculoskeletal, Gastrointestinal/Urogenital, Neurology, Cardiology/Respiratory, Injection guidelines/skills. You will have four (4) minutes per station: three (3) minutes to perform the skills requested, and one (1) minute to transfer between stations and read the requested task. 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 laboratory sessions, as these are the same skills that you will be asked to perform during the OSCE assessment. If an unsatisfactory grade is achieved during the OSCE, the student will be required to repeat the OSCE before being permitted to advance.

Lab quizzes: After each lecture, you will take an online quiz consisting of 5 multiple choice questions. You will be given 8 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.

Missed OSCE: A make-up exam will be given ONLY when a VALID excuse is presented, either from the health clinic or through other approved channels. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take this twelve-minute OSCE, please visit the SGU Student Health Services PRIOR to the time of the test. Excuses that are issued after the OSCE has been administered 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.

There will be one homework assignment at the end of the semester. You will have two weeks to complete it, and it MUST be turned in by the due date. No late assignments will be accepted. The due date will be posted, along with the assignment submission instructions, on SAKAI.

Assignment 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, so get it in early; give yourself time to work around any technological issues, health issues, family visits or other unforeseen issues which could cause complications and delays.
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. E-value use for outcomes assessment evaluation

E-value will not be utilized this term

XV. 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. Watch the provided videos and review the lecture materials. It is not advised to seek external videos or study materials.

XVI. Instructor's expectations of the student

The student is expected to be familiar with the required material before class, including reading literature and watching videos posted on SAKAI relevant to the body system being discussed. The student is expected to participate actively in the laboratory component 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.

XVII. 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.

It is allowed to have cell phones in the VSL for review of videos on SAKAI, but for no other reason. Ringers must be silenced.

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

Attendance to lectures and labs is expected. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. Greater than 2 unexcused absences may result in a 0.5 point decrease in your overall grade point for the course. 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 / year ONLY, and then you need a medical leave of absence.

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

Please refer to sections XIII and XVIII above

XX. ExamSoft policy

Students will not be participating in ExamSoft experience this term.

XXI. Copyright policy

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

SAMS 515 Physical Diagnosis I Spring 2020					
Date	Time	Type	Location	Faculty	Group Order
Tues 21-Jan-20	10:30-11:20	**Lecture** Course Intro, PE Handling and Restraint	KB Taylor Hall Blue	Ivaldi	
Thurs 23-Jan-20	1:30-4:20	**Lab** Course Intro, PE	VSL Prep	Ivaldi Corrigan Moreton	A,B,C
Friday 24-Jan-20	1:30-2:20 2:30-4:00	**Lecture** Injection guidelines Clinical Reasoning	KB Taylor Hall Blue	Miccio Corrigan	
Tues 28-Jan-20	9:30-10:20	**Lecture** Musculoskeletal	David Brown Hall	Guerrero	
Thurs 30-Jan-20	1:30-4:20	**Lab** Musculoskeletal	VSL Prep	Ivaldi Moreton	B, C, A
Tues 04-Feb-20	11:30-12:20	**Lecture** Ophthalmology	David Brown Hall	Ivaldi	
Thurs 06-Feb-20	1:30-4:20	**Lab** Ophthalmology	VSL Prep	Ivaldi Moreton	C, A, B
Tues 11-Feb-20	10:30-11:20	**Lecture** Cardiovascular / Respiratory	David Brown Hall	Corrigan	
Thurs 13-Feb-20	1:30-4:20	**Lab** Cardiovascular / Respiratory	SIM (HF)	Corrigan Ivaldi Moreton	A,B,C
Tues 18-Feb-20	8:30-9:20	**Lecture** Neurology	David Brown Hall	Narak	
Thurs 20-Feb-20	1:30-4:20	**Lab** Neurology	VSL Prep	Narak Corrigan Moreton	B,C,A
Tues 25-Feb-20	11:30-12:20	**Lecture** Abdominal / UG	David Brown Hall	Peters	
Thurs 27-Feb-20	1:30-4:20	**Lab** Abd/UG	VSL SIM (LF)	Peters / Corrigan Ivaldi / Moreton	C,A,B
Tues 03-Mar-20	8:30-9:20	**Lecture** Derm	David Brown Hall	Paterson	
Thurs 05-Mar-20	1:30-4:20	**Lab** Derm	VSL Prep	Paterson Ivaldi Moreton	A, B, C
Fri 13-Mar-20	8:30-5:30	FINAL OSCE EXAMINATION	SAC	SAMS 515 TEAM	

SAMS 515 Spring 2020 Student Group Assignments

Group A	Group B	Group C
Alexander, Peterlyn	Abraham, Celin	Barrick, Aubree-Anna
Allegretti, Delaina	Abrahamson, Meghan	Bowling, Jessica
Allender, Aaron	Aziz, Tania	Brandt, Lindsey
Barry, Alexis	Bockhorn, Kate	Bray, Brooke
Barsoum, Ireny	Butler, Allyson	Brewster, Ashlyn
Brown, Natasha	Christen, Madeleine	Bryan, Rachel
Collette, Zachary	Churchill, Chelsea	Cerrato, Vanessa
Cunningham, Lauren	Collins, Karli	Chang, Alex
Daroch, Ivan	Comeau, Karine	Cruz, Peter
Duncan, Kayla	Donegan, Patrick	Desai, Sonali
Eckert, Anastascia	Fedele, Kaila	Drouin, Matthew
Epes, Elizabeth	Ferguson, Alanna	Eaton, Chloe
Freibergs, Margaret	Gilman, Abigail	Garcia Rodriguez, Miguel Angel
Gallagher, Dane	Gomez, Amy	George, Tony
Gussman, Emily	Gray, Rachel	Hothi, Parveen
Guzman Sanchez, Marielis	Jacobs, Brianna	Hubick, Shelby
Jafferally, Sahara	Jones, Ana-Simone	Kinter, Taylor
James, Emily	Krolczyk, Victoria	Kvernmo, Melissa
Jno Baptiste, Jolyn	Laird, Rachael	Liu, Jenny
Johnston, Mackenzie	Manning, Margaret	Madara, Devon
Knapp, Kayli	Mari, Francesca	Maldonado-Ross, Johana
Leinberger, Priscilla	McCarthy, Jonathan	McCartin, Jenna
Maglaris, Zoe	Merante, Anna Marie	Mezei, Reece
Manly, Courtney	Moise, Jacob	Moncrief, Michele
Murray, Brittany	Nicholes, Sheriden	Morales, Shelby
Nunnelley, Jacqueline	Olson, Abigail	Mordukhaev, Michelle
Oberoi, Vibhuti	Peak, Mallory	Phillips, Ashley
Patrick, Randa	Pierce, Lauren	Redmond, Erica
Pinney, Kyle	Ramsey, Thomas	Rudolf, Erica
Rhoden, Raheed	Raycroft, Glenna	Rutherford, Alyssa
Rogers, Alexandra	Riddick, Brittany	Salehi, Persia
Rolo, Hannah	Saravia, Diana	Scheppke, Brianna
Shenouda, Mary	Shevlin, Lindsay	Schleinkofer, Emily
Skaggs, Brittany	Silberman, Claire	Shen-Kinny, Lance
Solomon, Alexis	Simmons, Jasmine	Vaught, Sydney
Sullivan, Aubrey	Smith, Zachary	Whitney, Madison
Via, Amanda	Uvaydov, Rachel	Wood, Jaymi
Villafranca, Kassandra	White, Yvonne	
Yates-Lavery, Ida		

SVM Course Code: SAMS 518
Course Director: Dr R. Bruhl Day
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	***Updated Course Format:**	Weekly Learning Schedule:	Assessment Schedule:
	Week of transition, travel and online training	March 16 - 22	N/A
Hernias Lectures: 1. Abdominal hernias 2. Diaphragmatic hernia 3. Perineal hernia	**Hernias** Lectures: 1. Lecture 1: Hernias 2. Lecture 2: Diaphragmatic Hernia 3. Lecture 3: Perineal hernia **Lectures via Panopto** **Lecture PowerPoint pdfs** to go with lectures supplied on MyCourses/ Resources	**March 23 - 28** 1. Lecture 1: Review Lecture pdf Listen to Panopto 2. Lecture 2 Review Lecture pdf Listen to Panopto 3. Lecture 3 Review Lecture pdf Listen to Panopto Review course material in preparation for **Quiz A**	N/A
Surgery of the Head Lectures: 4. Upper respiratory tract 5. Ear surgery 6. Salivary gland surgery	**Surgery of the Head** Lectures: 1. Lecture 4: Upper respiratory tract 2. Lecture 5: Ear surgery 3. Lecture 6: Salivary glands **Lectures via Panopto** **Lecture PowerPoint pdfs** to go with lectures supplied on MyCourses/ Resources	**March 30 - April 4** 1. Lecture 4: Review Lecture pdf Listen to Panopto 2. Lecture 5: Review Lecture pdf Listen to Panopto 3. Lecture 6: Review Lecture pdf Listen to Panopto Review course material in preparation for **Quiz B**	**Review lectures 1 to 3, then proceed to do Quiz # A** ***(due April 3, 10 pts)***
Other abdominal organs Lectures: 7. Spleen 8. Pancreas 9. Liver 10. Portosystemic shunts **Quiz #2 April 14th**	**Other abdominal organs** Lectures: 1. Lecture 7: Spleen and Pancreas 2. Lecture 8: Liver 3. Lecture 9: Portosystemic shunts **Lectures via Panopto** **Lecture PowerPoint pdfs** supplied on MyCourses/ Resources	**April 6 - 11** 1. Lecture 7: Review Lecture pdf Listen to Panopto 2. Lecture 8: Review Lecture pdf Listen to Panopto 3. Lecture 9: Review Lecture pdf Listen to Panopto Review course material in preparation for **Quiz C**	**Review lectures 4 to 6, then proceed to do Quiz # B** ***(due April 10, 10 pts)***

Dentistry Lectures: 11. Nomenclature, Anatomy, Periodontal Disease 12. COHAT/ATP, Radiography, Radiographic Interpretation 13 COHAT/ATP, Scale, Polish, Closed and Open Root Planning 14 Extraction Indications 15 Extraction Indications and Methods 16 Nerve Blocks, Prevention and maintenance, Oral Dental Conditions Case examples.	**Dentistry** Lectures via Panopto: 1. Lecture 10: Nomenclature, Anatomy, Periodontal Disease 2. Lecture 11: COHAT/ATP, Radiography, Radiographic Interpretation 3. Lecture 12: COHAT/ATP, Scale, Polish, Closed and Open Root Planning 4. Lecture 13: Extraction Indications and Methods 5. Lecture 14: Nerve Blocks, Prevention and maintenance, Oral Dental Conditions, Case examples **Lectures via Panopto** **Lecture PowerPoint pdfs** supplied on MyCourses/ Resources	**April 13 - 18** 1. Lecture 10: Review Lecture pdf Listen to Panopto 2. Lecture 11 Review Lecture pdf Listen to Panopto 3. Lecture 12: Review Lecture pdf Listen to Panopto 4. Lecture 13: Review Lecture pdf Listen to Panopto 5. Lecture 14: Review lecture pdf Listen to Panopto Review course material in preparation for **Quiz D**	**Review lectures 7 to 9, then proceed to do Quiz # C** **(*due April 17, 10 pts*)**
Lecture: Orthopedics Lectures: 1. Fracture biomechanics and classification- Bone healing- Bone infection 2. Fractures - Conservative treatment. 3. Fractures- Pins and wires 4. Fractures -External Skeletal Fixation 5. Fractures- Plates and screws 6. Fractures- Decision making 7. Fractures- Complications 8. Fractures in growing animals 9. Articular fractures	**Lecture: Orthopedics** 1. Lecture 15: Fracture biomechanics and classification- Bone healing- bone infection 2. Lecture 16: Fractures - Conservative treatment. 3. Lecture 17: Fractures- Pins and wires, External Skeletal Fixation 4. Lecture 18: Fractures- Plates and screws 5. Lecture 19: Fractures- Decision making and Complications 6. Lecture 20: Fractures in growing animals and Articular fractures **Lectures via Panopto** **Lecture PowerPoint pdfs** in MyCourses/Resources	**April 20 - 25** 1. Lecture 15: Fracture biomechanics and classification- Bone healing- bone infection 2. Lecture 16: Fractures - Conservative treatment. 3. Lecture 17: Fractures- Pins and wires, External Skeletal Fixation 4. Lecture 18: Fractures- Plates and screws 5. Lecture 19: Fractures- Decision making and Complications 6. Lecture 20: Fractures in growing animals and Articular fractures Review course material in preparation for **Quiz E**	**Review lectures 10 to 14, then proceed to do Quiz # D** **(*due April 24, 10 pts*)**

Orthopedics Orthopedic conditions in Small animals Lectures: 10. Bone diseases 11. OCD 12. Conditions of the Elbow 13. Conditions of the Pelvis 14. Conditions of the Hip 15. Conditions of the Stifle 16. Muscular and tendon disorders 17. Mandibular and maxillary fractures	**Orthopedics** Orthopedic conditions in Small animals 1. Lecture 21: Bone diseases 2. Lecture 22: OCD and Conditions of the Elbow 3. Lecture 23: Conditions of the Pelvis and the Hip 4. Lecture 24: Conditions of the Stifle 5. Lecture 25: Mandibular and maxillary fractures **Lectures via Panopto** Lectures as **PowerPoint pdfs** in MyCourses/Resources	**April 27 - May 2** 1. Lecture 21: Review Lecture pdf Listen to Panopto 2. Lecture 22: Review Lecture pdf Listen to Panopto 3. Lecture 23: Review Lecture pdf Listen to Panopto 4. Lecture 24: Review Lecture pdf Listen to Panopto 5. Lecture 25: Review Lecture pdf Listen to Panopto Review course material in preparation for **Quiz F**	**Review lectures 15 to 19, then proceed to do Quiz # E** ***(due May 1, 15 pts)***
Orthopedics Lectures: 1. Spinal surgery	**Orthopedics** 1. Lecture 26: Muscular and tendon disorders 2. Lecture 27: Spinal surgery **Lectures via Panopto** Lectures as **PowerPoint pdfs** in MyCourses/Resources	**May 4 - 9** 1. Lecture 26: Spinal surgery Review Lecture pdf Listen to Panopto 2. Lecture 27: Muscular and tendon disorders Review Lecture pdf Listen to Panopto Review course material in preparation for **Quiz G**	**Review lectures 20 to 24, then proceed to do Quiz # F** ***(due May 8, 10 pts)***
FINAL Exam May 8	**Duration of all the lectures will be shortened due to time availability to facilitate the students learning and accurate assessment**	**May 10 - 15** Prepare course material for **Quiz G**	**Review lectures 25 to 27, then proceed to do Quiz # G** ***(due May 15, 5 pts)***
Total lectures: 34	Total lectures: 27		Total points: 70

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 140 *Total points breakdown:* Midterm 50 points Quiz #1 20 Quiz #2 20 Final 50	Total points: 140 *Total points breakdown:* Midterm 50 points (already taken) Quiz #1 20 (already taken) Quiz A 10 Quiz B 10 Quiz C 10 Quiz D 10 Quiz E 15 Quiz F 10 Quiz G 5 **NOTE: In order not to create a misunderstanding the new quizzes have letters instead of numbers.**

In the original course the final exam was non-cumulative. In the online course version, the studied material covered in the assigned time frames is utilized for the individual quizzes.

Learning outcomes: please list any CLO or LLO's which were omitted below:
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.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Small Animal Medicine and Surgery

***Small Animal Surgery SYLLABUS* (5 credits)**

SAMS 518 TERM 5

SPRING 2020

I. Course Faculty and Staff Information

Course Director:
Rodolfo BRUHL-DAY, DVM (Hons), ChD SAS, DCLOVE, Ed.D, CPMV Recognized Specialist SAS (ST), Professor
Email Address : rbruhl-day@sgu.edu
Office Location: Cassia Bldg., top floor.

Office Hours: Office hours will be arranged to fit the class schedule.
Additional office hours can be made by appointment.
Even though I may not respond immediately, I will get back to you asap. Please contact me again if I do not respond within 2 days.

Other SGU course faculty members**:**
Tomas GUERRERO, PD, Dr. Med. Vet., DECVS (Orthopedic)
Emily TURITTO, DVM
Francesca IVALDI, DVM, MSc, (Dentistry)

Tara PATERSON, DVM, MSc.

VP's:
Dr. P. Bedford, DVM, MRCVS, DECVO (Ophthalmology)
Mr. Jim Merrit (Dental Radiology)
Course professors should be contacted by email, or call ext. 3109 (Mrs. Emmanuel, SAMS Executive Secretary).

Staff :
Mrs. F. Emmanuel, Administrative Assistant, call ext. 3109
Ms. R. Thornhill, Secretary, call ext. 3474

II. Course location

All lectures will be held in Ray & Jan Sis Lecture Theater 1.
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, and will not be made available in hard copy. 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; 2nd edition, 2017.
Pasquini et al. Veterinary Surgical Preparation and protocol, SUDZ Editor, 2011
Ophthalmology
Gelatt et al. Veterinary Ophthalmology. Lippincott 4th edition, 2007

Severin, G. Veterinary Ophthalmology Notes. Paperback, 1995.

Dentistry

Handout lectures by Dr. Ivaldi

V. Recommended resources:

Fossum et al. Small Animal Surgery 4th edition, 2013

Fossum et al. Small Animal Surgery 5th edition, 2019

VI. Special accommodation

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

VII. Other requirements

N/A

VIII. Course rationale

This course is a keystone in the veterinary curriculum. It was designed to use a team teaching approach to tie together the basic science courses in the first 4 terms and prepare the students for the third year small animal medicine and surgery courses.
The course will present common complaints, history, clinical signs, PE findings and specific diagnostic testing with the goal of students being able to learn about problem lists, make differential diagnoses, and introduce veterinary methods for case work up.

Students will be exposed to the most common surgical procedures to treat different organ systems' surgical diseases. Use of state of the art technology will be included among the different surgical procedures.

Course Goals:

- To prepare the students for the fourth year veterinary curriculum
- To introduce surgical diseases in small animals.
- To introduce the student into the most commonly applied surgical techniques, their monitoring and postop evaluation.
- To help the students develop clinical problem solving skills, medical record abilities, professional development and experience with case work up
- To learn how to select appropriate diagnostic tests

- To reinforce continuing education and research appreciation

IX. Course-level outcomes

See Appendix II and Course Schedule

X. Lesson-level outcomes

See Appendix II and Course Schedule

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See appendix II and Course Schedule

XII. Course Schedule

See Appendix 1

XIII. Grading and assessment policy, and grading rubrics

- There will be **2 examinations** (midterm exam and the final exam) worth **50 points each** and **2 quizzes** worth **20 points each.** The exam material will come from lectures and in class discussions.
- **Missed examinations**: A make-up exam will be given ONLY when documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic PRIOR to the time of the test**. Excuses that are issued after the examination has been given will not be accepted**. Do not expect to be excused for weddings or birthdays. Funerals of very close family members are adequate justification, but little else will be accepted. Excuses to attend special meetings will be considered upon the student's performance.
- Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams will take place using Exam Soft. Eventually a make-up quiz can be given in paper format.
- 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 other exam policies are followed according to the SGU Examination Policy and the Student handbook.
  SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desk top. Only the ID and water in a clear container are permitted.

  Types of assessment (include both formative and summative 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.

XIV. Recommended study strategies

-Prior to class, or after class, reading the complementary chapters in the recommended textbooks
-Class attendance and active participation
-Office hours, consultation and active participation
-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 and differential diagnosis list, plus a diagnostic and surgical plan prior to reviewing the lecturer's slides with that information, is encouraged

XV. Instructor's expectations of the student

Students are expected to read textbook chapters prior to lecture, and to come to class prepared for discussion and case studies.

XVI. Professionalism statement

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

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

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

Turn cell phones off during lectures
Turn computers off if used for different purposes other than following the lectures (i.e. e-bay, Facebook, blogs et al).

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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 attendance policy:
Attendance to lectures is mandatory. Since handouts will be provided in advance, new information, further explanations and/or updating will take place in a continuous manner. No excuses for failure or misunderstanding questions in an exam will be accepted from those students not attending lectures.
Consumption of food and drinks other than water is not allowed during lectures, laboratories and exams (except for drinks in SGU approved containers). The use of mobile phones, computers and electronic devices is not allowed.
Personal video and audio recording of lectures are not allowed. Exceptions to these rules have to be discussed with the Course Director
Even though attendance to lectures is expected; the course notes will be posted on Sakai, and also available on Panopto. The exam material will come from lectures and in class discussions.
Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will 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.
Excuses for attending special meetings will be considered upon the student's performance and pending DOS review/authorization.

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

A make-up exam will be given only when a documented excuse from the University Health Clinic, the SGU General/Medical Excuse Submission web site, or direct approval from the SVM Dean of Students will be accepted. Excuses that are issued **after** the examination has begun will not be accepted.

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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.

4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

*No other personal belongings will be permitted.

XX. Copyright policy (if applicable):

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Appendices:

Course Schedule

Appendix 1. Detailed Course Content:

Please be aware that this syllabus is just a simple guide. Some lectures may take more and others less than stated, depending on the students' interest, participation and/or involvement for debate.

Lecturer **Date, Time**	**Topic**	**Aim**	**Objective**
Dr. Bruhl Day Jan 20 2:30	Surgical Approaches to the Abdomen and Incision Closure	Using the laparotomy, demonstrate the correct approach and closure of tissue planes	1. Know the different surgical approaches 2. Recognize the tissue planes involved in gaining access to the abdomen. 3. Know alternative closure methods
Dr. Bruhl-Day Jan 21 2:30	Exploratory Celiotomy & Biopsy Techniques	Discuss the various approaches, techniques and complications of exploratory laparotomy and biopsy of abdominal organs	Know the approaches, techniques and complications for exploratory celiotomy and abdominal organ biopsy.

Dr. Bruhl Day Jan 22 2:30	Castration Dog	To define rationale, techniques and complications of castration. Cryptorchidism.	Understand the indications and different techniques for castration in the dog
Dr. Bruhl Day Jan 23 2:30	Castration Cat	To define rationale, techniques and complications of castration.	Understand the indications and different techniques for castration in the cat
Dr. Bruhl-Day Jan 27 2:30	Prostate surgery	Discuss the diagnosis and cause of prostatic diseases	Be able to diagnose and treat prostatic diseases applying different surgical techniques.
Dr. Bruhl-Day Jan 28 2:30	Gastric Surgery I	Discuss gastric surgery.	Understand the indications and techniques for gastrotomy.
Dr. Bruhl-Day Jan 29 2:30	Gastric Surgery II	Discuss the diagnosis and management of pyloric outflow obstruction.	Recognize clinical aspects of pyloric outflow obstruction, know correction techniques that are available
Dr. Bruhl-Day Jan 30 2:30	GDV I	Discuss the pathogenesis, pathophysiology, diagnosis of gastric dilatation/volvulus (GDV)	Understand the following aspects of GDV: pathogenesis, pathophysiology, and stabilization of the patient.
Dr. Bruhl-Day Feb 3 1:30	GDV II	Discuss the surgical management of gastric dilatation/volvulus (GDV)	Understand the surgical techniques to prevent a recurrence of GDV.
Dr. Bruhl-Day Feb 4 2:30	Intestinal Surgery Small Bowel I	Discuss small bowel disease, and surgical therapy	Know the clinical features of small bowel disease, diagnostic and management techniques
Dr. Bruhl-Day Feb 5 2:30	Intestinal Surgery Small Bowel II	Discuss the seriousness of small bowel obstruction, the pathogenesis and therapy	Know the clinical features of small bowel obstruction, diagnostic and surgical techniques to correct this condition.
Feb 6 1:30	**QUIZ # 1**	**20 questions**	

Dr. Bruhl-Day Feb 10 2:30	Intestinal Surgery Large Bowel I	Discuss the seriousness of large bowel obstruction, the pathogenesis and therapy	Know the clinical features of large bowel obstruction, diagnostic and management techniques to correct this condition.
Dr. Bruhl-Day Feb 11 2:30	Intestinal Surgery Large Bowel II	Discuss megacolon, the pathogenesis and therapy	Megacolon in cats
Dr. Bruhl-Day Feb 12 2:30	Esophageal Surgery	Discuss the logical investigation and management of esophageal disease.	Know the management and complications of the conditions, especially esophageal foreign body.
Dr. Bruhl-Day Feb 13 1:30	Urinary tract surgery I	Discuss the identification and cause of urinary tract diseases.	1. Be able to diagnose conditions affecting the kidney. 2. Be able to recognise ectopic ureter and techniques to correct this problem.
Dr. Bruhl-Day Feb 17 1:30	Urinary tract surgery II	Introduce the tools for investigation of urinary disease using common renal and bladder conditions as examples	Recognize the typical features of common bladder conditions. Know which of these can be corrected with surgery and the available surgical techniques.
Dr. Bedford Feb 13 4:30	Introduction and Clinical Examination of the Eye	Review the ocular anatomy and describe the examination techniques.	1. Relate ocular structure to its function. 2. Conduct a clinical examination of the eye.
Dr. Bedford Feb 14 4:30	Eyelids I	Describe the common lesion of the eyelids.	Discuss eyelid pathologies and their treatment
Dr. Bruhl-Day Feb 18 2:30	Urinary tract surgery III	Discuss the identification and cause of urinary incontinence. Ureteral diseases	Recognize sphincter mechanism incompetence and its medical or surgical treatments. Ectopic ureters
Dr. Bedford Feb 17 4:30	Eyelids II Nictitating membrane	As Eyelids I, plus common lesions of the nictitating membrane.	Discuss third eyelid pathologies and their treatment
Dr. Bruhl-Day Feb 19	Urinary tract surgery IV	Discuss the identification and cause of urethral diseases	1. Recognize the typical features of common urethral conditions. 2. Know which of these can

2:30			be corrected by surgery and the techniques available for surgical correction.
Dr. Bedford Feb 18 3:30	Ophthalmology	Adnexal eye diseases, third eyelid	Be familiar with the differential diagnosis and management of eyelid disease.
Dr. Bedford Feb 18 4:30	Conjunctiva	Review the disease problems of the conjunctiva as part of ocular surface disease.	Recognize and treat disease of the conjunctiva.
Dr. Bruhl-Day Feb 20 2:30	Spay Dog and Cat I	Discuss the relevant aspects of female genital tract, techniques and complications of spay	Be familiar with the surgical conditions of the ovaries and uterus.
Dr. Bedford Feb 19 3:30	Lachrymal system	Review the disease problems of the lachrymal system	Recognize and treat disease of the lachrymal system
Dr. Bedford Feb 19 4:30	Uveal Tract	Review the clinical appearance of uveal tract lesions in the domestic species.	Be able to recognize lesions of the uveal tract and effectively treat uveitis.
Dr. Bruhl-Day Feb 24 2:30	Spay Dog and Cat II	Discuss the relevant aspects of female genital tract, techniques and complications of spay. Pyometra and uterine torsion	Be familiar with the surgical conditions of the ovaries and uterus. Pyometra and uterine torsion
Dr. Bedford Feb 20 3:30	Lens	Discuss the more common conditions involving the lens	Be able to recognize lens diseases to discuss clinical and surgical management techniques.
Dr. Bedford Feb 20 4:30	Retina	Discuss the most common conditions involving the retina	Be able to recognize some retinal diseases to discuss clinical and surgical management techniques.
Dr. Bruhl-Day Feb 25 2:30	Surgical Approaches to the Thorax and Incision Closure	Using the thoracotomy, demonstrate the correct approach and closure of tissue planes. Sternotomy	1. Know the different surgical approaches. 2. Recognize the tissue planes involved in gaining access to the thorax. 3. Know different closure methods.

Dr. Bruhl-Day Feb 26 2:30	Thoracic surgery	Discuss the pathophysiology of pneumothorax, thoracic trauma and drainage	Understand the various surgical and drainage techniques applied to the thorax.
Dr. Bruhl-Day Feb 27 1:30	Thoracic surgery: PDA	Discuss the identification and diagnosis of this cardiac/vascular condition	Recognize the typical features of this common vascular disease. Surgical treatment options
Dr. Bruhl-Day Feb 28 2:30	Thoracic surgery: PRAA, vascular ring anomalies	Discuss the identification, cause and diagnosis of vascular ring anomalies	Recognize the typical features of these common cardiac conditions. Surgical treatment options
Dr. Bruhl-Day Mar 2 2:30	Thoracic surgery, other conditions.	Discuss the identification and cause of respiratory/cardiac related conditions	Recognize the typical features of other cardiac and thoracic conditions. Surgical treatment options
Dr. Bruhl-Day Mar 3 2:30	Upper Respiratory Tract	Discuss the conditions that cause upper airway obstruction. Brachycephalic Airway Syndrome	Understand the pathophysiological consequences of upper airway obstruction and know the surgical options for correction of the various conditions involved.
Dr. Bruhl-Day Mar 4 2:30	Lower Respiratory Tract	Discuss the causes, recognition and management of obstruction to the trachea and bronchi.	1. Be able to recognise 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.
Dr. Bruhl-Day Mar 5 2:30	Ear Surgery I	Define the approach to diagnosis and management of otitis externa and otitis media. Discuss problems involving surgery of the pinna.	1. Recognize otitis externa. 2. Understand lateral ear canal resection. 3. Understand the diseases and correction of problems of the pinna
Dr. Bruhl-Day Mar 16 2:30	Ear Surgery II	Define the approach to diagnosis and management of irreversible otitis externa and otitis media.\	1. Recognize irreversible otitis externa. 2. Understand the rational of total ear canal ablation and lateral bulla osteotomy. 3. Understand the complications that may arise.
Mar 10 1:30	**MIDTERM**	**50 QUESTIONS**	

Dr. Bruhl-Day Mar 17 2:30	Hernias: Abdominal hernias	Define the difference between a hernia and a rupture. Discuss the different types and the various techniques used to manage them.	Be able to recognize the most common hernia/ruptures. Be able to discuss the diverse techniques that can be used in the management of the different hernias
Dr. Bruhl-Day Mar 18 2:30	Hernias: Diaphragmatic hernia	Discuss the different types and the various techniques used to manage them.	Be able to discuss the diverse techniques that can be used in the management of this type of hernia
Dr. Ivaldi Mar 17 4:30	Dental anatomy, pathology, and record notation in the dog	Discuss normal and abnormal clinical appearance of dog oral cavity plus charting	Know normal anatomical dental structures, names and numbers of teeth, become familiar with nomenclature for oral pathology in the dog.
Dr. Bruhl-Day Mar 19 2:30	Hernias: Perineal hernia	Discuss the different types and the various techniques used to manage them.	Be able to discuss the diverse techniques that can be used in the management of this particular hernia
Dr. Bruhl-Day Mar 20 2:30	Surgery of the Head and Nose.	Discuss aspects of surgery of the head. Discuss conditions causing nasal discharge, their differential diagnosis and surgical management. Rhinotomy	Be familiar with the surgical conditions of the head and be able to properly manage them. Know common causes of nasal discharge and diagnostic techniques. Rhinotomy approaches.
Dr. Ivaldi Mar 19 4:30	Dental anatomy, pathology , and record notation in the cat	Discuss normal and abnormal clinical appearance of cats oral cavity plus charting	Know normal anatomical dental structures, names and numbers of teeth, become familiar with nomenclature for oral pathology in the cat.
Dr. Bruhl-Day Mar 23 2:30	Surgery of the Neck I	Discuss the relevant aspects of surgery of the larynx	Be familiar with the surgical conditions of the neck and larynx to be able to properly manage them.
Dr. Ivaldi Mar 23 4:30	Dental concept driven therapy	Discuss the management of periodontal, endodontic, orthodontic and oral neoplastic disease in dogs and cats.	Understand dental treatment concepts and how they relate to the different case presentations.
Dr. Bruhl-Day Mar 24 2:30	Surgery of the Neck II	Discuss the relevant aspects of surgery of the neck. Salivary glands diseases	Be familiar with the salivary gland surgery.

Dr. Ivaldi Mar 24 4:30	Oral Radiology	Discuss technique of exposing, developing, and interpreting intraoral radiographs	Understand the indications, techniques, and interpretation for intra oral radiology in companion animals
Dr. Bruhl-Day Mar 25 2:30	External Genitalia	Discuss some abnormalities of male and female external genitalia and mammary glands.	Know the treatment of certain abnormalities of the external genitalia and mammary neoplasia.
Dr. Ivaldi Mar 25 4:30	Creating the five star dental practice	Discuss the different levels of companion animal dental care including the philosophy of oral assessment, treatment, and prevention.	Know how to recognize and practice poor, adequate, and superlative dental care and patient management.
Dr. Ivaldi Mar 26 4:30	Dental concept driven therapy	Case management of periodontal, endodontic, orthodontic and oral neoplastic disease in dogs and cats.	Understand dental treatment concepts and how they relate to the different case presentations.
Dr. Turitto Apr 6 2:30	Spleen	Discuss the diverse surgical conditions that affect the spleen.	Be able to diagnose conditions involving the spleen and know the management techniques used to correct these problems.
Dr. Paterson Apr 7 3:30	Pancreas	Discuss the diverse surgical conditions that affect the spleen.	Be able to diagnose conditions involving the pancreas and know the techniques used to correct these problems.
Dr. Turitto Apr 8 2:30	Liver	Discuss the diverse conditions that affect the liver Discuss the diverse conditions that affect the extra hepatic biliary system	Be able to diagnose and correct conditions affecting the liver. Be able to diagnose and correct conditions affecting the extra hepatic biliary system.
Dr. Paterson Apr 9 4:30	Portosystemic Shunts	Discuss the diverse presentations of PSS, its pathogenesis and management	Know the management and surgical techniques used to correct PSS.
Apr 14 1:30	**QUIZ # 2**	**20 questions**	
Dr. Guerrero Apr 16	Fractures biomechanics and classification	Discuss the classification and the forces acting in fractures	Understand how fractures occur, which forces need to be neutralized to get successfully

3:30			treatment, and be able to correctly describe a fracture.
Dr. Guerrero Apr 16 4:30	Bone healing	Discuss the healing of fractures under differe conditions	Understand the many factors which influence the healing process
Dr. Guerrero Apr 17 3:30	Fractures - Conservative treatment. Fractures- Pins and wires	Discuss which fractures can be treated conservatively. Discuss the use of intramedullary pins, cross pins and cerclage wires	Understand the principles of conservative management of fractures Know indications, advantages disadvantages and techniques for pins and wires to treat bone fractures
Dr. Guerrero Apr 17 4:30	Fractures - External Skeletal Fixators (ESFD's) Fractures - Plates & Screws	Discuss the use of external fixators in fracture repair. Discuss the use of bone plates & screws	Know the indications, advantages, disadvantages and techniques of using external fixators in fracture repair. Know the indications, and techniques of using screws and plates to treat bone fractures. Be familiar with different types of plates and screws
Dr. Guerrero Apr 20 3:30	Fractures - Decision making Complications	Discuss the how to take the correct decision in fracture treatment. Discuss the problems associated with fracture repair	Understand how to choose the correct method of treatment. 1. Know the common causes of complications of fracture repair. 2. Know how to avoid and treat complications of fracture repair
Dr. Guerrero Apr 20 4:30	Bone Disease - Growth abnormalities. OCD	Discuss bone structure and the different pathologies affecting bone structure	Understand the general principles of bone pathology and be able to discuss common examples.
Dr. Guerrero Apr 21 3:30	Fractures in growing animals	Discuss the different types of fractures, and how to treat them	Understand the classification of growth plates fractures, and its principles of treatment
Dr. Guerrero Apr 21 4:30	Articular surgery	Discuss the more common conditions involving the joints	Be able to recognize some articular diseases and to discuss clinical and surgical management

			techniques.
Dr. Guerrero Apr 22 3:30	Conditions of the Elbow	Discuss the main orthopaedic conditions involving the elbow joint.	Know the common diseases affecting the elbow joint and be able to recognise and treat them.
Dr. Guerrero Apr 22 4:30	Conditions of the Pelvis	Discuss the different fractures and luxations affecting the pelvis	Know which conditions affect the pelvis and how to treat these conditions
Dr. Guerrero Apr 23 3:30	Conditions of the Hip I	Discuss the common and important conditions involving the hip joint, particularly hip dysplasia. Include clinical presentation and management.	1. Be able to prepare a differential diagnostic of conditions involving the hip. 2. Discuss the surgical approaches and surgical treatment for the listed conditions.
Dr. Guerrero Apr 23 4:30	Conditions of the Hip II	Discuss the common and important conditions involving the hip joint, particularly hip dysplasia. Include clinical presentation and management.	1. Be able to prepare a differential diagnostic of conditions involving the hip. 2. Discuss the surgical approaches and surgical treatment for the listed conditions.
Dr. Guerrero Apr 24 3:30	Conditions of the Stifle I	Discuss the more important conditions involving the stifle joint; particularly rupture of the cranial cruciate ligament and patellar luxation	Be able to recognize cruciate ligament and patellar luxation conditions and the surgical techniques.
Dr. Guerrero Apr 24 4:30	Conditions of the Stifle II	Discuss the more important conditions involving the stifle joint; particularly rupture of the cranial cruciate ligament and patellar luxation	Be able to recognize cruciate ligament and patellar luxation conditions and the surgical techniques.
Dr. Guerrero Apr 27 3:30	Soft Tissue Orthopedic Disease	Describe the more common tendon and muscle disorders	Be able to recognize the common tendon and muscle disorders such as ruptures and contractures.
Dr. Guerrero Apr 27 4:30	Mandibular and maxillary fractures	Discuss the main orthopedic conditions involving the mandible and the maxilla	Be able to recognize mandibular and maxillary conditions and their management techniques.
Dr. Guerrero Apr 28	Spinal surgery. Osteomyelitis	Discuss the more common conditions involving the spine and peripheral nervous	Be able to recognize some neurological diseases and to discuss clinical and surgical management

3:30		system.	techniques.	
Dr. Guerrero Apr 28 4:30	Review session			
May 8 1:30	**FINAL**	**50 Questions**		

Examination Blue Print

A total of **140 points** will be awarded.

Professor	6 Feb **Quiz #1**	10 Mar **Mid Term**	14 Apr **Quiz #2**	8 May **Final**
Brühl-Day	20	40	8	
Bedford		10		
Ivaldi			6	
Guerrero				50
Turitto			3	
Paterson			3	
# Questions	20	50	20	50

Appendix II:

Course-level objectives/Learning Outcomes

Upon successful completion of this course (SAMS 518) 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 small animal species

2. Use substantial clinical data to create differential diagnosis list for surgical conditions in major organ systems in small animals

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

4. Process pertinent clinical data to select appropriate surgical procedures and their approaches, including referral.

5. Propose an appropriate surgical procedures and determine the prognosis for diseases for specific organ systems, and consider antimicrobial resistance.

6. Analyze clinical data to design and perform appropriate surgical therapy plans for small animals, including the principles of wound healing

7. Apply knowledge of suture materials, techniques and surgical anatomy to select appropriate surgical procedures and accurate use of suture patterns

8. Understand and properly apply Halsted principles related to gentle tissue handling

9. Recognize surgical emergency presentations for all major organ systems and propose an appropriate treatment plan in small animals

10. Formulate appropriate client communication regarding history, diagnosis, treatment and prognosis.

Course Learning Outcome	SVM PLO / **Category**	AVMA
1. Recognize common surgical diseases in small animals.	A1, A2, A3, A4, A6, A7, C1, C4, C5, C6	a, b, d, c, h

2. Identify and evaluate surgical techniques used in small animal surgery, their monitoring and postoperative evaluation.	A1, A4, A6, A7, C1, C3, C4, C5, C6,	a, b, c, h
3. Develop cognitive skills in clinical problem solving, medical record keeping, and case work up in small animal surgical conditions	A1, A7, B1, B2, B3, B5, B8, C1, C2, C3, C4, C4, C5, C6, C7, C8,	a, h, e, f, g, c, d
4. Plan and understand appropriate diagnostic tests and surgical procedures for small animals	A3, A4, A6, A7, B6, B8 C1, C2, C3, C4, C5, C6, C7	b, d, c, h, g, e, f, h
5. Learn how to use appropriate surgical instruments and techniques.	A1, A5, B1, B3,	a, c, e, f

Course: Small Animal Surgery (SAMS 518)	**Level**:
	I (introduce)
	R (reinforce)
	P (proficiency)
Course Learning outcomes	**RCVS D1C number and level** (e.g. 1[P])
1. Recognize and diagnose common surgical diseases in Small Animals	5 (R) 6 (R) 8 (R) 18 (R) 42 (R)
2. Identify and evaluate surgical techniques used in Small Animal Surgery, their monitoring and postoperative assessment	7 (R) 10 (R) 21 (R) 28 (R) 33 (R) 34 (R)

3. Develop cognitive skills in clinical/surgical problem solving, medical records keeping and case work-up in small animal surgical conditions	2 (R) 6 (R) 7 (R) 10 (R) 12 (R) 13 (R) 14 (R) 15 (R) 16 (R) 18 (R) 18 (R) 23 (R) 24 (R) 38 (R) 42 (R) 45 (R) 48 (R) 49 (R)
4. Understand and formulate the use of ancillary diagnostic tests, and plan relevant surgical procedures for small animals	2 (R) 6 (R) 7 (R) 10 (R) 12 (R) 13 (R) 14 (R) 15 (R) 16 (R) 18 (R) 19 (I-R) 21 (R) 24 (R) 28 (R) 30 (R) 34 (R) 38 (R) 42 (R)

	45 (R) 48 (R)
5. Learn how to use appropriate surgical instruments and correctly apply operating techniques	8 (R) 12 (R) 14 (R) 15 (R) 19 (I-R) 30 (R) 31 (R) 32 (R) 33 (R) 42 (R) 45 (R)

Lecture /lab name and number	**Lecture/lab 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 correction 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 techniques to prevent the recurrence of GDV.	1, 2, 3, 4, 5
7. Intestinal surgery. Small bowel.	1. Understand the clinical features of small bowel disease, diagnostic and management techniques. **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	**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	**1.** Know the management and complications of the conditions, especially esophageal foreign bodies.	
10. Surgery of the Urinary tract	**1.** Be able to diagnose conditions affecting the kidney. **2.** Be able to recognize ectopic ureter and techniques to correct this problem. **3.** Recognize the typical features of common bladder conditions. Know which of these can be corrected with surgery and the available surgical techniques. **4.** Recognize sphincter mechanism incompetence and its medical or surgical treatments. **5.** Recognize the typical features of common urethral conditions. **6.** Know which of these pathologies can be corrected by surgery and the techniques available for surgical correction.	1, 2, 3, 4, 5
11. Spay, dog and cat	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
13. Surgical Approaches to the Thorax and Incision Closure. Thoracic surgery, PDA, Vascular ring anomalies (PRAA), other conditions.	**1.** Know the different surgical approaches to the thorax. **2.** Recognize the tissue planes involved in gaining access to the thoracic cavity. **3.** Know different closure methods.	1, 2, 3, 4, 5

	4. Understand the various surgical and drainage techniques applied to the thorax. **5.** Recognize the typical features of these common vascular diseases. Surgical treatment options **6.** Recognize the typical features of these common cardiac conditions. Surgical treatment options **7.** Recognize the typical features of other cardiac and thoracic conditions. Surgical treatment options	
14. Upper Respiratory Tract. Brachycephalic Airway Syndrome (BOAS)	1. Understand the pathophysiological consequences of upper airway obstruction 2. Know the surgical options for correction of the various conditions involved.	1, 2, 3, 4, 5
15. Lower Respiratory Tract	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	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	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	1. Know the common abnormalities of the external genitalia, mammary tumors, and their treatment	1, 2, 3, 4
19. Hernias: Abdominal, diaphragmatic and perineal.	**1.** Be able to recognize the most common hernia/ruptures. **2.** Be able to discuss the diverse techniques that can be used in the management of the different abdominal hernias **3.** Be able to discuss the diverse surgical techniques that can be used in the management of diaphragmatic hernia.	1, 2, 3, 4

	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	**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. Neck surgery.	**1.** Be familiar with the surgical conditions of the neck to be able to properly manage them. **2.** Laryngeal surgery	1, 2, 3,4
22. Surgery of the spleen	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	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	1. Be able to diagnose and correct conditions affecting the liver. 2. Be able to diagnose and correct conditions affecting the extra hepatic biliary system.	1, 2, 3, 4
25. Portosystemic Shunts	1. Know the management and surgical techniques used to correct Portosystemic Shunts.	1, 2, 3, 4, 5
26. Fractures, biomechanics and classification	1. Understand how fractures occur, which forces need to be neutralized to get a successfully treatment. **2.** Be able to correctly describe a fracture	
27. Bone healing	1. Understand the many factors that influence the bone healing process.	
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.	
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	

30. Osteomyelitis.	1. Be able to recognize and treat bone infection.	
31. Fractures: Decision making. Complications	1. Understand how to choose the correct method of treatment. 2. Know the common causes of complications of fracture repair. 3. Know how to avoid and treat complications of fracture repair	
32. Fractures in growing animals	1. Understand the classification of growth plate fractures, and its principles of treatment	
33. Articular diseases	1. Recognize articular disease 2. Discuss clinical and surgical management	
34. Bone diseases	1. Understand the general principles of bone pathology 2. Be able to discuss common examples.	
35. Growth abnormalities	1. Growth abnormalities. OCD	
36. Conditions of the elbow	1. Know the common diseases affecting the elbow joint 2. Be able to recognize and treat them.	
37. Conditions of the stifle	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.	
38. Conditions of the Hip.	1. Be able to prepare a differential diagnostic of conditions involving the hip. 2. Discuss the surgical approaches and surgical treatment for the listed conditions.	
39. Soft tissue orthopedic diseases	1. Be able to recognize the common tendon and muscle disorders such as ruptures and contractures	
40. Mandibular and maxillary fractures.	1. Be able to recognize mandibular and maxillary conditions 2. Know their management techniques.	
41. Spinal surgery	1. Be able to recognize some neurological diseases 2. Know the different clinical and surgical management techniques.	
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 dental practice	1. Know how to recognize and practice poor, adequate, and superlative dental care and patient management.	1, 2, 3, 4, 5
47. Ophthalmology examination	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	1. Know about ocular treatments and diagnostic aids.	1, 4
45. Eyelid surgery	1. Recognize the most common eyelid pathologies 2. Know how to surgically treat them	1, 2, 3, 5
46. Third eyelid and conjunctiva	1. Recognize the most common third eyelid pathologies	1, 2, 3, 5
47. Orbit and globe. Lachrymal system	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	1. Recognize the most common corneal pathologies 2. Know how to surgically treat them	1, 2, 3, 4, 5
49. Lens and vitreous	1. Recognize the most common lens and vitreous pathologies. 2. Learn how to treat cataracts	1, 2, 3, 4, 5
50. Retina	1. Recognize the most common lens and vitreous pathologies.	1, 3, 4
51. Glaucoma	1. Recognize the different presentations for glaucoma 2. Know surgical and medical treatments for the disease.	1, 3, 4, 5
52. Neuro Ophthalmology	1. Understand vision and the visual pathways.	1, 3

SVM Course Code: SAMS 520
Course Director: Dr. Flavia Restitutti, DVM, PhD
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs (Numbers refer to the original lecture order):	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Perioperative management 21. CPR 22. Blood gas analysis and acid-base physiology 23. Perioperative fluidtherapy I 24. Perioperative fluidtherapy II/Thermoregulation	Perioperative management Lectures via Panopto: 21. CPR 22. Perioperative Fluidtherapy I 23. Perioperative fluidtherapy II and Thermoregulation	March 23-27	Open book quizzes on SAKAI (Assessment I) Dates: Open date: March 27 Due date: Apr 12th Points: 12 points
Pain 21. Pain Physiology 22. Pain Assessment 23. Pain Treatment: Pharmacological approach	Pain 24. Pain Physiology 25. Pain Assessment 26. Pain Treatment: Pharmacological approach	March 30-Apr 3	Open book quizzes on SAKAI (Assessment II) Dates: Open date: Apr 3 Due date: Apr 19 Points: 12 points
Small animal anesthesia Lectures: 28. Small Animal Anesthesia I 29. Small Animal Anesthesia II 30. Small Animal Anesthesia III 31. Small Animal Anesthesia VI 32. Small Animal Anesthesia V	Small Aninal Anesthesia Lectures via Panopto: 27. Small Animal Anesthesia I 28. Small Animal Anesthesia II 29. Small Animal Anesthesia III 30. Small Animal Anesthesia VI 31. Small Animal Anesthesia V	Apr 6- Apr 10	Open book quizzes on SAKAI (Assessment III) Open date: Apr 10 Due Date: Apr 26 Total points: 19 points
Exotics anesthesia 33. Anesthesia in Rabbits, Guinea Pigs and Small Rodents 34. Avian and Reptile Anesthesia	32. Anesthesia in Rabbits, Guinea Pigs and Small Rodents 33. Avian and Reptile Anesthesia	Apr 13-Apr 17	Open book quizzes and/or assignments on SAKAI (Assessment IV) Open date: Apr 17 Due Date : May 3rd Points: 8 points

Anesthesia in Horses and food production animals Lectures: 35. Equine Anesthesia I 36. Equine Anesthesia II 37. Anesthesia in Ruminants and Camelids 38. Swine Anesthesia 39. Local Anesthesia Techniques in Large Animals	Anesthesia in Horses and food production animals Lectures via Panopto: 34. Equine Anesthesia I 35. Equine Anesthesia II 36. Anesthesia in Ruminants and Camelids 37. Swine Anesthesia 38. Local Anesthesia Techniques in Large Animals	Apr 20-Apr 24	Open book quizzes and/or assignments on SAKAI (Assessment V) Open date: Apr 24 Due Date: May 10 Total points: 19 points
40. Euthanasia	39. Euthanasia	Apr 27	Open date: Apr 27 Due date: May 10
Total lectures: 20	Total lectures (Panopto): 19		
Previous Labs	Updated format		
1. DL 3 – Monitoring 2. DL 4 – Case simulation	1. DL 3 – Monitoring (2. DL 4 – Case simulation (synchronous session via Zoom)		DL3 – Monitoring: Handouts with exercises Total points: 4 Open date: March 27 Due Date: May 10

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = 140 *Total points breakdown:* Quiz I: 20 points (15%) Midterm: 42 points (30%) Practical Assessment: 14 points (10%) Final exam: 64 points (45%)	Total points = 140 *Total points breakdown:* Quiz I (already completed): 20 points (15% of final grade) Midterm (already completed): 42 points (30% of final grade) Assessment I: 12 points (aprox. 8.5% of final grade) Assessment II: 12 points (8.5% of final grade) Assessment III: 19 points (aprox. 14% of final grade) Assessment IV: 8 points (aprox. 6% of final grade) Assessment V: 19 points (aprox 14% of final grade) Assessment VI: 4 points (aprox 3% of final grade) Lab Handout: 4 points (aprox 3% of final grade) Participation in the forum discussion in at least 1 forum threads (i.e. 1 lecture or group of lectures) is required. **Failing this requirement will result on the loss of 1 point on the final grade**

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. L22a: Understand the implications of anesthesia in the acid base balance

2. L22b: Enumerate the main causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis.
3. L22c: Interpret basic blood gas analysis results

Quizzes:
Quizzes are open book but will be time restricted and one submission only. Once you have started the quiz you will have a certain amount of time to complete the quiz after which it will automatically submit. There will be 6 quizzes, corresponding to the 6 blocks of lectures. Quizzes will have different points depending on how many lectures are involved.
The questions will be a combination of MCQs and short answer questions. There might be more than one question relating to a given clinical case. Immediate feedback will be given upon submission. Please look at the feedback to help your learning and to detect any weaknesses on the course material.
Please make sure you have submitted your quizzes prior the due date otherwise you might not get all the points. The due time is always **11:59pm GRENADA TIME**
In addition to the quizzes, the handouts for the DL 3 will be worthy 4 points on the final grade.

Forums:
For each lecture, a forum thread will be open for Q&A. This will be our main source of communication.
In addition, further discussion regarding the topic will also be added. It is expected the participation on these discussions. **Failing to participate in at least 1 discussion will result on the loss of 1 point of the final grade.** It's important that you post thoughtful messages that move the conversation forward in some way. Posts like "Yeah, I agree." is not an acceptable posting and will not be counted as participation.

Zoom:
The Zoom session times for SAMS 520 will be on Fridays 12:00-1:30pm Grenada (NY) time. I am aiming to have one Zoom session per week as office hours at the end of the week to go over any question or clarifications that were not covered on the forum. Additional individual office hours can be arranged upon request as well.

In addition to the Q&A sessions, at least one zoom session will be used as the Didactic Lab 4. This session will simulate an anesthetic procedure, starting from planning and it will include the expected problems and complications, developing an anesthetic protocol and monitoring the patient via a simulator. The success of this session will depend on the student participation as you will develop the full anesthetic plan as a group. The session is originally scheduled for the 17th of April, but it can be changed upon request.
All the Zoom sessions will be recorded and posted on SAKAI for those that cannot attend.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Small Animal Medicine and Surgery Department

***Veterinary Anesthesia and Analgesia* (3 credits)**

SAMS 520 TERM 4

Spring 2020

I. Course Faculty and Staff Information

a. Course Directors: Dr. Flavia Restitutti, DVM PhD, *Associate Professor*
Dr. Rodolfo Bruhl-Day, DVM ChD.SAS Dipl CLOVE, EdD, *Department Chair*
b. Email: frestitu@sgu.edu (Dr. Restitutti)
c. Tel: 444-4175 ext 3807
d. Office Location: Cassia Building (SGU Campus map #17)), ground floor (Dr. Restitutti)
e. Office hours: By appointment via email
f. Other faculty members
Dr. Mercedes Miccio DVM, *Assistant Professor,* mmiccio@sgu.edu
Dr. Kip Lemke DVM, MSc, DACVAA (US) *Visiting professor*
Dr. Inga-Catalina Cruz Benedetti (CAN) DVM, MSc, Dip. ECVAA *Visiting professor*
Dr. Rachel Bennett (UK) MA VetMB, CertVA, DACVAA, PhD *Visiting professor*
Naudia Dundas BSc*, Demonstrator,* ndundas@sgu.edu

II. Course location

Ray & Jan Sis Lecture Theatre 2
Laboratory: VSL and SIM Lab

III. Prerequisite and/or co-requisite courses

ANPH 506/503 Veterinary Anatomy I/II
ANPH 504/505 Veterinary Pharmacology I/II
ANPH 512/513 Veterinary Physiology I/II

IV. Required resources

Long notes, slides handouts, didactic laboratory handouts and any additional reading that might be provided on SAKAI (for example review of literature articles)

V. Recommended resources

a. Supplemental articles (for example literature reviews) will be uploaded on SAKAI
b. Reference textbooks:
   - BSAVA Manual of Canine and Feline Anaesthesia and Analgesia, 3rd edition Tanya Duke-Novakovski, Marieke De Vries, Chris Seymour. BSAVA 2016
   - Veterinary Anaesthesia Principles to Practice. Alex Dugdale Wiley-Blackwell, 2010
   - Veterinary Anesthesia and Analgesia, The fifth edition of Lumb & Jones. Grimm, Lamont, Tranquilli, Greene, Robertson. Blackwell Professional 2015
   - Veterinary Anaesthesia, 11th edition. KW Clarke, CM Trim & LW Hall. Saunders Ltd. 2013
   - Handbook of Veterinary Pain Management, 3rd edition. James S. Gaynor and William M Muir. Elsevier 2015
   - 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
   - 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. 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

Students are expected to dress for laboratories according to the attire code of the facility where the laboratory will be held:

- Veterinary Surgery Lab (VSL): closed toe shoes, scrubs, and lab coat;
- SimLab: closed toe shoes, scrubs

VIII. Course rationale (catalogue course description)

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 wild life/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.
Didactic laboratories engaging students in practical activities are part of the course.

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. Assess 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-level outcomes

See appendix I

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGU SVM program level outcome
CLO 1 Formulate a sedation and/or anesthetic plan in domestic and exotic animals according to their physical status.	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 2 Design an analgesic plan in domestic animals	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 3 Clinically interpret the information provided by the monitoring equipment	PLO 04 Explain the relationship between disease process and clinical signs PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 4 Assess the anesthetic depth of a patient of the different species	PLO 01 Recall. Understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 5 Formulate an euthanasia protocol for domestic animals	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare PLO 27 Demonstrate and model effective client communicate and ethical conduct
CLO 6 Recognize the main components of an anesthetic machine.	PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare
CLO 7 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

b. Assessment policy: There will be three graded exams and one clinical skills assessment with 140 points during the course. Exams and quizzes will consist mainly of MCQ questions, **however short answer questions may be included at the discretion of the course director.** The examination will be based on all the material covered in lecture notes, power point presentation and didactic labs, as well as didactic material distributed through the SAKAI network and verbal information presented by the lectures. The aspects of pharmacology and physiology relevant to anesthesia that were taught during the previous terms are considered part of the exam material. Students are responsible for reviewing the pharmacology and physiology notes. Students are expected to make use of the recommended books, scientific literature and journal articles uploaded on the SAKAI network. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam period. Content and weight of each exam and quiz is detailed below. Breakdown of questions per exam will not be disclosed in this course.

   All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

Examination	Spring 2020	Maximum points	Lecture content	Lab content
Quiz I	Feb 21st	20	L1-L6	DL1
Midterm	Mar 11th	42	L7-L21	DL2
Clinical assessment	Apr 28th and Apr 29th	14		DL1-4
Final exam	May 11th	64	L1-40	DL1-4
Total		**140**		

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).

SGU policy: No wristwatches will be allowed into exams, not on wrists or on the desk top. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an essay or short-answer format and will take place using ExamSoft.

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 prepare the provided handouts before coming to the didactic laboratories

XVI. Professionalism statement

The 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.

Please exhibit professional behavior in class. Students are expected to **arrive on time** for lectures and exams.

The consumption of food is not allowed during lectures and laboratories. Water and nonalcoholic drinks in spill-proof containers are allowed. The use of mobile phones is not

allowed. The lecturers may ask students who breach any of the above rules to leave the class/laboratory and may deny access to classes and laboratories when students arrive late. **During the exams: The use of mobile phones is not allowed** during class and exams. No wristwatches of any type will be allowed, either on the arm or on the table. Only laptop, student ID, pencil and water in a clear container are permitted.

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

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

Laboratory session attendance policy: Due space limitation, if a student knows in advance attendance to their laboratory session day will not be possible, please switch in advance with another student and inform the instructors.

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.

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 SofTest on their laptop prior to exam day. Once SofTest has been successfully

downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.

4. 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.
5. 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.

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. Students are permitted to download exams only in the examination venue and not in advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the
10. examination room.
11. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
12. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
13. Examinees are not allowed to use a telephone or other communication device at any point during the examination.

14. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
15. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
16. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
17. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
18. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action.
19. 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

    *No other personal belongings will be permitted.

XX. Copyright policy

Appendices

Appendix I - Lesson and Laboratory level outcomes

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 b. Explain the mechanism of action of the effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines c. List the clinical effects and side effects of the most commonly used sedatives: phenothiazines, butyrophenones, alpha2-adrenoceptor agonists, benzodiazepines d. List the most commonly used opioids in veterinary anesthesia e. Understand the importance of using opioids for premedication f. Compare the different opioids regarding time of onset, duration of effect, efficacy and side effects g. Understand the importance of handling controlled substances in veterinary practice h. Explain the effects and side effects of the anticholinergic drugs
L4	Preanesthetic Medication II	

		i. Compare atropine and glycopyrrolate regarding duration 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 h. List the different modalities to provide inhalational anesthetics to a patient i. Explain the advantages, disadvantages and indications of face masks, supraglottic devices and endotracheal tubes
L8	Inhalation Anesthesia Equipment II	
L9	Inhalation Anesthesia Equipment III	
L10	Inhalational Anesthetic agents I	a. Explain the physicochemical properties of the inhalant anesthetics and their impact on practical use b. Explain the minimal alveolar concentration c. Compare the effects and side effects of the inhalant anesthetics in use (Isoflurane, Sevoflurane, Halothane, Desflurane)
L11	Inhalational Anesthetic agents II	

		d. Explain the indications, effects and side effects of nitrous oxide e. Understand the potential risks of chronic exposure to inhalant anesthetics and nitrous oxide
DL1	Didactic Lab 1: Simulations, IV catheter placement, Drug calculations	a. Demonstrate intravenous catheter placement in a dog manikin b. Calculate drug dosages and drug solutions c. Observe changes in cardiorespiratory parameters on a monitor after injecting the most commonly used sedatives and injectable anesthetics to a dog
L12	Pharmacology of Local Anesthetic Drugs	a. Classify the different local anesthetics (LA) in use b. Compare the different LA regarding physicochemical properties, effects and side effects c. Describe the different additives to LA's and their effects d. Reason the use of local anesthesia
L13	Local Anesthetic Techniques in Small Animals I	a. Explain the commonly used local anesthetic techniques used in small animals: topical anesthesia, infiltration techniques, nerve blocks of head and extremities, intravenous regional anesthesia and epidural anesthesia b. List the indications and possible side effects of the LA techniques mentioned above
L14	Muscle relaxants (NMBAs/Guaifenesin)	a. List the indications for neuromuscular blockade b. Compare the different neuromuscular blocking agents available c. Understand the importance of monitoring neuromuscular blockade
L15	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
L16	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
L17	Anesthetic Monitoring III	a. Assess the respiratory function in the anesthetized patient b. Define the different monitors available to assess respiratory function and understand their limitations c. Interpret the capnography curve d. Differentiate between oxygenation and ventilation
L18	Anesthetic Monitoring IV	a. Name the indications and potential side effects for mechanical ventilation (IPPV) b. Name the modalities of IPPV and its indication of use
L19	ECG and Capnography – An Interactive Approach	a. Identify different arrythmias observed on ECG b. Identify and interpret different capnography curves
DL2	Didactic lab 2: Equipment lab	a. Properly assemble an anesthesia machine and name its components b. Explain the gas flow through the anesthesia machine c. Perform a leak test of the anesthesia machine d. Endotracheally intubate a dog manikin and inflate the cuff of the ET tube if indicated

L20	Anesthesia emergencies and Resuscitation	a. Differentiate between common complications and emergencies in anesthesia b. Recognize the most common complications occurring during anesthesia and list treatment options
L21	CPR	a. Define the guidelines stated by the RECOVER Initiative b. Understand the importance of correct techniques for cardiorespiratory resuscitation
L22	Blood gas analysis and acid base physiology	a. Understand the implications of anesthesia in the acid base balance b. Enumerate the main causes of respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis. c. Interpret basic blood gas analysis results
L23	Perioperative fluid therapy I	a. Differentiate between dehydration and hypovolemia b. Understand the clinical difference between crystalloids and colloids c. Design fluid therapy for your patient undergoing anesthesia d. Calculate fluid rates for different drip sets e. Explain the significance and causes of perioperative hypothermia f. List different methods to prevent or treat perioperative hypothermia g. List possible causes for hyperthermia
L24	Perioperative fluid therapy II & Thermoregulation	
DL3	Didactic lab 3: Monitoring	a. Demonstrate blood pressure measurement with oscillometric and Doppler techniques and interpret the values b. Demonstrate the use of an ECG in small animals and interpret the ECG

		c. Measure end tidal and inspiratory carbon dioxide and interpret the capnography curve d. 4. Measure SpO2 with a pulse oximeter and interpret the result
L25	Pain Physiology	a. Explain the nociceptive pathway b. Differentiate between physiologic and clinical pain c. Explain the possible consequences of pain d. Justify pain treatment in animals
L26	Pain Assessment	a. Explain the commonly used pain scoring systems in animals: numerical rating scales, visual analogues scales, composite pain scales b. Understand the limitations of pain assessment in animals c. Explain the PLATTER approach to pain
L27	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
L28	Small Animal Anesthesia I	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
L29	Small Animal Anesthesia II	
L30	Small Animal Anesthesia III	
L31	Small Animal Anesthesia IV	
L32	Small Animal Anesthesia V	

		develop an anesthetic and analgesic protocol for geriatric patients f. Understand the anesthetic challenges of patients undergoing dental procedures g. Comprehend the implications of obesity when developing an anesthetic plan for obese small animal patients h. Design an anesthetic and analgesic protocol for small animal patients with hepatic diseases i. Design an anesthetic and analgesic protocol for small animal patients with renal disease j. Design an anesthetic protocol for obstructed small animal patients k. Design an anesthetic and analgesic protocol for small animal patients with diabetes mellitus l. Design an anesthetic and analgesic protocol for a cat with hyperthyroidism m. Anesthesia in ophthalmic patients n. Design an anesthetic protocol in neurological patients o. Understand the physiological changes of pregnancy and the implications for anesthesia p. Design an anesthetic protocol for a patient undergoing C-section q. Design an anesthetic and analgesic protocol for small animal patients with different heart conditions r. Design an anesthetic and analgesic protocol for dogs with gastric-dilatational volvulus (GDV)

L33	Anesthesia in Guinea Pigs, Rabbits and small rodents	a. Explain the anatomical and physiological particularities of Guinea Pigs, Rabbits and rodents concerning anesthesia b. Elaborate an appropriate anesthetic protocol for Guinea Pigs, Rabbits and Small Rodents
L34	Avian and Reptile Anesthesia	a. Explain the anatomical and physiological particularities of avian and reptile species affecting the anesthesia procedure b. Elaborate an appropriate anesthetic protocol for birds and reptiles
DL4	Didactic lab 4 Case simulations	a. Interpret cardiovascular and respiratory parameters in small and large animals undergoing anesthesia b. Recognize common anesthetic complications occurring during anesthesia c. Choose appropriate treatment options for common d. anesthetic complications occurring during anesthesia
L35	Equine Anesthesia I	a. Explain the relatively high risk for horses undergoing anesthesia, and how this risk can be addressed b. List possible sedation protocols for standing procedures in horses c. Design an anesthetic and analgesic protocol for horses
L36	Equine anesthesia II	
L37	Anesthesia in Ruminants and Camelids	a. Explain the special considerations in ruminant anesthesia b. Choose an appropriate drug protocol for cattle and small ruminant c. Explain the challenges in camelid anesthesia d. Choose an appropriate anesthetic protocol for camelids

L38	Swine Anesthesia	a. Explain the challenges of anesthesia in pigs b. Design an anesthetic and analgesic drug protocol for pigs a. Define the term malignant hyperthermia
L39	Local Anesthesia in Large animals	b. Explain the significance of local anesthesia in large animals c. Describe commonly used local anesthetic techniques in large animals d. Understand the side effects of these LA techniques
L40	Euthanasia	a. List the different techniques and drugs available for euthanasia in small and large animals b. Explain how to properly euthanize small animals and horses c. Describe how to confirm death in animals after euthanasia d. Appreciate the AVMA guidelines for euthanasia of Animals

Appendix II: **Curse schedule (L: Lecture; DL: Didactic lab)**

Lecturers:

FR: Flavia Restitutti; MM: Mercedes Miccio; KL: Kip Lemke; ICCB: Inga Catalina Cruz Benedetti; RB: Rachel Bennett

Week	L/DL	Date/Time	Lecturer	Topic
1	L1	Jan 20, Mon 10:30	FR	Introduction to the course
	L2	Jan 22, Wed 10:30	FR	Anesthetic planning
	L3	Jan 24, Fri 10:30	MM	Preanesthetic medication I
2	L4	Jan 27, Mon 10:30	MM	Preanesthetic medication II
	L5	Jan 29, Thur 11:30	FR	Injectable Anesthetic agents I
	L6	Jan 30 Thur 11:30	FR	Injectable Anesthetic agents II
	L7	Jan 31 Fri 10:30	FR	Inhalational Anesthesia Equipment I
3	L8	Feb 3 Mon 10:30	MM	Anesthesia Equipment II
	DL1	Feb 3 Mon 13:30	SimLab I- Group I IV catheter placement, drug calculations and computer simulations (SimLab)	
	L9	Feb 5 Wed 10:30	FR	Inhalational Anesthesia Equipment III

	L10	Feb 6 Thur 10:30	FR	Inhalational Anesthetics I
4	L11	Feb 10 Mon 10:30	FR	Inhalational Anesthetic Agents II
	DL1	Feb 10 Mon 13:30	Simlab I – Student group II IV catheter placement, drug calculations and computer simulation	
	L12	Feb 12 Wed 10:30	FR	Pharmacology of Local Anesthetic Drugs
	L13	Feb 14 Fri 10:30	FR	Local Anesthetic Techniques in Small Animals
	DL1	Feb 14 Fri 13:30	Simlab I – Student group III IV catheter placement, drug calculations and computer simulation	
5	L14	Feb 17 Mon 10:30	FR	Muscle relaxants (NMBAs + Guaifenesin)
	L15	Feb 19 Wed 10:30	KL	Anesthesia Monitoring I
	QUIZ	Feb 21 Fri 8:30	L1-L6+DL1 (Charter Hall)	
6	L16	Feb 24 Mon 10:30	KL	Anesthesia Monitoring II
	DL2	Feb 24 Mon 13:30	Simlab II – Group A Anesthetic equipment (VSL)	
	L17	Feb 26 Wed 10:30	KL	Anesthetic Monitoring III
	DL2	Feb 28 Fri 13:30	Simlab II – Student group B Anesthetic equipment (VSL)	

7	L18	Mar 02 Mon 10:30	KL	Anesthetic Monitoring IV
	DL2	Mar 02 Mon 13:30	Simlab II – Student group B Anesthetic equipment (VSL)	
	L19	Mar 4 Wed 10:30	FR	ECG and Capnograph: An interactive approach
	L20	Mar 6 Fri 10:30	FR	Anesthetic Emergencies and Complications
8	Midterm	Mar 11 Mon 8:30	L1-L20; DL1-2 **(Cumulative)** (Modica South)	
9	L21	Mar 16 Mon 10:30	FR	CPR
	DL3	March 16 Mon 13:30	Simlab III – Student group A Monitoring equipment (VSL)	
	L22	Mar 18 Wed 10:30	ICCB	Acid Base Physiology/Blood gas
	L23	Mar 20 Fri 10:30	ICCB	Perioperative fluid therapy I
	DL3	Mar 20 Fri 13:30	Simlab III – Student group B Monitoring equipment (VSL)	
10	L24	Mar 23 Mon 10:30	ICCB	Perioperative fluid therapy II / Thermoregulation
	DL3	Oct 23 Wed 13:30	Simlab III – Student group C Monitoring equipment (VSL)	
	L25	Mar 25 Wed 10:30	FR	Pain Physiology
	L26	Mar 27 Mon 10:30	FR	Pain Assessment

11	L27	Mar 30 Wed 10:30	MM	Pain treatment: Pharmacological Approach
	L28	Apr 1 Wed 10:30	FR	Small Animal Anesthesia I
	L29	Apr 3 Mon 10:30	FR	Small Animal Anesthesia II
12	L30	Apr 8 Wed 10:30	FR	Small Animal Anesthesia III
13	L31	Apr 15 Fri 9:30	FR	Small Animal Anesthesia IV
	L32	Apr 17 Mon 9:30	FR	Small Animal Anesthesia V
	DL4	Apr 17 Mon 13:30	SimLab - Computer simulations, case discussions ALL (KB Taylor Hall Blue)	
14	L33	Apr 20 Mon 9:30	FR	Anesthesia in Rabbits, Guinea Pigs and Small Rodents
	L34	Apr 21 Tue 9:30	FR	Avian and Reptile Anesthesia
	L35	Apr 22 Wed 9:30	RB	Equine Anesthesia I
	L36	Apr 24 Fri 09:30	RB	Equine Anesthesia II
15	L37	Apr 27 Fri 10:30	FR	Anesthesia in Ruminants and Camelids
	L38	Apr 28 Tue 10:30	FR	Swine Anesthesia
	Assess	Apr 28 Tue 13:30	Practical Skills Assessment (VSL)	
	L39	Apr 29 Wed 10:30	FR	Local Anesthesia Techniques in Large Animals

	Assess	Apr 29 Wed 13:30	Practical Skills Assessment (VSL)	
	L40	Apr 30 Thur 10:30	FR	Euthanasia
16	**Final**	**May 11 8:30**	**Final exam (Cumulative) (Modica South)**	

SVM Course Code: SAMS522 Small Animal Medicine 1
Course Director: Dr. Talia Guttin
Spring 2020 Online Course Completion

Note: All Zoom sessions are optional to join in live, on Monday, 11:30am-12:20pm Grenada time, and will be recorded and posted for viewing at a later time.

Previous Course Lectures/Labs:	Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Hematology/immunology Lectures: 1. Hemostasis 2. Immune-mediated disease 3. Approach to anemia 4. Approach to thrombocytopenia 5. Other hematologic diseases	Hematology/immunology Lectures via Panopto 1. Hemostasis 2. Immune mediated diseases 3. Approach to anemia 4. Approach to thrombocytopenia *Zoom (optional)- open forum discussion, questions, cases.	**March 23-29:** Hematology and Immunology Panopto 1-4. + optional Zoom (**March 30th**, 11:30am- 12:30pm GMT-4).	Sakai Assignments: Submit 3 main points from each lecture. (*due March 29, 10 pts*.) Write discharge instructions for a patient on immune-suppressive doses of prednisone. Graded on inclusion of key points. (*due April 5, 5 pts.*) MCQs on Sakai Tests/quizzes. (*due April 5, 10 pts*)
Renal and Urinary Lectures: 1. Localization 2. Acute kidney Injury (2) 3. Chronic kidney disease 4. Proteinuria 5. Glomerular disease 6. Urolithiasis 7. Urethral obstruction and FIC 8. Urinary Tract Infections 9. Prostatic disease and neoplasia 10. Micturition disorders	Renal and Urinary via Panopto: 1. Localization 2. Acute kidney Injury (1) 3. Chronic kidney disease 4. Proteinuria and glomerular disease 5. Urolithiasis 6. Urethral obstruction and FIC 7. UTI, prostatic disease, neoplasia 8. Micturition disorders *Zoom (optional)- open forum discussion, questions, cases.	**March 30-April 5:** Renal Panopto 1-3 **April 6-12:** Renal Panopto 4-6 **April 13-19:** Renal 7-8 + optional zoom (**April 13th** 11:30am-12:30pm GMT-4)	2 cases: Diagnostic plan and treatment plan for renal disease case. Grading based on model answer (will be provided to all after due date). (*due April 12, 10 pts*) Chart to fill out during micturition disorders lecture. Rubric. (*due April 19, 5 pts.*) Sakai Assignments: Submit 3 main points from each lecture in this section. (*due April 19, 10 pts.)* MCQs on Sakai Tests/quizzes. (*due April 26, 10 pts*.)

CPR Recover Guidelines: 1 lecture	RECOVER guidelines, guided reading with assignment and forum discussion.	**April 20-26:** CPR and Respiratory 1- ER considerations.	CPR questions based on reading. Forums. (*due April 26, 10 pts*)
Respiratory Lectures: 1. Emergency considerations 2. Nasal disorders 3. Larynx and pharynx 4. Trachea and Bronchi 5. Pulmonary parenchyma 6. Pleural diseases 7. Cases	Respiratory via Panopto: 1. Emergency considerations 2. Nasal disorders 3. Larynx and pharynx 4. Trachea and Bronchi 5. Pulmonary parenchyma 6. Pleural diseases *Zoom (optional)- open forum discussion, questions, cases.	**April 27-May 3:** Respiratory 2-4 **May 4-10:** Respiratory 5-6 *Zoom (optional)- **May 4th**, 11:30am-12:30pm (GMT-4) open forum discussion, questions, cases.	Sakai Assignments: Submit 3 main points from each lecture in this section. (*due May 10, 10 pts.)* MCQs on Sakai Tests/quizzes. (*due May 17, 10 pts*) Respiratory case: respiratory versus cardiac cat, make diagnostic plan. Pleural effusion chart. Sakai Tests and Quizzes. (*due May 17, 10 pts*)
None- finals week	Zoom (optional)—review material (not for final, but for life), case discussions upon request.	**May 11-17** Zoom (optional)—**May 11th**, 11:30am-12:30pm (GMT-4) review material (not for final, but for life), case discussions upon request.	Finish assignments due this week.
Total Lectures: 24	Total Lectures (Panopto): 18 Total optional zoom sessions: 4		Total assessment points: 100

Assessment Summary:

Original Point Allocation:	Revised Point Allocation:
Total points = 150 *Total points breakdown:* Midterm exam 65 pts Assignments 10 pts Final exam 75 pts	Total points = 156 *Total points breakdown:* Midterm 35% Assignments, Sakai tests/quizzes: 65%

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. None.

ST. GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

SMALL ANIMAL MEDICINE I SYLLABUS (3 credits)

SAMS 522 Term 5

Spring 2020

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor
Email: tguttin@sgu.edu
Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3440
Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.
Lecturers in this course:
Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor, acorrigan@sgu.edu;
Tara Paterson, DVM, MSc, Associate Professor, tpaterson@sgu.edu;
Robert Kennis, DVM, DACVD, Visiting Professor, kennira@auburn.edu;
Melissa Bain, DVM, DACVB, Visiting Professor, mjbain@ucdavis.edu.

Office Hours: To be planned with class representative. Attendance at office hours is not required, will be held at students' request/need via the class representative, and will be in a group format. Case examples may be discussed to aide student understanding of the material taught in class. Individual office hours can be set up as needed by email with the course director.

II. Course Location

All lectures will be held in Ray & Jan Sis Lecture Theater 1.
All lectures will be recorded and archived via Panopto.

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

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only, as pdf files, and will not be made available in hard copy. 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: Textbook of Veterinary Internal Medicine, Editor Ettinger, Publisher Saunders, 8th edition; Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition. All lectures will be available as audio files via Panopto.

V. Recommended Resources

Textbooks:
Infectious Diseases of the Dog and Cat, Editor Greene, Publisher Elsevier, 4th ed.
ACVIM Consensus Statements, Journal of Veterinary Medicine, various editions.
Veterinary Clinics North America Small Animal- review articles, various topics.
International Renal Interest Society website- IRIS chronic kidney disease staging.
Additional references/resources are cited at the end of lectures where indicated.

VI. Special 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-level Outcomes

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

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics.
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 for specific organ systems and consider antimicrobial resistance.

5. Recognize emergency presentations and considerations for specific organ systems.
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.

X. Lesson-level Outcomes

See Appendix XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXI

XII. Course Schedule

See Appendix XXII

XIII. Grading and assessment policy, and grading rubrics

Grading scale (complies with SGU and SVM examination policies)

>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 2 exams and 7 homeworks. The final exam is **not cumulative**. Each question/point is worth the same on exams and on homework (eg. each homework is worth 1 exam question), and grades will be compiled by addition of total questions/points. The midterm and final exam material will come from the lectures and in class discussions. There will be 3 multiple choice questions per lecture for both the midterm exam and the final exam. Homework assignments will be posted on Sakai Assignments or Sakai Tests/Quizzes, and student submissions will be made directly in Sakai. Grading of homeworks is formative, with 1 point for completion, and a model answer will be provided for student self-assessment.

XIV. Recommended Study Strategies

- Prior to class, or after class, reading the complementary chapters in the recommended textbooks (namely Ettinger's Textbook of Small Animal Internal Medicine)
- Class attendance and active participation
- Office hours attendance and active participation

- 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

XV. Instructors' Expectations of the Student

Students are expected to read textbook chapters prior to lecture, and to come to class prepared for discussion and case studies.

XVI. Professionalism Statement (SGU Student Code of Conduct)

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

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

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

XVII. Attendance Policy

Students are expected to attend all classes for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Greater than 2 unexcused absences may result in a 0.5 decrease in your overall grade for the course.

If absence from individual classes, examinations, and 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 or 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. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

A make-up exam will be given only when a documented excuse from the University Health Clinic, the SGU General/Medical Excuse Submission web site, or direct approval from the SVM Dean of Students will be accepted. Excuses that are issued **after** the examination has begun will not be accepted.

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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an

alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.

18. 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

    *No other personal belongings will be permitted.

XX. Copyright Policy

XXI. Appendix: PLO, CLO, LLO Mapping

Mapping CLOs to Program Level Outcomes and AVMA Competencies

Course Level Outcomes	SGU-SVM Program Level Outcomes	AVMA clinical competencies
Course Level Outcome 1	A1, A2, A3, A4, A5, A6, A7, A10 B4, C1, C8, C9 A1	A B C D E F H
Course Level Outcome 2	A1, A2, A3, A4, A6, A7, A11, B4, C1, C5, C6, C9	A B C D F H I
Course Level Outcome 3	A1, A2, A3, A4, A5, A6, A7 A8, A9, A10, A11, B4, C1, C5, C6, C9	A B C D F H I
Course Level Outcome 4	A1, A2, A3, A4, A5, A6, A7 A8, A9, A10, A11, B4, C1, C2, C3, C5, C6, C7, C9	A B C D F H I
Course Level Outcome 5	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, B4, C1, C2, C3, C4, C5, C6, C9	A B C D F H
Course Level Outcome 6	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, B1, B2, B8, C8	A B H
Course Level Outcome 7	A1, A2, A3, A4, A5, A6, A7, A8, A9, A11, B1, C1, C2, C5, C7	A B G I

Mapping of LLOs to CLOs:

	Lecture/lab Learning Outcome	Course learning outcome Number/s
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, Coccidiodomycosis, Candidiasis, Pythium, and Lagenidiosis.	**1 2 3 4 5**
	4. Explain the prognosis for all of the above fungal infections	**4 6**
	5. Implement and critique treatment plans for a variety of fungal diseases	**4**
	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**
	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**
	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**
	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**
	22. Explain the prognosis for the diseases above.	**4 6**
	23. Develop an appropriate systemic work up for a variety of vector borne diseases, including neurologic and ophthalmologic manifestations	**3 4 5**

	24. Explain the benefits of vector prevention	4 6 7
	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
	26. Explain the prognosis for the above diseases	4 5 6
	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
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
	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
	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. Utilize current research to help with disease classification and treatments	1 2 3 4 5
	9. Based on relevant history, PE findings, and specific diagnostic testing, diagnose cases of: pneumothorax, pyothorax, chylothorax, neoplastic effusions, FCV, FHV, Chlamydophila 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
	10. Explain the prognosis for all of the above diseases.	4 5 6
	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
	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
	5. Discuss with owners the prognosis, risk of relapse, and prevention of relapse of immune mediated diseases	4 5 6
	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
	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
	2. Prognosticate for all of the above diseases	4 6
	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
	6. Discuss diagnosis, monitoring, treatment, and prognostic differences for glomerular disease	1 2 3 4 5 6

	7. Discuss the indications and prognosis for dialysis, and the different types of dialysis	4 5 6
	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
	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
Emergency Section	1. Compare and contrast BLS and ALS in CPR	1 2 3 4 5
	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
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
	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
	4. Explain the prognosis for all of the above diseases.	4 6
	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
	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

	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**

XXII. Appendix 2: Course Schedule Small Animal Med 1 Fall 2019

Lecture Time	Day/Dates	LECTURE TOPIC	Instructor
Week 1			
1:30	**Mon. 1/20**	**Dermatology**: Introduction and Bacterial Follliculitis	Kennis
1:30	**Tues. 1/21**	Bacterial Folliculitis and Deep Bacterial Infections	Kennis
1:30	**Wed. 1/22**	Dermatophytes and Demodicosis	Kennis
1:30	**Thurs. 1/23**	Sarcoptic Mange, Flea Allergy, & Malassezia Dermatitis	Kennis
Week 2			
3:30	**Tues. 1/28**	Atopy and Food Allergy	Kennis
4:30	**Tues. 1/28**	Feline Pruritic Skin Disorders	Kennis
4:30	**Wed. 1/29**	Autoimmune Skin Disoders	Kennis
3:30	**Thurs. 1/30**	Miscellaneous Ulcerative Skin Disorders	Kennis
3:30	**Fri. 1/31**	Miscellaneous Scaling Disorders	Kennis
4:30	**Fri. 1/31**	Otitis	Kennis
Week 3			
Week 4			
1:30	**Tues. 2/11**	**Infectious Diseases**: Clinical Pharm & Antibiotic Use	Corrigan
4:30	**Wed. 2/12**	**Behavior**	Bain
Week 5			
3:30	**Mon. 2/17**	Tick Bourne Diseases	Corrigan
Week 6			
3:30	**Tues. 2/25**	Tick Bourne Diseases	Corrigan
4:30	**Fri. 2/28**	Systemic Mycoses	Corrigan
Week 7			
4:30	**Mon. 3/2**	Canine Viral Diseases	Corrigan
3:30	**Tues. 3/3**	Feline Viral Diseases	Corrigan
4:30	**Tues. 3/3**	Feline Viral Diseases	Corrigan
Week 8 1:30-3:00	**Midterm Thurs. 3/12**	MIDTERM EXAM Venue TBD	18 lectures
Week 9			
4:30	**Fri. 3/20**	**Hematology and Immunology**: Disorders of Hemostasis	Corrigan
Week 10			
1:30	**Tues. 3/24**	Immune Mediated Diseases	Guttin
1:30	**Thurs. 3/26**	Diagnostic approach to anemia	Guttin
Week 11			
3:30	**Mon 3/30**	Diagnostic approach to thrombocytopenia	Guttin
4:30	**Mon 3/30**	Other hematologic diseases	Guttin
3:30	**Wed. 4/1**	**Renal and Urinary System**: Review of Localization	Guttin
4:30	**Wed. 4/1**	Acute Kidney Injury	Guttin
2:30	**Fri. 4/3**	Acute Kidney Injury	Guttin
Week 12			
3:30	**Mon 4/6**	Chronic Kidney Disease	Guttin
4:30	**Mon 4/6**	Proteinuria	Guttin
3:30	**Thurs. 4/9**	Glomerular Disease	Guttin
Week 13			
4:30	**Wed. 4/15**	Urolithiasis	Guttin
1:30	**Fri. 4/17**	Urethral Obstruction and Feline Idiopathic Cystitis	Guttin

Week 14			
Week 15			
1:30	**Tues. 4/28**	Urinary Tract Infections	Guttin
3:30	**Wed. 4/29**	Prostatic Diseases and Urinary Tract Neoplasia	Guttin
2:30	**Thurs. 4/30**	Micturition Disorders	Guttin
3:30	**Thurs. 4/30**	**Emergency Medicine**: CPR	Corrigan
Week 16			
2:30	**Mon. 5/4**	**Respiratory:** Emergency considerations	Corrigan
3:30	**Mon. 5/4**	Nasal Disorders	Corrigan
3:30	**Tues. 5/5**	Disorders of the Larynx and Pharynx	Corrigan
2:30	**Wed. 5/6**	Disorders of the Trachea and Bronchi	Corrigan
3:30	**Wed. 5/6**	Disorders of the Pulmonary Parenchyma	Corrigan
1:30	**Thurs. 5/7**	Disorders of the Pleural Cavity	Corrigan
2:30	**Thurs. 5/7**	Cases/Catch up	Corrigan
Week 17 **1:30-3:30**	**Finals** **Fri. 5/15**	FINAL EXAM Venue TBD	24 lectures

EXAMPLE

SVM Course Code: SAMS524
Course Director: Dr. Anne Corrigan
Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Endocrine Lectures (1/2 way through) 1. Hypoadrenocorticism (partial) 2. Additional Endocrinopathies 3. Diabetes mellitus 4. DKA case	Endocrine Lectures via Panopto 1. Hypoadrenocorticism (partial) 2. Additional Endocrinopathies 3. ZOOM session on Diabetes mellitus (will be recorded IF you cannot attend participate in the Forums discussion* Date TBA) a. Diabetes articles Read and be prepared to discuss on ZOOM with 10 thoughts in FORUMS **before** the zoom session! Forums questions and discussion!! Will round you up on grades!!	**March 23-29:** Endocrine Week Panopto labeled lectures in SAKAI Forum/Zoom discussion on articles… Top 10 DM thoughts from article Post questions and initiate discussion in Forums • Each person will need to post 1 comment total.	Sakai Assignments: • Create an Endocrine Chart. (*due April 5. 5 pts.*) • 3 main points from each lecture in (5 points) Zoom Session Date to be announced on Sakai Link will be provided! Endocrine MCQ Assessment -5 point online Sakai quiz Date TBA
Oncology: 1. Intro to onco 2. Chemotherapy 3. Radiation therapy 4. Lymphoma 5. STS/MCT 6. HSA 7. OSA 8. Cases	Onco via Panopto: 1. Intro to onco/ Chemotherapy 2. Radiation therapy/Lymphoma 3. STS/MCT/HSA 4. OSA Optional Zoom Office Hours TBA	**March 30-April 5:** Onco Panoptos Chemo side effect discussion	2 cases: LSA referral with staging HSA emergency Grading based on model answer (will be provided to all after due date). (*due April 12, 10 pts*) Sakai Assignments: 3 main points from each lecture in this section (5 points)

			MST Chart for major tumor types: HSA, LSA, FSA, OSA and MCT (low grade/high grade) (*due April 12, 10 pts.*)
Hepatic: 1. Patient Presentations 2. Biliary diseases 3. Feline Hepatic Lipidosis 4. Toxic Hepatic Injury 5. Infectious Liver diseases 6. Inflammatory liver diseases 7. Vascular diseases 8. Hepatic encephalopathy	Panopto Lectures: 1. Patient Presentations 2. Biliary diseases 3. Feline Hepatic Lipidosis 4. Toxic Hepatic Injury 5. Infectious Liver diseases 6. Inflammatory liver diseases 7. Vascular diseases 8. Hepatic encephalopathy Optional Zoom Office Hours TBA	**April 6-12:** Hepatic Panopto 1-4 **April 13-19:** Panopto 5-8	Hepatic Lipidosis Dx plan assignment (5 points) Nutrition plan (5 points) Sakai Assignments: 3 main points from each lecture in this section (5 points MCQ assessment on Sakai (*due April 26, 10 pts*)
Final Lecture: 1. Tinkerbell	Zoom Lecture Optional but recommended!! Will be recorded Followed by office hours! Zoom review session/office hours to ensure your confidence and success for clinic Dr. Guttin and I will both be on this +/- Dr. KJ	**April 20-26:** optional Zoom review/ answer questions.	
Total Lectures: 24	Total Lectures (Panopto): 18 Total optional zoom sessions: 4		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation:
Total points = *Total points breakdown:* Midterm exam 100 Assignments 3 pts Final exam 78 pts	Total points = 150 *Total points breakdown:* Midterm 100 POINTS Assignments 40 pts Sakai MCQ assessments: 25

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Make a diagnostic plan for erythrocytosis.
2. Describe the treatment and prognosis for myelodysplastic disorders.

ST. GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

SMALL ANIMAL MEDICINE 2 SYLLABUS (4 credits)

SAMS 524 Term 6

Spring 2020

I. Course Faculty and Staff Information

Course Director: Anne Corrigan, DVM, DACVIM (SAIM), Professor
Email: acorrigan@sgu.edu
Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3441
Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu
Lecturers in this course:
Dr. Talia Guttin DVM DACVIM, Assistant Professor, tguttin@sgu.edu
Dr. Kimberly Johnson DVM DACVIM (onco), Private Practice, petcancerconsulting@gmail.com
Dr. Jill Narak DVM MS DACVIM (Neurology), Private Practitioner, jill.narak@hvsevet.com

Office Hours: To be planned with class representative.
Office Hours are not required, but are recommended. Office Hours will be held at students' request/need and planned with the class representative. The format of office hours will be as a group, with students creating exam-style questions on the subjects discussed in class. Case examples may be given in Office Hours, to aide student understanding of the material taught in class.

II. Course Location

All lectures will be held in Ray & Jan Sis Lecture Theater 1.
All lectures will be recorded and archived via Panopto.

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

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only, as pdf files, and will not be made available in hard copy. 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: Textbook of Veterinary Internal Medicine, Editor Ettinger, Publisher Saunders, 8th edition; Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.
All lectures will be available as audio files via Panopto.

V. Recommended Resources

Textbooks:
Infectious Diseases of the Dog and Cat, Editor Greene, Publisher Elsevier, 4th ed.

ACVIM Consensus Statements, Journal of Veterinary Medicine, various editions.
Veterinary Clinics North America Small Animal- review articles, various topics.
International Renal Interest Society website- IRIS chronic kidney disease staging.
A Physiology text, Guyton or Cunningham
Kirk's Current Veterinary Therapy, editor Bonagura, Publisher Saunders, XIV and XV editions.

VI. Special 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

Articles may be assigned at any time during the term.

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: Cardiology, Oncology, Hepatic, Gastrointestinal, Pancreas, Endocrine, Neurology and timely Emergency and Critical Care topics. The focus of the course is evidence based medicine, and the problem-based approach, starting with a problem list, developing a differential diagnosis list, followed by a diagnostic plan, and treatment plan, for diseases within each system or topic.

IX. Course-level Outcomes

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

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for specific major organ systems and critical care topics.
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 for specific organ systems, and consider antimicrobial resistance.
5. Recognize emergency presentations and considerations for specific organ systems.
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.

X. Lesson-level Outcomes

See Appendix XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXI

XII. Course Schedule

See Appendix XXII

XIII. Grading and assessment policy, and grading rubrics

Grading scale (complies with SGU and SVM examination policies)

>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 2 exams and 7 homeworks. The final exam is **not cumulative**. Each question/point is worth the same on exams and on homework (eg. each homework is worth 1 exam question), and grades will be compiled by addition of total questions/points. The midterm and final exam material will come from the lectures and in class discussions. There will be 3 multiple choice questions per lecture for both the midterm exam and the final exam. Homework assignments will be posted on Sakai Assignments, and student submissions will be made directly in Sakai Assignments. Grading of homeworks will be formative, 1 point for completion, and a model answer will be provided for student self-reflection.

XIV. Recommended Study Strategies

- Prior to class, or after class, reading the complementary chapters in the recommended textbooks (namely Ettinger's Textbook of Small Animal Internal Medicine)
- Class attendance and active participation
- Office hours attendance and active participation
- 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

XV. Instructors' Expectations of the Student

Students are expected to read textbook chapters prior to lecture, and to come to class prepared for discussion and case studies.

XVI. Professionalism Statement (SGU Student Code of Conduct)

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

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

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

XVII. Attendance Policy

Students are expected to attend all classes for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Greater than 2 unexcused absences may result in a 0.5 decrease in your overall grade for the course.

If absence from individual classes, examinations, and 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 or 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.
Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.

A make-up exam will be given only when a documented excuse from the University Health Clinic, the SGU General/Medical Excuse Submission web site, or direct approval from the SVM Dean of Students will be accepted. Excuses that are issued **after** the examination has begun will not be accepted.

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 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.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.
18. 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

    *No other personal belongings will be permitted.

XX. Copyright Policy

XXI. Appendix: PLO, CLO, LLO Mapping

Mapping CLOs to Program Level Outcomes and AVMA Competencies

Course level outcome	SGUSVM program level outcome
	A. Core Medical Knowledge **B. Core Professional Attributes** **C. Core Clinical Competencies (Skills)**

Course Level Outcomes	**SGU-SVM Program Level Outcomes**	**AVMA clinical competencies**
Course Level Outcome 1	A1, A2, A3, A4, A5, A6, A7, A10 B4, C1, C8, C9 A1	A B C D E F H
Course Level Outcome 2	A1, A2, A3, A4, A6, A7, A11, B4, C1, C5, C6, C9	A B C D F H I
Course Level Outcome 3	A1, A2, A3, A4, A5, A6, A7 A8, A9, A10, A11, B4, C1, C5, C6, C9	A B C D F H I
Course Level Outcome 4	A1, A2, A3, A4, A5, A6, A7 A8, A9, A10, A11, B4, C1, C2, C3, C5, C6, C7, C9	A B C D F H I
Course Level Outcome 5	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, B4, C1, C2, C3, C4, C5, C6, C9	A B C D F H
Course Level Outcome 6	A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, B1, B2, B8, C8	A B H
Course Level Outcome 7	A1, A2, A3, A4, A5, A6, A7, A8, A9, A11, B1, C1, C2, C5, C7	A B G I

Mapping of LLOs to CLOs:

Cardiology Section 10 lectures	Your lecture/lab Learning Outcome	Course learning outcome Number/s
	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. 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
	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
	12. Explain the prognosis for all of 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 and Interpret the MEA given a 6- lead ECG	3
	20. Recall breed predispositions for cardiac diseases	1,2
	21. Recognize and utilize appropriate terminology	1,2,3,4,5, 6
Endocrinology section 10 lectures	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
	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. 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**
	10. Utilize current research to help with disease classification and treatments	**1,2,3,4,5**
	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**
	13. Explain the prognosis for all of the above diseases.	**4,5, 6**
	14. Understand common medications and therapeutic modalities used in endocrine diseases and formulate appropriate treatment protocols	**4,5**
	15. Compare and contrast different insulins and distinguish appropriate utilization for a variety of clinical presentations	**4,5, 6**
	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	**1,3,5**
Gastrointestinal section 10 lectures	**1. Recognize and utilize appropriate gastrointestinal terminology and abbreviations.**	**1,2,3,4,5**
	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**
	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**
	7. Interpret specific diagnostic testing to diagnose common canine and feline gastrointestinal diseases	**3,5, 6**
	8. Understand common gastrointestinal drug classifications and formulate a treatment protocol for a variety of gastrointestinal diseases	**4,5**
	9. Implement and critique treatment plans for a variety of canine and feline gastrointestinal diseases	**4,5, 6**
	10. Utilize current research to help with disease classification and treatments	**1,2,3,4,5**
	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,	**1,2,3,4,5**

	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.	
	12. Explain the prognosis for all of the above diseases	**4,5, 6**
	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**
Hepatobiliary Section 7 lectures	1. **Recognize and utilize appropriate hepatobiliary terminology and abbreviations.**	**1,2,3,4,5**
	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**
	6. Recall breed predispositions for common hepatobiliary diseases.	**1, 3 ,5**
	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. Interpret and explain specific diagnostic testing to diagnose common canine and feline hepatobiliary diseases	**3,5, 6**
	9. Understand common hepatobiliary drug classifications and formulate a treatment protocol for a variety of hepatobiliary diseases	**4,5**
	10. Implement and critique treatment plans for a variety of canine and feline hepatobiliary diseases	**4,5, 6**
	11. Utilize current research to help with disease classification and treatments	**1,2,3,4,5**
	12. Based on the presenting complaints, relevant history, PE findings and specific diagnostic testing, diagnose cases of: cholangiohepatis, 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 of the above diseases	**4,5, 6**
	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**
Emergency Lectures 5 hours	**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**
	3. Identify prognostic indicators for environmental emergencies	**4,5, 6**
	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	**1,2,3,4,5**

	diagnostic plan, including the criteria for exploratory laparotomy	
	7. Discuss the prognosis and treatment of SIRS and sepsis	4,5, 6
	8. Classify burns via depth and extent	1,2,5
	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
	11. Evaluation of the electrocution patient and the body systems affected	1,2,3,4,5
	12. Identify the patient that needs dialysis: indications for dialysis	1,2,4,5
	13. Describe the function of dialysis, and the different methods of performing dialysis	4,5
	14. Discuss dialysis complications and prognosis	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
	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 8 lectures	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
	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. Understand the mechanism of action and indications of non-chemotherapeutic cancer treatments	4
	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
	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 diagnosis is not yet available.	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
	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 be able to discuss the median survival times expected	1 2 3 4 6
	30. Know where to appropriately vaccinate a cat	1 2 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 8 lectures	**1. define primary, secondary, and reactive seizures.**	**1 2 5**
	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**
	5. 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.	**4 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**
	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**

XXII. Appendix 2: Course Schedule Small Animal Med 2 Spring 2020

Lect Time	Day/Dates	LECTURE TOPIC	Instructor
Week 1			
10:30	**Mon. 1/13**	**Cardiology Introduction** Physiology/PE/Auscultation	Corrigan
10:30	**Tues. 1/14**	CHF	Corrigan
10:30	**Wed. 1/15**	Congenital Diseases	Corrigan
8:30	**Thurs. 1/16**	Valvular Diseases	Corrigan
8:30	**Fri. 1/17**	Cardiomyopathies	Corrigan
Week 2			
8:30	**Mon. 1/20**	Cardiomyopathies	Corrigan
9:30	**Mon. 1/20**	Systemic and Pulmonary hypertension	Corrigan
10:30	**Tues. 1/21**	ECG Analysis	Corrigan
10:30	**Wed. 1/22**	Clinical Arrhythmias	Corrigan
9:30	**Thurs. 1/23**	Clinical Arrhythmias	Corrigan
Week 3			
10:30	**Mon. 1/27**	**GI:** Sick Patient Nutrition	Guttin
10:30	**Tues. 1/28**	Gastrointestinal Introduction	Guttin
11:30	**Wed. 1/29**	Oral/Pharyngeal Diseases	Guttin
11:30	**Thurs. 1/30**	Esophageal Diseases	Guttin
8:30	**Fri. 1/31**	Gastric Diseases	Guttin
Week 4			
10:30	**Mon. 2/3**	Gastric Diseases	Guttin
10:30	**Tues. 2/4**	Intestinal Diseases	Guttin
8:30	**Wed. 2/5**	Intestinal Disease	Guttin
8:30	**Thurs. 2/6**	Pancreas	Guttin
Week 5	**MB here**		

8:30	**Mon. 2/10**	Colonic Diseases	Guttin
8:30	**Tues. 2/11**	Chronic GI disease	Guttin
10:30	**Wed. 2/12**	**ECC**: SIRS and Sepsis	Guttin
11:30	**Thurs 2/13**	Behavior	Bain
9:30	**Fri. 2/14**	Behavior	Bain
Week 6			
11:30	**Mon. 2/17**	**Clinical Neurology** Neuromuscular disease	Narak
8:30	**Tues. 2/18**	Seizures	Narak
8:30	**Wed. 2/19**	Encephalopathies: congenital and degenerative	Narak
9:30	**Wed. 2/19**	Encephalopathies: inflammatory, infectious, and neoplastic	Narak
9:30	**Thurs. 2/20**	Encephalopathies: stroke and traumatic brain injury	Narak
8:30	**Fri. 2/21**	Myelopathies: acute spinal cord injury	Narak
9:30	**Fri. 2/21**	Myelopathies: congenital and degenerative MyelOPOLY!!!	Narak
Week 7			
10:30	**Mon 2/24**	Burn and Electrocution/ Environmental ER	Guttin
10:30	**Tues. 2/25**	Environmental ER	Guttin
8:30	**Wed. 2/26**	Transfusion med EXAM MATERIAL ENDS	Corrigan
9:30	**Thurs. 2/27**	**Endocrinology**: Hypothyroidism	Corrigan
9:30	**Fri. 2/28**	Hyperthyroidism	Corrigan
Week 8 **8:30**	**Midterm** **Fri. 3/6**		SJH
Week 9			
9:30	**Wed. 3/11**	Hypoadrenocorticism	Corrigan
Week 10			
8:30	**Mon 3/16**	Hyperadrenocorticism	Corrigan

8:30	**Tues. 3/17**	Diabetes** Reverse Class!	Corrigan
10:30	**Wed. 3/18**	DKA	Corrigan
9:30	**Fri. 3/20**	DM questions/practice	Corrigan/Buckland
Week 11			
10:30	**Mon 3/23**	Additional Endocrinopathies	Corrigan
10:30	**Tues. 3/24**	**Hepatic Introduction:** Patient Presentations	Guttin
8:30	**Wed. 3/25**	Biliary Diseases	Guttin
11:30	**Thurs. 3/26**	Feline Hepatic Lipidosis	Guttin
Week 12			
9:30	**Mon. 3/30**	**Clinical Oncology-**Introduction to Oncology	K Johnson
8:30	**Tues. 3/31**	Chemotherapy	K Johnson
9:30	**Tues. 3/31**	Radiation Therapy	K Johnson
8:30	**Wed. 4/1**	Lymphoma	K Johnson
8:30	**Thurs. 4/2**	STS/MCT	K Johnson
9:30	**Thurs. 4/2**	HSA	K Johnson
8:30	**Fri. 4/3**	OSA	K Johnson
9:30	**Fri. 4/3**	Cases	K Johnson
Week 13			
8:30	**Wed. 4/8**	Toxic Hepatic Injury	Guttin
10:30	**Thurs. 4/9**	Infectious Liver Diseases	Guttin
Week 14			
8:30	**Tues. 4/14**	Inflammatory Liver Diseases	Guttin
11:30	**Wed. 4/15**	Vascular Diseases	Guttin
11:30	**Thurs. 4/16**	Hepatic Encephalopathy	Guttin
Week 15			
8:30	**Mon. 4/20**	Tinkerbell	Corrigan
9:30	**Mon. 4/20**	Tinkerbell	Corrigan

Week 16	**Finals** **Mon. 4/27**		SJH

SVM Course Code: _LAMS 541_____
Course Director: ___Dr. Kerri Nigito and Dr. Brian Butler_____
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Professional Development I Lectures: 1. Personal Budgeting, Finance and Loans_ 2. Intro to EBVM and Research at SGU_	Professional Development I Lectures via Panopto: 1. Personal Budgeting, Finance and Loans 2. Intro to EBVM and Research at SGU Readings: 3. Approach to E-Learning in the Second Half of the Term: Tips & Techniques Part 1: 2 Tip sheets	March 23-29	For those students who will not meet with their Faculty mentor this term, please ONLY submit your wellness regimen on Sakai. **Due: April 15th, 5:00pm AST**
Professional Development I Lectures: 1. Approach to 2nd half of the term 2. Research Possibilities at SGU	Professional Development I Lectures via Panopto: 1. Research Possibilities at SGU Readings: 1. Approach to E-Learning in the Second Half of the Term: Tips & Techniques Part 2: 2 Tip Sheets	March 30-April 5	
Professional Development I Lectures: 1. Professional Etiquette and Class Code of Conduct 2. Research Methods	Professional Development I Lectures via Panopto: 1. Professional Etiquette and Class Code of Conduct 2. Research Methods	April 6-April 12	As a class use the google doc link provided to submit a list of professional and behavior guidelines to be upheld by your class which will be posted on your class's Facebook page Open: April 6, 8:00am AST **Due: April 19th, 11:00pm AST** Submit the in-class activity for the "Research Methods" Seminar in the Assignment folder for "Research Methods"

			Open: April 6th, 8:00am AST Due: April 13th, 11:00pm AST Participation Credit
Professional Development I Lectures: 3. Responsible Conduct of Research in Veterinary Medicine 4. Scientific Inquiry	Professional Development I Lectures via Panopto: 3. Responsible Conduct of Research in Veterinary Medicine 4. Scientific Inquiry	April 13-April 19	Post the in-class activity for the "Scientific Inquiry" in the Assignment folder for "Scientific Inquiry" Open: April 13th, 8:00am AST **Due: April 20th, 11:00pm AST** Participation Credit
Professional Development I Lectures: 5. Wellness Check-in	Professional Development I Lectures via Panopto: 5. Wellness Check-in	April 20-April 26	
Total lectures: 9	Total lectures (Panopto): 9		

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = _Pass/Fail__ *Total points breakdown:* Wellness Regimen Assignment Externship Experience Assignment	Total points = _Pass/Fail__ *Total points breakdown:* Wellness Regimen Assignment Externship Experience Assignment

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. _____
2. _____
3. Etc.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Small Animal Medicine and Surgery

Introduction to Clinical Practice *SYLLABUS* (1 credit)

SAMS 526 TERM 5

Spring 2020

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Office Hours: By appointment

Other faculty member names, credentials, *Ranks*, email addresses for each
Staff member names, credentials, title, email address is applicable

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Danolar McSween	Medical Record Officer I	dmcsween@sgu.edu

II. Course location

Lectures: Sis Hall West

Clinic rotations: Small Animal Clinic
Communication skills rotations: Upper St. Andrews Hall

All clinic rotations will occur at the Small Animal Clinic.
Report to the Conference room at the Small Animal Clinic at 8:30am. Please do not crowd into the waiting room of the SAC.
Rounds will occur in the SAC conference room.
Student parking—Due to limited space, we ask that you do not park in the Small Animal Clinic parking lot.

III. Prerequisite and/or co-requisite courses

Current 5th term students

IV. Required resources (texts, journal articles, course notes, laptop specs, etc.)

Notes from previous terms

A video link is provided under the Resources section on sakai of an example of an interview, please review it before communication skills lab.

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

Textbook of Veterinary Diagnostic Radiology	D. Thrall	6th ed., 2013
Textbook of Veterinary Diagnostic Radiology (E-Book)	D. Thrall	6th ed., 2013
Small Animal Internal Medicine	R. Nelson & C.G. Couto	5th ed., 2014
Small Animal Internal Medicine (E-Book)	R. Nelson & C.G. Couto	5th ed., 2014
Textbook of Veterinary Internal Medicine Expert Consult	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Textbook of Veterinary Internal Medicine (E-Book)	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Fundamentals of Small Animal Surgery	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Fundamentals of Small Animal Surgery (E-Book)	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Small Animal Surgery	T. Welch Fossum	4th ed., 2013
Small Animal Surgery with Expert Consult Access	T. Welch Fossum	4th ed., 2013
Small Animal Surgery (E-Book)	T. Welch Fossum	4th ed., 2013
Veterinary Surgical Preparation and Protocol	C. Pasquini	2011

VI. Special accommodation

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

VII. Other requirements

All students should also keep in mind that the Small Animal Clinic is a 24 hour clinic that provides emergency services as well as preventative health care, surgical services, and internal medicine services. This means that the schedule can change abruptly as a result of multiple emergencies, walk-in patients, and/or scheduling changes. So be prepared to "go with flow".
Also, please remember that the clinicians' schedule, number of hospitalized patients, and appointments will vary week from week. No two groups will have the exact same experience. No two days in veterinary medicine are ever the same!

VIII. Course rationale (catalogue course description)

As a continuum of the problem-oriented medical record (POMR) skills learned in SAMS 515 and LAMS 502, the student practices and refines methods of incorporating physical examination, historical information collection, and development of problem lists based on current clinical cases from the Small Animal Clinic. Client relations and communication skills are emphasized. Creation of the medical record and the importance of clinical practice management are discussed and practiced by the student.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to:
Collect historical data from clients and perform general physical examination/restraint on pets in a clinic setting in a professional manner.

Generate a prioritized problem list, discuss differential diagnoses for problems and develop an appropriate therapeutic plan for patients (Reinforce the Problem Based Learning Approach).

Complete medical records and SOAP assignments in a timely and accurate manner using POMR and/or SOAP formats.

Conduct client interviews, 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

X. Lesson-level outcomes

Lecture 1. Overview of SAMS 526

Students should be able to:
Review and discuss writing medical records using the SOAP format
Discuss the DAMNITV scheme
Discuss Problem based learning
Review and discuss the Calgary-Cambridge Guide for communication.

Clinic Rotations

Collect historical data from clients, perform physical exams on owned patients in a clinical settings
Generate problem lists and Differential Diagnoses lists
Develop Diagnostic plans and therapeutic plans
Demonstrate proficiency in medical record writing and keeping
Complete and submit written SOAP assignments in a timely manner

Communication Skills lab

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 on E-value (where applicable)

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SVM program level outcome
Collect historical data from clients and perform general physical examination/restraint on pets in a clinic setting in a professional manner.	**B.1.** Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities **/ Core Professional Attributes** **B.2.** Demonstrate, evaluate, and model ethical and responsible behavior in relation to animal care and client relations, such as, honesty, respect, integrity and empathy **/ Core Professional Attributes**

	C.8. Demonstrate and model effective client communication and ethical conduct / **Core Clinical Competencies** **A.1.** Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals /**Core Medical Knowledge** **C.1**. Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis / **Core Clinical Competencies**
Generate a prioritized problem list, discuss differential diagnoses for problems and develop an appropriate therapeutic plan for patients (Reinforce the Problem Based Learning Approach).	**A.3.** Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases /**Core Medical Knowledge** . **A.4.** Explain the relationship between disease processes and clinical signs /**Core Medical Knowledge**. **A.9.** Apply the principles of veterinary public health for the promotion of human and animal health /**Core Medical Knowledge** **B.1.** Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities **/ Core Professional Attributes** **A.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 /**Core Medical Knowledge**. **C.2.** Create comprehensive treatment plans / **Core Clinical Competencies** **C.3.** Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare / **Core Clinical Competencies** **C.4.** Analyze, design and execute appropriate plans for basic surgery and surgical case management / **Core Clinical Competencies** **C.5.** Analyze, design and execute appropriate plans for medical case management / **Core Clinical Competencies** **C.6.** Analyze, design and execute appropriate plans for emergency and critical care case management / **Core Clinical Competencies**
Complete medical records and SOAP assignments in a timely and accurate manner using POMR and/or SOAP formats	**A.6.** Apply multidisciplinary scientific knowledge to clinical situations, and understand evidence-based veterinary medicine. /**Core Medical Knowledge** **B.3.** Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary

	team / Core Professional Attributes
Conduct client interviews, participate in small group interactions including giving and receiving constructive and specific feedback from their coaches, peers, and simulated clients	**B.1.** Demonstrate, evaluate, and model effective communication with clients, the general public, professional colleagues and responsible authorities **/ Core Professional Attributes** **B.3.** Demonstrate, evaluate, and model leadership, teamwork and conflict resolution skills as a member of a multidisciplinary team **/ Core Professional Attributes** **B.6.** Demonstrate and model self awareness including understanding personal limitations and willingness to seek advice **/ Core Professional Attributes** **B.8.** Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences **/ Core Professional Attributes** **C.8.** Demonstrate and model effective client communication and ethical conduct / **Core Clinical Competencies**
Develop self-assessment techniques and be able to reflect on the interviews and what can be done to improve their communication skills	**B.4.** Model lifelong continuing education and professional development **/ Core Professional Attributes**

XII. Course Schedule

Lecture 1. Overview of SAMS 526.
Date: 20th January 2020
Time: 5:30pm-6:20pm
Location: Sis Hall West
Lecturer: Dr. Wayne Sylvester

Lecture 2. Overview of Communication
Date: 21st January 2020
Time: 4:30pm-5:20pm
Location: Sis Hall West
Lecturer: Dr. Lauren Nicki Wise

Clinic Rotation Schedule

SAMS 526 Introduction to Clinical Practice Spring 2020
Groups for Clinic Rotations
Location: Small Animal Clinic
Days: Wednesdays and Fridays
Time: 8:30am-12:30pm

Date	GROUPS
Wednesday 22nd January	Groups A1-A4
Friday 25th January (VEA Exam)	No Rotations
Wednesday 29th January	Groups A1, A2, A9, C9
Friday 31st January	Groups A5-A8
Wednesday 5th February	Groups C1-C4
Thursday 6th February	Groups C1-C4
Wednesday 12th February	Groups B1-B4
Friday 14th February	Groups B1-B4
Wednesday 19th February	Groups B5-B8
Friday 22nd February	No Rotations (Ophtho Lab)
Wednesday 26th February	Groups C5-C8
Friday 28th February	Group C5-C8
Wednesday 4th March	Groups A5-A8
Friday 8th March	No Rotations (a mid-term exam in pm)
Wednesday March 11th & Friday March 13th No Rotations	No Rotations Mid-Term Exams week
Wednesday 18th March	Groups C5-C8
Friday 20th March	Groups C1-C4
Wednesday 25th March	Groups B5-B8
Friday 27th March	No Rotations (Dentistry Lab)
Wednesday 1st April	Groups A1-A4
Friday 3rd April	Groups A5-A8
Wednesday 8th April	Groups B1-B4
Friday 10th April	No Rotations (Public Holiday)
Wednesday 15th April	Groups B5-B8
Friday 17th April	Groups A3, A4, A9, C9
Wednesday 22nd April	Groups A9, C9
Friday 24th April	Make Up Day

Clinical Communications Skills Labs Schedule (will be posted under the Resources Section on sakai and is available upon request)
Venue: St. Andrews
Days: Wednesdays, 9:30am-12:30pm

GROUPS listed should report to the Sim Lab at 8:30am for Clinical Communications, dressed in professional attire

Date	**Groups**

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

Grading scale: This course is pass/fail.

a. Types of assessment:

Formative assessment:

i. Participation in morning rounds at the clinic from 8:30am-9:00am
ii. Self-evaluation and peer evaluation during communication skills lab

Summative assessment:

iii. SOAP writing (one before mid-term and one after mid-term) 50%

iv. Clinical Performance Evaluations/Direct Observation of Procedural Skills (DOPS). Each clinician will assess each student as they consult on cases in small groups. 50%

b. Rubric for Student assessment for SAMS 526 for summative assessments

Rubric for Assessment for SAMS 526

Name of Student_____

Name of Clinician_____

Date(s) of Rotation_____

	Meets Expectations 4	Partially Meets Expectations 3	Occasionally Meets Expectations 2	Does Not Meet Expectations 1
Accurate complete history and physical examination	Students asks pertinent history questions related to their individual patient, obtains a fairly thorough history Good physical exam skills, kept to a routine or systematic approach, completed a thorough PE, fully completed the PE form	Student asked some questions related to their individual patient. Satisfactory physical exam skills, completed a thorough PE but a bit sporadically (no systematic approach), partially completed the PE form	Student asked few history questions, mostly related to the individual patient, does not obtain a thorough history. Inadequate physical exam skills, did not complete a thorough PE on the patient, did not follow a systematic approach, did not complete the PE form	Student did not ask appropriate questions their patient. Poor physical exam skills, did not know how to perform a PE, or very minimal ability to perform the skills required, did not complete the PE form
Patient care – ability to conscientiously provide relevant therapeutic care and treatments; identifies trends and identifies/initiates	Consistently conscientious in providing relevant advice/care to patient. Attentive to primary needs of patient/client. shows interest in other cases	Provides care to patient most times as directed, but little creative initiative to recommend relevant measures to maximize patient health	Needs improvements; occasional oversights; poor organization to cause possible neglect/harm; inadequate care or administration of treatment	Lack of interest in needs of patients. Through disinterest the patient fails to receive adequate management plan; poor attention to patient needs; fails to see obvious/new problems

improvements in management of patient to address critical needs of owner	and provides valuable input into patient health to assist owner in improving patient outcome			
Knowledge base and clinical reasoning skills	Good knowledge base, able to identify thorough problem lists, creates differential diagnosis lists and comprehensive plans (treatment or diagnostic) *where applicable	Has basic knowledge base, able to identify obvious/major problems, could develop a differential list and plan, however, missing some pf problems/differentials/plans	Inadequate knowledge base, could not identify or discuss obvious/major problems, could not develop a differential list or appropriate plan (treatment or diagnostic)	Did not display their knowledge base, failed to identify problems based on their physical exam, unable to develop a patient plan
General clinical skills performance (medical math, drug administration, sample collection, surgical skills)	Easily and competently performs clinical tasks after instruction from clinician, competent in calculating and/or administering drug therapy	Was able to perform fundamental clinical tasks after instruction from clinician, minor areas of improvement needed. Partially competent in calculating and/or administering drug therapy	Often unable to perform fundamental clinical tasks, would require major improvement to be competent in the skill. Unable to properly calculate and/or administer necessary drug therapy	Was unable to perform fundamental clinical tasks even after instruction from clinician, unable to properly calculate and/or administer necessary drug therapy

Client Communications	Good effective client communication in both written and verbal contact, clear concise discharge instructions for client	Adequate communication skills overall; considering both written and verbal contact. Minor areas for improvement with discharge instructions	Needs to improve communication skills or owner does not understand instructions or complain that they do not know what is happening with their animal/s	Poor client communication skills or does not take opportunity to communicate with clients; frequent missed opportunities to get relevant information to owner or to get message across; poor discharge instructions
Professionalism, Participation and Preparedness	Active participation, answered questions posed by clinician, worked well with group members. Student came prepared with all necessary equipment, had clearly reviewed resources provided, was on time. Student behaves in a professional manner throughout session, no improvement necessary	Adequately participated, answered few questions, worked well with group members. Student was missing no more than 1 item of required equipment, came prepared to answer some questions, but clearly had not reviewed material recently, was on time. Student's professional behavior was adequate and minor areas of improvement is noted	Participated minimally, answered very few questions and only when specifically prompted, did not work well with group members. Student was missing more than 1 item of required equipment, had not prepared for this rotation and had clearly not reviewed material recently if at all. Student's professional behavior was lacking and would require major changes to be adequate	Did not participate, did not work well with group members. Student did not come prepared, clearly had not reviewed materials, arrived late. Student did not behave in a professional manner during the visit
Medical records and SOAP	Medical records are completed accurately, in a timely manner and well	Medical records are complete for the most part but there are minor deficiencies in the data recorded	Few sections of the medical records are complete, there are major errors /discrepancies in	Consistently fails to properly use SOAP and DAMNITV format; records do not follow a logical order, the records are inaccurate, incomplete,

	organized; no loose sheets of paper; good use of SOAP and DAMNITV formats with all data recorded.	and/or omissions, mostly adhere to SOAP and DAMNITV format	the data. Occasionally the student follows the SOAP and DAMNITV format	disorganized and untidy; with loose sheets of paper with no patient identification, dates or signatures

Comments

_____
_____
_____
_____
_____
_____

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 medicine, surgery and emergency rotation he/she will be completing. 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.

Instructor's expectations of the student

The student is expected to read the WHOLE syllabus before the first lecture and rotation session.

Students are expected to read the Calgary-Cambridge Guide before attending the Communication Skills Laboratory.

Expectations of the Student for Clinical Rotations include but are not limited to:

a. Participation
c. Teamwork
d. Professionalism
e. Knowledge of SOAP and POMR
f. Basic ability to collect history from pet owners and perform physical examinations
g. Basic knowledge of medical terminology
h. Be prepared—appropriate attire, equipment/supplies, mentally prepared
i. Punctuality

XV. Professionalism statement

Students are expected to carry themselves in a professional manner in accordance with AVMA professionalism competency. Professionalism is graded in every rotation.

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

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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.

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

Lecture attendance policy: It ism recommended that students attend lecture.
Laboratory session attendance policy: Attendance to all rotation days is MANDATORY. An electronic medical excuse needs to be completed if the student is not able to attend on any rotation day. The course director and main contact of the rotation need to be informed as well.
Please refer to the 2016-2017 Student Manual pages 101-103 for absence reporting policies and medical/non-medical excuse submission procedures.

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

XVIII. ExamSoft policy

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

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:
3. 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.
4. Examinees are responsible for downloading and registering the latest version of SofTest on their laptop prior to exam day. Once SofTest has been successfully downloaded, examinees are strongly encouraged to familiarize themselves with the software by downloading and taking practice exams.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from ExamSoft Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams only in the examination venue and not in
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or

may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to

37. a proctor. During the last ten minutes of the exam, examinees must remain seated
38. until dismissed.
39. Examinees found violating any of the Examination Policies and Procedures including
40. attempting to disable or tamper with SofTest's security features will be subject to
41. academic disciplinary action.
42. 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

*No other personal belongings will be permitted.

XIX. Copyright policy (if applicable):

Appendices (if applicable):

SVM Course Code: __SAMS 527_____
Course Director: __Dr. Turitto
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Clinical Skills Covered:	*Revised Clinical Skills:	Weekly/rotation schedule:	Assessment Schedule:
Spay Procedure Skills: Perform a Spay procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse • Apply and carry out general operating room procedures • Demonstrate correct patient and surgeon aseptic surgical preparation • Use aseptic technique throughout the procedures • Identify, select and use proper instrument handling • Select and demonstrate suture patterns and knots • Demonstrate adequate tissue handling • Select suitable suture materials • Demonstrate the duties	Videos: • In place of Spay 1: o Proper Open Gloving + Patient Prep Technique Vs Improper Technique (Identify 10 mistakes made) • In Place of Spay 2: o Proper Scrubbing, Gowning, Closed Gloving Vs Improper Procedure (Identify 10 mistakes made) • In place of Spay 3: o Proper Quarter Draping of patient Vs. Improper quarter draping of patient (Identify 10 Mistakes) • In place of Spay 4: o Proper Overdraping of patient Vs. Improper Overdrape placement (Identify 10 mistakes) • Make Up Spays, Next term	Spay 1: A, B,C Spay 2: A,B,C Spay 3: A,B,C Spay 4: A,B,C Group A,B,C	**Video 1:** **23rd March-30th March** 10 Points **Video 2:** **30th March- 6th April** 10 points **Videos 3:** **6th April-13th April** 10 points **Video 4**: **13th April- 20th April** 10 Points **Fall 2020**

Medical Records (All Groups) Skills: Demonstrate proficiency in medical record writing and keeping: Write a complete and appropriate anesthetic plan including fluid therapy and perioperative pain management Select the appropriate anesthetic equipment and check it before use Demonstrate proper administration of preanesthetic medication by intramuscular injection	Write surgery report for online video already posted to Sakai	Groups A,B,C	**20th April- 27th April** 10 Points
Dentistry (All Groups) Skills: Practice techniques used in routine dentistry: Perform full mouth radiographs and interpret normal dental and periodontal anatomy. Be exposed to proper use of hand instruments, machine scaling, polishing, nerve blocks, gingival flaps, tooth sectioning and extractions of single and multi- rooted teeth, including removal of alveolar bone in canine and feline cadaver heads.	make-up		During term 6 students with interest can join term 5 for their labs

Orthopedics Lab (All Groups) Skills: Practice techniques uses in osteosynthesis : Apply Pins, Plates, Cerclages and external fixators to fractures in plastic bone models	make-up		During term 6 students with interest can join term 5 for their labs Possibility to take orthopedic selective
Anesthesia for Spays (All Groups) Perform sedation and or anesthesia in healthy female canine patients for Spays	Monitor Simulated Cases. Record on Anesthesia Record for 30 minutes		**27th April- May 4th** 20 Points
Professionalism:	Peer Review Evaluations on ExamSoft	Groups A,B,C Peer Review Evaluations on ExamSoft	**Open 23rd March-15th April** **10 Points**
Total lab hours: 30+ hours			Total hours of student commitment:15 hours

Assessment Summary:

Original Percentage Allocation:	**Revised Percentage Allocation**
Original percentage breakdown: **I. Grading and assessment policy, and grading rubrics** • *Reports*: to be completed appropriately in a timely fashion **20%** • Surgical Report due on the discharge day in the patient's medical record (**5%**) • SOAP (Four graded) due by **8:30 am** on the discharge day (**15%**) • *On-going assessments:* Four roles performed during spays will be graded **75%** (using the rubrics as a guideline) • *Professionalism:* It will be graded throughout the term by peers, staff and faculty. **5%** Two peer assessment assignments will be posted and due by midterms and final weeks	*Revised percentage breakdown:* • Surgery Videos **40%** • Surgery Report **10%** • Anesthesia **20%** • Professionalism/Peer Review **10%** • Make-Up Spay, Fall 2020 **20%**

Learning outcomes: please list any CLO, LLO's, or clinical skills which were omitted below:

**Due to condensed course content, it is expected that LO's will be prioritized as necessary.*

1. Dentistry Lab, to be reviewed
2. Orthopedics Lab, to be reviewed

- **Contingency plan for Fall 2020:**

Instead of each group performing 4 different roles in surgeries, each group member will perform 2 surgeries. For each of the surgeries, 2 students will be surgeons and 2 students will be anesthetists.

52 total surgeries will take place on 6 different days. This schedule will not affect the students beginning 6th term schedule, and will allow them not to miss their surgical experience.

Proposed dates:

- Tuesday, 18th August 2020 (PM Sx)
- Thursday, 20th August 2020 (PM Sx)
- Saturday, 22nd August 2020 (AM Sx)
- Tuesday, 25th August 2020 (PM Sx)
- Thursday, 27th August 2020 (PM Sx)
- Saturday, 29th August 2020 (AM Sx)

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

***JUNIOR SURGERY AND ANESTHESIA LABORATORY* (2 credits)**

SAMS 527 TERM 5

Spring 2020

I. Course Faculty and Staff Information

Course Director: Marta Lanza-Perea, DVM, MRCVS,MSc,
(on sabbatical) Associate Professor

Acting Course Director: Emily Turitto, DVM
Ray and Jan Sis Hall, ground floor
(Schedule appointments via e mail)

Participating Faculty:

Surgery:

- Keith Kalasi, DVM. Instructor (KKalasi@sgu.edu)
- Heidi Janicke, DVM, PhD, MRCVS, Dipl. ECVS, SFHEA. Professor (hjanicke@sgu.edu)
- Tara Paterson, DVM, MSc. Associate Professor (tpaterson@sgu.edu)
- Adria Rodriguez DVM, MSc, CVA, CVCH. Associate Professor (airodriguez@sgu.edu)
- Rodolfo Bruhl Day, DVM,ChD.SAS, Dipl.CLOVE,EdD. Professor (rbruhl-day@sgu.edu)
- Tomas Guerrero, DVM, Professor (tguerrero@sgu.edu)
- VP's: Laura Major, DVM
  Katleen Morris, DVM
  Tatiana de Oliveira, DVM

Anesthesia:

- Flavia Restitutti DVM,PhD (frestitu@sgu.edu)
- Mercedes Miccio, DVM mmiccio@sgu.edu
- Mrs. Naudia Dundas, Demonstrator ndundas@sgu.edu
- VP's: Kip Lemke, DVM, MsC DACVAA
  Inga Catalina Cruz Benedetti DVM, MsC, DECVAA
  Rachel Bennett DVM, PhD, DACVAA

Technicians

- Registered Veterinary Technician: Ms. Elizabeth Peach epeach@sgu.edu
- Veterinary Technician: Mr. Jakobus Louw jlouw@sgu.edu
- Veterinary Technician: Mr. Quacy Matthew QMatthew@sgu.edu
- Veterinary Technician: Ms. Lydia Williams LWillia8@sgu.edu
- Veterinary Technician: Mr. Jude Modeste jmodeste@sgu.edu

Community Dog Recruitment Coordinator: Mr. Quacy Matthew & Ms. Diane Basset(assistant)

II. Course location

The laboratory sessions take place in the Veterinary Surgical Facilities at the Ray and Jan Sis Hall Building each Tuesday and Thursday. Animal housing, pre-operative evaluations and post-operative care all occur in the same building. The lecture portion will take place in the regular classroom venue

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 2020
- Veterinary Surgery: Small Animal, K Tobias and S Johnston
- Small Animal Surgery, T Welch Fossum, 4th Ed, 2013
- Fundamentals of Small Animal Surgery, FA Mann, Constantinescu & Hun-You, 2011

V. Recommended resources

- Veterinary surgical preparation and protocol, C Pasquini, 2011
- Course notes and videos from term 4 SAMS 514 (Intro to Surgical Skills) and SAMS 520 (Anesthesia)
- The Library on the SGU Carnage is a great resource to access materials and journal articles.

VI. Special accommodation

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

VII. Other requirements

- **Backpacks, book bags, food, or drinks are not allowed in the laboratory rooms**. There are lockers outside the lab to place your belongings. Bring a padlock to secure your items if you wish.
- A minimal amount of course material pertinent to the specific laboratory is permitted inside the lab (written notes, summaries, charts, whatever may help you to do a good job)
- Stethoscope, calculator, pen, thin-tip permanent maker are highly recommended.
- Conversations should focus on the tasks at hand and should be kept at a reasonable volume to minimize disturbance to other groups and patients.
- Students (other than the anesthetist) will be standing for the entire laboratory period, the reason why good quality footwear is essential to minimize leg and back strain.
- Students are expected to wear surgical scrub clothing at all times and closed toe comfortable and protected footwear with hard soles, and no upper holes (i.e. Dansko, Clogs). Sneakers may also be used.
- Please refer to OSHA (Occupational Safety and Health Administration) recommendations using the following link: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=25439
- On surgery lab days, no person is allowed inside the surgery suite without cap and mask.
- **It is highly recommended that students have breakfast to prevent low glucose levels during surgery sessions.**

VIII. Course rationale

The goal of this course is to provide the student with he opportunity to put into practice in live patients what has been learned previously in the classroom and in dry labs. Student's should get familiarized and have a practical understanding of surgical etiquette, general operating and anesthesia procedures. The ultimate goal is to provide clinical, "hands on", experience by anesthetizing dogs undergoing elective surgical procedures (castration and ovariohysterectomy).

IX. Course-level outcomes

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

- Present surgical cases and execute peri-operative case management for Castration and Spay laboratories
- Perform a Spay procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse and a Castration procedure in two of those roles
- Perform sedation and or anesthesia in healthy male and female canine patients for castrations and Spays
- Demonstrate proficiency in medical record writing and keeping
- Professionally perform and contribute in a team environment
- Perform the minimum ophthalmic data base
- Practice techniques used in routine dentistry
- Practice techniques uses in osteosynthesis

X. Lesson and Laboratory Level Outcomes (LLOs)

Course Level Outcomes	**Lab Learning Outcomes:**
1. Present surgical cases and execute peri-operative case management for Castration and Spay laboratories	1. Demonstrate a complete physical examination on a dog 2. Demonstrate a preanesthetic assessment including physical exam and collection of relevant medical history and diagnostic information 3. Discuss and review surgical cases during rounds 4. Use appropriate communication with surgeons regarding the perioperative patient condition 5. Assess a patient during recovery from anesthesia until complete recovery 6. Organize and demonstrate patient care in the postoperative period and to transfer a patient to the care of a co-worker if necessary 7. Assess postoperative pain and plan analgesic treatment as necessary
2. Perform a Castration procedure in healthy canine patients as a surgeon, assistant surgeon and/or scrub nurse	1. Employ general operating room procedures 2. Execute correct patient and surgeon aseptic surgical preparation 3. Demonstrate aseptic technique throughout the procedures 4. Identify, select and use proper instrument handling 5. Select and execute suture patterns and knots 6. Demonstrate adequate tissue handling

	7. Select suitable suture materials 8. Demonstrate the duties of the supporting roles in the assistant surgeon or scrub nurse positions
3. Perform sedation and or anesthesia in healthy male canine patients for Castrations	1. Prepare a complete and appropriate anesthetic plan including fluid therapy and perioperative pain management 2. Select the appropriate anesthetic equipment and check it before use 3. Demonstrate proper administration of preanesthetic medication by intramuscular injection 4. Demonstrate appropriate placement of an intravenous catheter 5. Demonstrate induction of general anesthesia by intravenous drug injection 6. Demonstrate placement of an endotracheal tube 7. Demonstrate use an anesthetic machine for maintenance of inhalational anesthesia 8. Calculate and administer perioperative fluid therapy 9. Demonstrate local nerve blocks if indicated 10. Determine depth and adequacy of anesthesia and intraoperative analgesia with and without the aid of monitoring equipment
4. Perform a Spay procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse	1. Apply and carry out general operating room procedures 2. Demonstrate correct patient and surgeon aseptic surgical preparation 3. Use aseptic technique throughout the procedures 4. Identify, select and use proper instrument handling 5. Select and demonstrate suture patterns and knots 6. Demonstrate adequate tissue handling 7. Select suitable suture materials 8. Demonstrate the duties of the supporting roles in the assistant surgeon or scrub nurse positions
5. Perform sedation and or anesthesia in healthy female canine patients for Spays	1. Write a complete and appropriate anesthetic plan including fluid therapy and perioperative pain management 2. Select the appropriate anesthetic equipment and check it before use 3. Demonstrate proper administration of preanesthetic medication by intramuscular injection

	4. Demonstrate appropriate placement of an intravenous catheter 5. Demonstrate induction of general anesthesia by intravenous drug injection 6. Demonstrate placement of an endotracheal tube 7. Demonstrate use an anesthetic machine for maintenance of inhalational anesthesia 8. Calculate and administer perioperative fluid therapy 9. Demonstrate local nerve blocks if indicated 10. Determine depth and adequacy of anesthesia and intraoperative analgesia with and without the aid of monitoring equipment
6. Demonstrate proficiency in medical record writing and keeping	1. Write basic medical records (SOAPS, Surgery Reports, Anesthetic Record Sheet, Discharge Instructions, and Hospitalization Forms).
7. Professionally perform and contribute in a team environment	1. Demonstrate professionalism throughout all procedures
8. Perform the minimum ophthalmic data base	1. Practice the Schirmer's tear test 2. Practice the Fluorescein test 3. Use direct and indirect ophthalmoscopy 4. Examine the cranial nerves
9. Practice techniques used in routine dentistry	1. Perform full mouth radiographs and interpret normal dental and periodontal anatomy 2. Be exposed to proper use of hand instruments, machine scaling, polishing, nerve blocks, gingival flaps, tooth sectioning and extractions of single and multi- rooted teeth, including removal of alveolar bone in canine and feline cadaver heads
10. Practice techniques uses in osteosynthesis	Apply Pins, Plates, Cerclages and external fixators to fractures in plastic bone models.

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Please refer to Appendix 2 at the end

XII. Course Schedule and Laboratory Overview

Please see course schedule at the end of this document as an Appendix. It will also be posted in Sakai.

Laboratory overview:

Preparation for Laboratories

- Prior to each session, students are responsible for reviewing relevant class notes, textbooks, and any relevant materials from other courses in preparation for the laboratory.
- Each student is expected to be familiar with all aspects of the laboratory session prior to the start of the laboratory. Students are expected to follow surgical protocols during the laboratory session and to perform appropriate pre-operative and post-operative duties (including proper patient care) as required.
- All students are expected to bring forward skills attained in Term 4 in the Introduction to Surgery Skills and Anesthesiology courses.

Pre-laboratory Classroom Session

Check your schedule for pre-laboratory sessions, which will be held in the regular lecture classroom. The session will be pertinent to the upcoming laboratory. **Attendance to these sessions is mandatory.**

Laboratory Duration

Formal laboratory sessions start at 8:00 am and finish at or before 12:30 pm. Labs will start with the pre anesthetic physical examination completed between 7:30 and 8:00 am, with the pre-anesthetic medications administered before/by 8:00 am. Students are expected to be in appropriate attire, prepared, and ready to proceed with the laboratory.

Laboratory Groups

The class is divided into groups of 4. Each group of 4 students will rotate performing the duties of Surgeon, Assistant Surgeon, Scrub Nurse and Anesthetist. There will be 3 groups (A, B, and C) who will perform surgery every week either on a Tuesday or a Thursday.

Structure of the laboratory

- *Surgery portion:*

- Every Monday or Wednesday, each group of 4 students will be assigned a patient scheduled for surgery the following day. Students and instructors will meet at 5.30 pm in the Veterinary Surgical Laboratory (VSL) prep-room right after class. Each group will perform a

physical examination on their patient. During rounds, cases will be discussed and instructors will provide help and guidance in the Medical Record writing process.

- Every Tuesday or Thursday, students will meet the instructors in the VSL prep-room at 7.30 am to prepare for anesthetic induction and surgery.
- At 5:30 pm, students will return to the VSL kennel room and check their patients, perform a pain assessment, and decide about analgesic options under the instructors' guidance.
- The following Wednesday or Friday, students will come before 8:30 am to discharge their patients. Each group will need to perform a physical exam. Medications and preventatives will be labelled and made available. Each group will make sure that all the paper work and medical records have been filled out and submitted in a timely manner.

➢ *Anesthesia portion:*

- Every Monday and Wednesday, each student on anesthesia duty must arrive at the Veterinary Surgical Laboratory (VSL) prep-room at 5.30 pm. Each student will perform a preanesthetic assessment on the patient assigned to his/her group and prepare a complete anesthetic plan. A group discussion with the anesthesia instructor will follow, starting at 6.00 pm.
- Every Tuesday and Thursday, students must arrive at the VSL prep-room room at 7:30 am to set up the anesthesia station (anesthesia machine, breathing system and 'induction tray'), collect, and administer the preanesthetic medications to the patients between 7:45 and 8:00 am. The anesthesia student will be responsible for induction of anesthesia, patient monitoring, and detection and treatment of anesthetic complications perioperatively. Students must remain with their patient until complete recovery from anesthesia. If a student has to leave earlier, a technician or faculty has to be informed and someone has to be assigned to take over to supervise the patient until fully awake. At 5.30 pm, students must return to the VSL kennel room and check their patients, perform a pain assessment according to the **Short Form of the Glasgow Composite Pain Scale,** and make a decision regarding pain treatment for their patients

Patient Care

Even though students will be supervised by faculty and staff, students remain responsible for the care of their patient, from the moment the patient is assigned to the group up to the moment the patient is discharged. The highest standard of patient care is expected. Follow up telephone calls to patient's owners will be required 3 days after the surgery day to check on the patient's progress and to provide any client education as needed.

Animal Transport

Patients will be brought into the kennels by University staff, and will be delivered to their owners in the same way unless otherwise arranged by those in charge. Dogs usually arrive to the kennels sometime during Sunday.

General record keeping

Written records have to be legible, accurate, and complete. They are legal documents, so you shall not copy them later to look pretty, rather do it real-time as good as you can. Record keeping has to be such that it is possible for anyone to retrieve the needed information at any time by just reading the records (for example in the event of a retrospective study that entails consulting written records from previous years to collect scientific information). All records MUST BE completed in blue or black ink

The anaesthetic record sheet must be completed and placed in the designated mail box (mounted in the surgery suite) once the patient has recovered from anaesthesia. Specific instructions are provided in the JSAL manual in the sample record sheet. It will be graded as part of your "On-going assessment".

XIII. Grading and assessment policy, and grading rubrics

- *Reports*: to be completed appropriately in a timely fashion **20%**
  - Surgical Report due on the discharge day in the patient's medical record (**5%**)
  - SOAP (Four graded) due by **8:30 am** on the discharge day (**15%**)
- *On-going assessments:* Four roles performed during spays will be graded (using the rubrics as a guideline) **75%**
- *Professionalism:* It will be graded throughout the term by peers, staff and faculty. Two peer assessment assignments will be posted and due by midterms and final weeks **(**please read and refer to the professionalism in section XVI) **5%**

Grading scale:

The aim of this course is to ensure students are proficient and safe (to the level they are at) to perform the tasks.

This course is graded with a letter grade in accordance to the SGUSVM grading scale

DOPS **(**Direct Observation of Procedural Skills) are clinical proficiency tests and are graded different 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 on examsoft.

Rubrics are meant for student performance feedback, NOT for calculating grades. Different categories within a rubric have different weights associated depending on the importance of the skill.

There is a "Daily Performance" (pass/fail) element to the grading aside from the technical skills that MUST be passed in order to pass this course. "Daily Performance" refers to professional behavior, situational awareness, safe to perform procedure, collaboration with team members, and maturity. Students MUST pass that portion even if the technical skills grade is passed.

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.
- During the first half of the term using Rubrics from Examsoft, students will receive feedback. Think of it as a warm up / perform without added stress as this will not count for your final grade.
- After midterm exams, during spay rotations, Rubrics from Examsoft will be counted towards your final grade. Be aware that rubrics are used as guidelines and performance feedback, NOT for calculating grades. Pay attention to the instructor's comments and try to improve on comments they made.
- The SOAP grades are based on group effort. Every person in the group of 4 will receive the same grade per patient. The surgery report is an individual grade obtained when a student performs the OVH primary surgeon role. Grades for medical records and surgery reports will be available in the feedback sessions as the term progresses. (Check course schedule)
- 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 laboratory session. Lack of preparation is not acceptable for these patient-based exercises and can result in dismissal from the lab.

XIV. Recommended study strategies

It is recommended that the student keep on top of their preparations and review for each surgery day. 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. Students are expected to follow surgical protocols during the laboratory session and to perform appropriate pre-operative and post-operative duties (including proper patient care) as required.

All students are expected to bring forward skills attained in Term 4. Please practice suturing before coming to lab. You are responsible for supplying your own suture material and practice board.

Attend all mandatory/preparatory lectures and labs

The feedback sessions are a good way to check in and stay on track of expected results. Check the schedule to find out specific time and dates. Additional assistance or Office hours can be arranged via email with the course instructors (mperea@sgu.edu (sabbatical), eturitt1@sgu.edu) or the anesthesia team (frestitu@sgu.edu, mmiccio@sgu.edu) or with the appropriate instructor.

XV. Instructor's expectations of the student

- The student is expected to read and use the JSAL lab manual before each lab, as needed.
- Recognition and repeated avoidance of acceptable technique (e.g. breaking aseptic technique without correcting the error or without asking for assistance) will be considered enough to be dismissed from the Surgery Lab.
- 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.
- Students that may be pregnant or are pregnant should immediately inform the Course Director and/or the Instructors for safety purposes.
- 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 labs.
- Upon completion of this course, we would appreciate 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.
- Please note that the autoclave room is off limits to unauthorized personnel and students.

XVI. Professionalism statement

- Punctuality is expected for rounds, surgery days, post op checks and discharge duties.
- Cell phones are only allowed as calculators and should be switched off or in silent mode during lectures/labs. Ensure that all social media websites are logged off during class/ lab time.
- The use of laptops, tablets, etc. in the laboratory and classroom for purposes *other than* learning is not acceptable.
- Dress Code: Students are expected to wear scrubs, closed toe shoes and white coats when necessary. On surgery days students will wear clean scrubs, mask, surgical cap, booties and sterile gown

Hats, sandals, bandanas, sunglasses, shorts, backpacks and food or drinks are not allowed in any of the Junior Surgery Lab rooms

- Professional behavior in the classroom and laboratory facilities is expected at all times.

XVII. Attendance Policy

Should you miss a surgery laboratory session; a medical excuse will be expected. In case of attending conferences or attending to family issues that you know in advance, make arrangements with other groups so that you won't miss any labs and your group won't be disturbed. Check with the course director in advance. Failure to do so will result on an F awarded for that lab.

Be aware that the preparatory sessions, the ophthalmology, the dentistry and the orthopedic labs are part of this course. The same attendance is mandatory for those portions unless otherwise stated by the course director
If absence from individual classes, examinations, and 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 further details and absence reporting policies and medical/non-medical excuse submission procedures, please refer to the Student Manual.

XVIII. Policy Regarding Missing Examinations and/or Failure of Submission of Assignments

- Failure to submit the ovariohysterectomy assignments will result in the inability to do the first spay surgery and will award an "F" on that first rotation.
- Failure to submit the peer assessment assignments by the due date will result on an "F" grade for the professionalism section.
- Students who fail to appear for pre surgical rounds without a valid reason (see student manual: SGUSVM policy on an excused absence for students) will not be allowed to perform surgery the following day and will receive a score of "F" for that rotation.
- Missing post- operative checks without a valid excuse, will be reflected in the professionalism part of grading.

XIX. ExamSoft policy

- The Ongoing Assessments will be posted in Exam Soft after each surgery and released within a week.
- Please refer to the assessment forms posted in Sakai to have a clear idea of how your daily performance evaluations based on the nine clinical competencies will be made

by instructors. Each instructor will also write comments on your performance in the four different roles as necessary. Note these are meant to be used for feed back.

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 (to section XII)

Course Schedule:

Junior Surgery and Anesthesiology Laboratory Schedule Spring 2020

Week #		Date	Time	Lab	Groups	Location
1	Tue	21-Jan	8:30-12:30	Anesthesia. Intro/Review	A, B1-B4	Sx Lab
	Thu	23-Jan	8:30-12:30	Anesthesia. Intro/Review	B5-B8, C	Sx Lab
	Thu	23-Jan	5:30-6:20	JSAL: Lab PREP(1): Intro to Course	ALL	VSL Lecture Hall
2	Tue	28-Jan	8:30-12:30	Sx Prep/Instruments	A, B1-B4	Sx Lab
	Thu	30-Jan	8:30-12:30	Sx Prep/Instruments	B5-B8, C	Sx Lab
	Thu	30-Jan	4:30-5:20	JSAL Lab PREP (2): Patients , SOAPS, Castration		VSL Lecture Hall
	Thu	30-Jan	5:30-6:20	JSAL Lab PREP (2): Patients , SOAPS, Castration		VSL Lecture Hall
3	Tue	4-Feb	8:30-12:30	Castration (#1)	A	Sx Lab
	Thu	6-Feb	8:30-12:30	**No Lab: Independence Day**		
	Fri	7-Feb	12:30	Mandatory feedback sessions	A	Sx Lab, prep room
4	Tue	11-Feb	8:30-12:30	Castration (#1)	B	
	Thu	13-Feb	8:30-12:30	Castration (#1)	C	
5	Mon	17-Feb	12:30	Mandatory feedback sessions	B+ C	Sx Lab, prep room
	Tue	18-Feb	8:30-12:30	Castration (#2)	A	Sx Lab
	Thu	20-Feb	8:30-12:30	Castration (#2)	B	Sx Lab
	Fri	21-Feb	8:30-12:30	Ophtalmology Lab	B5-B8, C	Sx Lab
	Fri	21-Feb	1:30-5:30pm	Ophtalmology Lab	A, B1-B4	Sx Lab
6	Tue	25-Feb	8:30-12:30	Castration (#2)	C	Sx Lab
	Thu	27-Feb	8:30-12:30	Castration (#3)	A	Sx Lab
7	Tue	3-Mar	8:30-12:30	Castration (#3)	B	Sx Lab
	Thu	5-Mar	8:30-12:30	Castration (#3)	C	Sx Lab
8				MIDTERMS (NO LAB)		
9	Tue	17-Mar	8:30-12:30	Spay (#1)	C	
	Thu	19-Mar	8:30-12:30	Spay (#1)	B	Sx Lab
10	Tue	24-Mar	8:30-12:30	Spay (#1)	A	Sx Lab
	Thu	26-Mar	8:30-12:30	Spay (#2)	C	Sx Lab
	Fri	27-Mar	8:30-12:30	Dentistry Lab	A, B1-B4	Sx Lab
	Fri	27-Mar	1:30-5:30pm	Dentistry Lab	B5-B8, C	Sx Lab
11	Tue	31-Mar	8:30-12:30	Spay (#2)	B	Sx Lab
	Thu	2-Apr	8:30-12:30	Spay (#2)	A	Sx Lab
12	Tue	7-Apr	8:30-12:30	Spay (#3)	C	
	Thu	9-Apr	8:30-12:30	Spay (#3)	B	Sx Lab
13	Tue	14-Apr		**No Lab : Post Easter break**		
	Thu	16-Apr	8:30-12:30	Spay (#3)	A	Sx Lab
14	Tue	21-Apr	8:30-12:30	Spay (#4)	C	
	Thu	23-Apr	8:30-12:30	Spay (#4)	B	Sx Lab
15	Tue	28-Apr	8:30-12:30	Spay (#4)	A	Sx Lab
	Wed	29-Apr	8:30-12:30	Orthopedic Lab	B5-B8, C	Sx Lab
	Thur	30-Apr	8:30-12:30	Orthopedic Lab	A, B1-B4	Sx Lab
				Lab Closure		Ray and Jan Sis Hall

All laboratories are taught by Anesthesia faculty (Dr Restifo, Dr Miccio, Ms Dundas and VP's- Drs. Lemke, Benedetti and Bennett) and Surgery Faculty (Dr. Lanza-Perea, Dr. Turitto,Dr. Kalasi, Dr. Rodriguez, Dr. Janike, Dr. Paterson, Dr. Guerrero, Dr. Bruhl-Day and VP's- Dr Major, Dr Morris and Dr de Oliveira)
The JSAL prep lecture hours are taught by Dr. Turitto and Dr. Kalasi

The OPHTHALMOLOGY lab is taught by Dr. Bedford (VP)
The DENTISTRY lab is taught by Dr Francesca Ivaldi and Mr. Jim Merrit

FEEDBACK SESSIONS:

Mandatory feed back sessions will take place in the prep room of the lab unless otherwise stated.
All other sessions will be in the autoclave room or announced venue
The mandatory sessions will be in small groups to comment and guide you after your first SOAPS.

Tues	11-Feb	Group A	Mandatory	12:30-1:20
Mon	17-Feb	Group B+C	Mandatory	12:30-1:20
Mon	24-Feb	Group A+B	Voluntary	12:30-1:20
Fri	28-Feb	C	Voluntary	12:30-1:20
Mon	9-Mar	All Groups	Voluntary	12:30-1:20
			-	
Mon	23-Mar	Group C+B	Voluntary	12:30-1:20
Mon	30-Mar	Group A+C	Voluntary	12:30-1:20
Mon	6-April	Group B+A	Voluntary	12:30-1:20
Tues	14-Apr	Group C+B	Voluntary	12:30-1:20
Mon	20-April	Group A	Voluntary	12:30-1:20
Thur	30-April	All Groups	Voluntary	12:30-1:20

Appendix #2 (to sectionXI)

Alignment of Course Learning Outcomes with Program Learning Outcomes

1. Present surgical cases and execute peri-operative case management for **Castration and Spay laboratories**	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4, B5,B6,B7,B8 C1,C2,C3,C4,C5,C8,C9
2. Perform a **Castration** procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C4,C5,C8
3. Perform sedation and or anesthesia in healthy male canine patients for Castrations	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6, C1,C2,C3,C4,C5,C8
4. Perform a **Spay** procedure in healthy canine patients as a surgeon, assistant surgeon and scrub nurse	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6 C4,C5,C8
5. Perform sedation and or anesthesia in healthy female canine patients for Spays	A1,A2,A3,A4, A5,A6,A7,A8, A9 B1,B2,B3,B4,B5,B6, C1,C2,C3,C4,C5,C8
6. Demonstrate proficiency in medical record writing and keeping	A1,A2,A3,A4, A5 B1,B2, C1,C2,C3, C4,C5
7. Professionally perform and contribute in a team environment	B1, B2,B3,B6 C8
8. Perform the minimum ophthalmic data base	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8
9. Practice techniques used in routine dentistry	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8
10. Practice techniques uses in osteosynthesis	A1,A4,A5,A6,A9,A11 B1,B2,B3 C1,C2,C3,C4,C6,C8

SVM Course Code: SAMS528
Course Director: Dr. Cooksey, Dr. Sylvester, Dr. Chikweto
Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

***Rotation weeks to be completed**

Week 11 = March 23rd – 27th

Week 12 = March 30th – April 3rd

Week 13 = April 6th – April 9th

Week 14 = April 14th – April 17th

Previous Clinical Skills Covered:	*Revised Clinical Skills:	Weekly/rotation schedule:	Assessment Schedule:
[Ambulatory #2] Skills: 1. Perform/interpret thorough equine PE 2. Define IV and IM injection locations 3. Perform/interpret basic lameness exam 4. ID equipment used for lameness exam and apply tools correctly 5. Review distal limb nerve blocks 6. Determine appropriate drug dosages and related withdrawal times for large animal patients	**[Ambulatory #2]** Skills: 1. Interpret PE findings and ID landmarks 2. Understand steps in basic lameness exam 3. ID equipment used for lameness exam 4. Review and identify distal limb nerve blocks 5. Determine appropriate drug dosages and related withdrawal times for large animal patients	Group – **Week*** 1 & 2 – Week 12 3 & 4 – Week 11 5 & 6 – Week 14 9&10 – Week 13	Review resources in Ambulatory folder Complete multiple choice, open-note quiz on Sakai entitled "Ambulatory #2 Skills" Quiz will open on the Monday of your week of Ambulatory and will be due by noon time on Friday of that week. [20 points]
[Small Animal Medicine] Skills: 1. Demonstrate Client and Colleague communication 2. PE/Diagnostic work up/Problem solving/ Therapeutic plan development	**[Small Animal Medicine]** Skills: 1. Discuss clinical paper cases or online cases 2. Illustrate effective clinical reasoning 3. Interpret history and physical exam finding, develop Assessments,	Group – **Week*** 2 – Week 13 4 – Week 12 6 – Week 11 8 – Week 14	Review pre-recorded communication videos and perform ¨Skill Spot¨ with the aid of the Calgary-Cambridge guide Submit case reports from clinical cases and prepare discharge instructions

	Diagnostic Plans and Treatment Plans 4. Incorporate clinical research pertinent small animal topics		Assignment will open on the Monday of your week of Small Animal Medicine and will be due by noon time on Friday of that week. [20 Points]
[Small Animal Surgery] Skills: 1. PE/ problem list/differentials/ investigation and treatment plan 2. Hands on scrub nurse, assistant surgeon and primary surgeon 3. Surgical report and client discharge instructions	**[Small Animal Surgery]** Skills: 1. Review surgical paper cases and discuss problem lists/differential diagnoses/diagnostic plans and surgical plans 2. Apply surgical concepts to develop a surgical case	Group – **Week*** 1 – Week 13 3 – Week 12 5 – Week 11 7 – Week 14	Develop appropriate surgical plans for clinical cases including problem lists/differential diagnoses/diagnostic plans and surgical plans, potential complications and post-operative care. Write a complete surgical case assignment of your choice using a template and the guidelines stipulated Assignment will open on the Monday of your week of Small Animal Surgery and will be due by noon time on Friday of that week. [10 Points]
[Anesthesia] Skills: 1. Perform PE 1. Prepare anaesthetic protocol according to patient and surgical procedure 2. IV catheter placement, induction, endotracheal intubation and general anesthesia 3. Recovery patient and analgesic protocol for the postoperative care	**[Anesthesia]** Skills: 1. Develop an anesthesia plan based on data from clinical/online case	Group – **Week*** 1 – Week 13 3 – Week 12 5 – Week 11 7 – Week 14	Complete an anesthesia record sheet using a recorded simulated anesthesia monitor Complete a quiz and submit to the Anesthesia faculty Assignment will open on the Monday of your week of Small Animal

			Surgery/Anesthesia and will be due by noon time on Friday of that week. [10 Points]
[Necropsy] Skills: 1.Perform a complete necropsy (any species). 2. Recognize and interpret gross lesions in a disease process. 3. Collect specimens for histopathology and where relevant for microbiology, parasitology and toxicology. 4. Make a morphologic diagnosis 5. Prepare a written necropsy report	**[Necropsy]** Skills: . 1.Appreciate a necropsy procedure - based on a video that will be posted on Sakai 2.Write a necropsy report based on archived necropsy records.	Group – **Week*** 4 – Week 13 6 – Week 12 8 – Week 11 10 – Week 14	Watch the necropsy video posted on Sakai Write a necropsy report based on the provided gross findings Assignment will open Monday of the week of your rotation 3 weeks will be given to complete the assignment. [20 points]
[Clinical Pathology] Skills 1.Examine prepared blood and cytology smears and comment on them in relation to a brief history and clinical signs. 2. Interpret a number of hematological, biochemical and cytological cases. 3. Group case presentation/discussion	**[Clinical Pathology]** Skills: 1.Interpret a number of hematological, biochemical and cytological cases. 2. Make a diagnosis and recommend treatment and control strategies	Group – **Week*** 3 – Week 13 5 – Week 12 7 – Week 11 9 – Week 14	**Complete a short report of your case describing your findings. Assignment will open on the Monday of your week of Clinical Pathology and will be due by noon time on Friday of that week. [10 Points] **subject to change

[Parasitology] Skills: 1. Perform a fecal examination. 2. Perform a blood examination. 3. Identify the common parasites in feces, blood, urine, skin, and body fluids. 4. Make a diagnosis based on history, clinical signs and identification of the parasite(s). 5. Recommend treatment and control strategies.	**[Parasitology]** Skills: 1.Appreciate how to make a fecal smear- based on a video that will be posted on Sakai 2. Identify common animal parasites	Group – **Week*** 2 – Week 11 4 – Weeks 13 & 14 6 – Week 12 8 – Weeks 11 & 13 10 – Weeks 12 & 14	Review the posted resources and video. Answer 10 parasitology questions within the posted Assignment on Sakai. Assignment will open on the Monday of your week of Parasitology and will be due by noon time on Friday of that week. [10 Points]
[Radiology] Skills: 1. Describe radiographs using standard terminology 2. Propose a diagnosis 3. Recommend further diagnostic test and treatment	**[Radiology]** Skills: 1. Describe radiographs using standard terminology 2. Propose a diagnosis 3. Recommend further diagnostic test and treatment	Group – **Week*** 2 & 7 – Week 11 3 & 8 – Week 13 4 & 9 – Week 14 5 & 10 – Week 12	Complete a written report on Sakai entitled Radiology skills All the radiology assignments will be open in the next few days. You may submit the case <u>at any time,</u> but they must be submitted by noon on the Friday of your Radiology rotation week. [10 Points]
[ECC/Shelter Medicine] Skills: 1. PE 2. Diagnostic work up 3. Problem solving 4. Therapeutic plan development 5. Assessment/monitoring/Treatment/decision making/case management of ECC	**[ECC/Shelter Medicine]** Skills: 1. Discuss clinical paper cases or online cases 2. Illustrate effective clinical reasoning 3. Interpret history and physical exam finding, develop Assessments, Diagnostic Plans and Treatment Plans	Group – **Week*** 1 – Week 11 3 – Week 14 7 – Week 13 9 – Week 12	Students will prepare discharge instructions/client education including instructions regarding medications being sent home with the client Assignment will open on the Monday of your week of ECC/SM and will be

			due by noon time on Friday of that week. [10 Points for Shelter medicine, ECC will continue to be formative]
Total rotation hours/week: 12-15 hours			Total hours/week of student commitment: 4-6 hours

Assessment Summary:

Original Percentage Allocation:	Revised Percentage Allocation
Original percentage breakdown: Participation and Proficiency: 40% (20 small animal, 20 large animal) Written assignments: 12% (10 necropsy report, 2 for herd health summary) Case presentations: 10% (7.5 for group presentations, 2.5 for clin path) Midterm OSCE: 18% Final OSCE: 20%	*Revised percentage breakdown:* Small Animal Rotation assessments: 35% Ambulatory assessments: 25% Herd Health Summary: 5% Necropsy Report: 12% Clin path cases: 2.5% Parasitology assessment: 2.5% Midterm OSCE: 18%

Learning outcomes: please list any CLO, LLO's, or clinical skills which were omitted below:

**Due to condensed course content, it is expected that LO's will be prioritized as necessary.*

1. CLO - Prepare and deliver a case presentation using clinical cases.
2. CLO - Perform a complete necropsy and collect samples for histopathology and other ancillary diagnostic tests
3. CLO - Perform fecal, blood, urine, body fluid and cytologic examinations for parasitology and clinical pathology
4. Final OSCE and OSCE remediations

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

Small Animal Medicine and Surgery Department

INTRODUCTION TO CLINICAL ROTATIONS SYLLABUS (2 credits)

SAMS 528 TERM 6

Spring 2020

I. Course Faculty and Staff Information

Dr. Wayne Sylvester, DVM, MSc
Associate Professor
Small Animal Clinic Director
Email Address: WSylvester@sgu.edu
Telephone: 444-4175 Ext:3600
Office Location: Small Animal Clinic
Office Hours: By appointment

Dr. Elizabeth Cooksey, BSc. DVM
Instructor
Large Animal Medicine and Surgery Department
Email Address: ecookse1@sgu.edu
Telephone: 444-4175 Ext:3804
Office Location: LARF office block (behind SAC)
Office Hours: By appointment

Dr. Alfred Chikweto, BVM, MSc
Associate Professor
PathoBiology Department
Email Address: achikweto@sgu.edu
Telephone: 444-4175 Ext: 3345
Office Location: Small Animal Clinic
Office Hours: By appointment

Other participating faculty and staff is listed in the Appendix

II. Course location

Small Animal Clinic
LARF or Private Farms

Necropsy Laboratory
Clinical Pathology Laboratory
Parasitology: Bacteriology Laboratory

III. Prerequisite and/or co-requisite courses

a. Current 6th term student

IV. Required resources

Notes from previous terms.

Necessary resources will be posted on SAKAI by faculty members responsible for each section.

Large Animal Internal Medicine, Bradford P. Smith, 5th edition.

Material covered in previous courses (example: anatomy, physiology, LAMS 501, LAMS 502, LAMS 503, LAMS 516, LAMS 519, SAMS 522, SAMS 515, SAMS 526, SAMS 527, SAMS 514) is considered appropriate material

V. Recommended resources

Textbook of Veterinary Diagnostic Radiology	D. Thrall	6th ed., 2013
Textbook of Veterinary Diagnostic Radiology (E-Book)	D. Thrall	6th ed., 2013
Small Animal Internal Medicine	R. Nelson & C.G. Couto	5th ed., 2014
Small Animal Internal Medicine (E-Book)	R. Nelson & C.G. Couto	5th ed., 2014
Textbook of Veterinary Internal Medicine Expert Consult	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Textbook of Veterinary Internal Medicine (E-Book)	S.J. Ettinger & E.C. Feldman	7th ed., 2010
Fundamentals of Small Animal Surgery	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Fundamentals of Small Animal Surgery (E-Book)	F.A. Mann, G.M. Constantinescu & Hun-You	2011
Small Animal Surgery	T. Welch Fossum	4th ed., 2013
Small Animal Surgery with Expert Consult Access	T. Welch Fossum	4th ed., 2013
Small Animal Surgery (E-Book)	T. Welch Fossum	4th ed., 2013
Veterinary Surgical Preparation and Protocol	C. Pasquini	2011
Veterinary Medicine: A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses	Otto M. Radostits; et.al	10th ed.
Sheep and Goat Medicine	Pugh and Baird	2nd ed.
Farm Animal Surgery	Fubini and Ducharme	2004

The Merck Manual	Merck & Co. Inc.	8th ed.
Veterinary Laboratory Medicine, Interpretations and Diagnosis	Meyer, D. J. and Harvey, J. W	2nd ed., 1998
Veterinary Laboratory Medicine	Latimer, K. S. et al	4th 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.	5th ed., 2001

VI. Special accommodation

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

VII. Other requirements

a. Supplies, attire and etiquette expected, and schedules for each rotation may be found within the individual rotation content.

VIII. Course rationale

This is a 2 credit course involving 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 small group format of about 10 students. The course will be offered predominantly in a lab format as opposed to lectures. This applied course will build on the theories learnt in preceeding didactic courses covered in earlier terms. The course also seeks to prepare 6th term students for their year 4 clinical rotations. Students will rotate through several different areas mentioned above over 10 weeks . Each student will visit each rotation at least once during the term.

IX. Course level outcomes

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

1. Perform and interpret physical exams on farm and small animals and apply the appropriate diagnostic and treatment plans.

2. Demonstrate effective client and colleague communication in a professional and concise manner.

3. Prepare and deliver a case presentation using clinical cases.

4. Manage cases including history taking and client interaction, physical examination, diagnostic work-up, problem solving, development and implementation of therapeutic plan.

5. Describe radiographs using standard terminology, propose a diagnosis, and recommend further diagnostic tests and treatment.

6. Perform a complete necropsy and collect samples for histopathology and other ancillary diagnostic tests.

7. Correlate clinical signs with gross and histologic findings and generate a morphologic diagnosis.

8. Perform fecal, blood, urine, body fluid and cytologic examinations for parasitology and clinical pathology, make a diagnosis and recommend treatment and control strategies.

X. Lesson/Rotation-level outcomes

Companion Animal Medicine (SAC)	1. Take an accurate and complete history 2. Perform a complete physical examination 3. Prioritize problem list and list of differential diagnoses 4. Develop a diagnostic plan and interpret diagnostic test results appropriately 5. Complete medical records in the appropriate format (problem oriented & SOAP format) 6. Complete medical records accurately, completely and in a timely manner 7. Recognize personal limitations in knowledge, ability, and equipment 8. Develop an appropriate treatment plan 9. Demonstrate technical competency including: venipuncture, restraint, and other technical procedures, such as FNA, U/A, cystocentesis, ear/skin cytology 10. Demonstrate appropriate knowledge base of internal medicine 11. Conducts him/herself professionally and ethically in his/her approach to cases 12. Demonstrate professional demeanor at all times, e.g., work ethic and punctual 13. Exhibit expertise in professional reporting of cases to clinicians

	14. Demonstrate ability to work in a team 15. Demonstrate professionalism in interacting with clients, peers, faculty and staff
Surgery and Anesthesia	1. Take an accurate and complete history, perform a complete physical examination including specialty exams 2. Demonstrate appropriate knowledge of orthopedic disease processes and diagnosis 3. Prioritizes the problem list and list of differential diagnoses, develops a diagnostic plan and interprets diagnostic test results 4. Demonstrates adequate laboratory interpretation skills 5. Utilize the Problem Oriented Medical Record and SOAP format, maintain organized and complete medical records 6. Write a complete surgery report 7. Write complete discharge instructions 8. Develop an appropriate treatment plan 9. Demonstrate knowledge in rounds 10. Perform an accurate presurgical assessment of patient 11. Demonstrate knowledge of surgical principles and techniques, instrument identification and handling, surgical tray organization 12. Perform suture patterns appropriately 13. Perform ligatures appropriately 14. Maintains a complete anesthesia record 15. Develops and administers an appropriate drug therapy to include drug dosages, routes of administration, and dosing intervals 16. Prioritizes problem list and lists anticipated anesthetic complications 17. Demonstrates procedural skills (intubation, catheterization, instrumentation) 18. Demonstrates appropriate knowledge and use anesthesia delivery equipment 19. Demonstrates appropriate knowledge and interpretation of monitoring 20. Recognizes changes in patient status and responds appropriately 21. Recognizes personal limitations in knowledge, ability, and equipment and refers patient as appropriate: communicate staff/clinician when something is wrong with patient

	22. Demonstrates understanding of applied pharmacology of drugs 23. Is able to appropriately assist patient in recovery 24. Is able to assess animal pain and discuss appropriate therapies 25. Initiates an appropriate plan for postoperative patient care 26. Effectively communicate medical issues and demonstrates empathy with clients (written and/or oral discharge) 27. Exhibit expertise in orally reporting clinical cases as well as professional reporting of cases 28. Demonstrate appropriate use of scientific language 29. Demonstrate knowledge and actively participate in rounds 30. Demonstrate professional demeanor and conducts him/herself ethically at all times, i.e. work ethic and punctuality 31. Demonstrate professionalism in interaction with students, staff, faculty, and clients
Shelter Medicine	1. Take an accurate and complete history 2. Perform a complete physical examination 3. Complete medical records accurately, completely and in a timely manner 4. Develop and administer an appropriate drug therapy to include drug dosages, routes of administration, and dosing intervals 5. Demonstrates the presentation of a case in a concise and informative way to a colleague
Emergency and Critical Care	1. Develops and administers an appropriate drug therapy and includes drug dosages, routes of administration, and dosing intervals 2. Develops an appropriate fluid therapy plan for the patient 3. Obtains a concise, relevant history in an emergency setting 4. Recognizes changes in the clinical status in a critically ill patient using physical examination findings, as well as quantitative measures 5. Triages patients for immediate care, hospitalization, or outpatient care 6. Efficiently assesses vital signs in a critically ill animal 7. Demonstrates professionalism in interactions with clients, peers, faculty and staff

	8. Exhibits proficiency in professional reporting of cases to clinicians 9. Conducts him/herself professionally and ethically in his/her approach to cases 10. Displays appropriate ECC knowledge base
Radiology	1. Demonstrates adequate assessment of radiographic quality (positioning, centering, exposure, artefacts) 2. Appropriately interprets radiographs/ sonograms 3. Demonstrates adequate ability to form an appropriate (list of) differential diagnosis(es) 4. Recommends the appropriate further investigations / diagnostics 5. Communicates effectively and participates in rounds; including questions
LARF Session - Bovine	1. Perform and interpret an advanced and complete physical exam on bovine patients 2. Define where to administer IV and IM injections 3. Practice proper restraint and technique involved in administering an oral medication or orogastric intubation 4. Demonstrate how to perform a California Mastitis Test (CMT) 5. Choose the correct instruments needed to perform these tasks
LARF Session - Equine	1. Perform and interpret an advanced and complete physical exam on equine patients 2. Define where to administer IV and IM injections 3. Perform and interpret a basic lameness exam on an equine patient 4. Identify equipment used in a lameness exam and apply the tools correctly
Ambulatory Field Experience	1. Collect a pertinent medical history 2. Perform and interpret a thorough physical exam on farm animal species 3. Extract a relevant problem list from observations made through history and physical exam 4. Determine reasonable differential diagnosis lists based on problem list 5. Formulate a realistic diagnostic plan and create a treatment plan on the individual patient and herd levels 6. Demonstrate the presentation of a case in a concise and informative way to a colleague 7. Prepare a complete and accurate medical record of each farm visit 8. Locate peer reviewed journal articles and apply that information to the farm visit 9. Understand the importance of further reading to improve knowledge base and proficiency in practice

	10. Recognize and diagnose common disease processes seen in food animals 11. Perform basic clinical and surgical procedures under field conditions 12. Select and apply appropriate physical and chemical restraint in food animals 13. Demonstrate appropriate client communication and education along with basic herd management recommendations 14. Determine appropriate milk and meat withdrawal times based on the medications selected/given in treatment plan
Necropsy Rotation	1. Perform a complete necropsy (any species). 2. Recognize and interpret gross lesions in a disease process. 3. Collect specimens for histopathology and where relevant for microbiology, parasitology and toxicology. 4. Correlate gross necropsy and microscopic findings to make an appropriate diagnosis 5. Prepare a written necropsy report.
Clinical Pathology Rotation	1. Examine prepared blood and cytology smears and comment on them in relation to a brief history and clinical signs. 2. Interpret a number of hematological, biochemical and cytological cases.
Parasitology Rotation	1. Perform a fecal examination. 2. Perform a blood examination. 3. Identify the common parasites in feces, blood, urine, skin, and body fluids. 4. Make a diagnosis based on history, clinical signs and identification of the parasite(s). 5. Recommend treatment and control strategies.

XI. Alignment of Course Level Outcomes with Program Level Outcomes

See Appendix for full table of CLO alignment to program level outcomes

XII. Course Schedule

a. Introduction of SAMS 528 course. **Tuesday January 14th 2020** at Ray and Jan Sis Hall 2 from 1:30pm-3:20pm. All 6th term students must be present.

b. Please find the rotation schedule under "Syllabus" folder in Sakai

c. ****Rotation-specific schedules and details can be found in their individual sections of this syllabus.**

XIII. Grading and assessment policy, and grading rubrics

a. Students will receive a letter grade in accordance to the SVM grading scale below:

>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

Grade will be calculated as follows:

- Participation and proficiency in rotations (40%)
- Written Assignments (12%)
- Case Presentations (10%)
- Midterm Objective Structured Clinical Examination (OSCE) (18%)
- Final OSCE (20%)

1. **Participation and proficiency in rotations (40%):** this will consist of your individual evaluations and assessments from the clinicians you work with on both your small animal and large animal rotations (Medicine, Surgery & Anesthesia, GSPCA, Radiology, and Ambulatory). 20% of this grade will come from the small animal rotation evaluations and 20% will come from the Ambulatory rotation evaluations. ***Rubrics for these evaluations can be found under the Syllabus Folder on Sakai.**
2. **Written Assignments (12%):** 10% of this grade will be from the necropsy report required from every student after successfully completing the Necropsy rotation. The other 2% of this grade will be from a herd health summary written (as a group) from one of your ambulatory visits on your FIRST round of Ambulatory, grading rubric can be found in the Syllabus Folder on Sakai.
3. **Case Presentations (10%):** This grade is broken down into 2 parts: 2.5% for the Clinical Pathology cases and the other 7.5% will be your group case presentation given at the end of the term on your choice of a small animal or large animal case you saw during your time on rotations. More details for that presentation can be found further on in the syllabus.
4. **OSCE Midterm and Final exams (38%):** of the grade will be attained from the OSCE's. The Mid-term OSCE is worth 18%, and the Final worth 20%. The practical skills tested will be ones that students will have been adequately exposed to during the course of the term, as well as those that have been learned in previous terms during practical sessions. The Mid-term OSCE will be held in the SIM lab and SAC, the final OSCE will be held at the SAC and on the LARF with live animals. More detailed information regarding exam day will be posted in SAKAI in the "OSCE" resource folder closer to the dates of each OSCE.

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). If a student scores less than 80% on the m id-term or final OSCE, that student will be mandated to remediate the OSCE on the scheduled remediation date.

b. Formative assessment: students will receive ongoing feedback from clinicians on each rotation as students work with each case. The feedback from clinicians is geared toward improving each student's clinical proficiency, peer and client communication and professionalism. No grades will be assigned.

XIV. Recommended study strategies

The students should review the relevant subject matter pertaining to the rotation they will be completing. 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 read the WHOLE syllabus before the orientation session and specific rotation information prior to rotation start.

Also please note:

- Recognition and repeated avoidance of acceptable technique (e.g. breaking aseptic technique without correcting the error or without asking for assistance) will be considered grounds for dismissal from surgery.
- The student is expected to have prepared for the farm visit by reading the provided resources as well as actively participate with their classmates and faculty throughout the afternoon.
- An informal evaluation will be given to any student that requires it after the week of rotation. Students who are not performing up to an adequate standard will be notified as soon as substandard performance is noticed. At that time, methods to improve the student's performance will be discussed and a date set for a follow-up meeting to discuss the student's subsequent performance.
- **Students that may be pregnant or are pregnant should immediately inform the Course Director and/or the Instructors**.
- If you suffer from **ANY disability** (physical or psychological) that may impair your performance, you should proceed in the same manner to be better assisted in clinical rotations.

XVI. Professionalism statement

a. Students are expected to carry themselves in a professional manner in accordance with the AVMA professionalism competency. Professionalism is graded in every rotation. Unprofessional behavior, attitude, attire or ethics will not be tolerated. Students will be publicly representing themselves, St. George's University and their profession; conducting themselves in an exemplary manner is expected. You are

training to be veterinarians; a very high standard of professional conduct is expected of you.

XVII. Attendance policy (refer student to the student manual if applicable)

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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 all rotation days is MANDATORY. An electronic medical excuse needs to be completed if the student is not able to attend on any rotation day. The course director and main contact of the rotation need to be informed as well.

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

A student who fails to appear to the OSCE, misses the case presentation or does not submit assignments by the deadline without a valid reason (see absence reporting procedures in the most current Student Manual) will receive a grade of "0" for the examination, presentation, and/or assignment. 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.

XX. Copyright policy

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

Appendix

I. **General Schedule and Location for All Rotations**

Beginning of term Orientation
Orientation will take place Tuesday, January 14th from 1:30-3:20pm at Ray & Jan Sis Hall Theatre II.

Location for Rotations:

- Companion Animal Medicine (SAC), Surgery and Anesthesia, and Emergency and Critical Care take place at the Small Animal Clinic.
- Radiology takes place at the SAC conference room.
- Shelter Medicine takes place at the SAC.
- Ambulatory takes place at the LARF and private farms
- Parasitology takes place in the Bacteriology laboratory
- Necropsy takes place in the Postmortem/Histopathology laboratory
- Clinical Pathology takes place to Clinical Pathology laboratory

Rotation Days and Times:

- Companion Animal Medicine (SAC): 1:30pm until done on Tuesday - Thursday
- Shelter Medicine (SAC): 1:15-4:00pm Tuesday and Thursday (see schedule on rotation section)
- Surgery/Anesthesia: 1:00pm until done on Tuesday-Friday
    - Students assigned to Tuesday surgery should evaluate surgical patients on Monday afternoon at 5:30pm or another time previously arranged for students in Monday afternoon selectives.
- Emergency and Critical Care:
    - Tuesday-Friday 5:00pm-8:00pm (*However, working with emergencies cases may take longer)
    - Saturday (4 shifts): 8am to 12pm, 12pm to 4pm, 4pm to 8pm
- Radiology: Tuesday and Thursday 1:30-4:30pm
- Ambulatory: Tuesday-Friday 12:45 - until done (see schedule in rotation section for more details)
- *Parasitology: Tuesday and Thursday 1:30 - 3:30pm
- *Clinical Pathology: Wednesday, Thursday, Friday 1:30pm - 3:30pm
- *Necropsy: Tuesday, Wednesday, Friday 1:30pm - 3:30pm
  *However, on occasions, laboratories may take longer.

Case Presentation Dates and Times:

- Tuesday April 14th at 3:30-5:30pm
- Wednesday, April 15th at 3:30-5:30pm
- Thursday, April 16th at 3:30-5:30pm

OSCE Dates:

- Midterm OSCE: Thursday, March 5th 2020
- Final OSCE: Wednesday, April 29th 2020

If there is any conflict between rotation dates and times and selectives, please let one of the Course Directors know as soon as possible at ecookse1@sgu.edu, WSylvester@sgu.edu, or achikweto@sgu.edu.

ATTENDANCE AND PARTICIPATION IN ALL ROTATIONS ARE MANDATORY.

Companion Animal Medicine Rotation (SAC)

Clinicians:
Dr. India Paharsingh (main contact for rotation) *and SAC Clinicians*

Overall Rotation Goal:

The primary objective of this rotation is to improve the student's ability to verbally present a case to both colleagues and clients in both informal and formal settings. This rotation is specifically intended to prepare students for rounds during their 4th year rotations. Under the supervision of the SAC clinical faculty and internal medicine specialists, students will be directly involved in all aspects of case management including history taking and client interaction, physical examination, diagnostic work-up, problem solving, and development and implementation of a therapeutic plan. Students will be divided into groups of four or five students per clinician.

Rotation Overview:
Tuesday-Thursday

- Students will rotate once through the Companion Animal Medicine (SAC) rotation during the term.
- Case receiving and patient rounds will take place promptly at 1:30pm and will end when all appointments and emergencies have been completed (generally between 4:30 and 5:30pm).
- Students will be assigned to work with a SAC clinician each day in groups of 4, 5 or 6 (depending on the number of outpatient appointments and attending clinicians).
- The student groups are expected to assist in the receiving of their clinician's scheduled appointments and/or walk-in emergencies.
- All students are expected to participate in the receiving of cases where each student will have primary responsibility for a minimum of one case.
- Each case received will be reviewed with the assigned clinician.
- Students will be responsible for writing medical records including history, physical examination findings and patient discharge summaries for outpatient visits.
- Treatment sheets, patient summaries and SOAPs may be required for hospitalized patients.

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Supplies & Attire:

- Students are expected to bring supplies necessary for work in the clinic. These include, but are not limited to stethoscope, bandage scissors, calculator, pens, small notepad
- White coats must be worn over scrubs.
- Appropriate closed-toe shoes are required.

Other Important Information

- Responsibilities, protocols and procedures at the Small Animal Clinic are listed in the Small Animal Policies and Procedures Manual, which may be found on SAKAI.
- Experiences will vary among students depending upon the cases presenting to the SAC during the assigned week.
- Case and special topic discussions as well as radiograph reviews will be used to supplement instruction when needed.
- When students are not receiving cases, students are expected to perform diagnostic procedures, participate in rounds, provide medical care for hospitalized patients or perform other service duties.
- Please feel free to contact the course director or main contact of rotation with any concerns that you may have pertaining to your experience during the Medicine rotation.

Shelter Medicine

Clinicians:

Dr. Lucian Peters (main contact for rotation)

Overall Rotation Goal:

Under the supervision of the SAC clinical faculty, students will be directly involved in all aspects of case management including; history taking and client interaction, physical examination, diagnostic work-up, problem solving, development and implementation of therapeutic plan. Students will be divided into groups of five or six. The students will be exposed to a shelter medicine environment but will be under the supervision of a SAC clinician and will be exposed to the same care and standards provided at the SAC.

Rotation Overview:

Tuesday and Thursday

- **Please refer to the group schedule at the end of this section.**
- Students will rotate one day through the Shelter Medicine rotation during the term.
- The students will meet the clinician at the SAC at 1:15pm.
- Case receiving will take place as they come and will end at 4:15pm.
- Students will be assigned to work with a SAC clinician each day in groups of 5 or 6.
- All students are expected to assist and participate in the receiving and management of appointments and/or walk-ins.
- Each case received will be reviewed with the assigned clinician.
- Students will be responsible for writing medical records including history, physical examination findings and patient discharge summaries for outpatient visits.

Supplies & Attire:

- Students are expected to bring supplies necessary for work at the SAC. These include, but are not limited to: stethoscope, bandage scissors, calculator, pens, small notepad
- White coats should be worn over scrubs.
- Appropriate closed-toe shoes are required.

Other Valuable Information

- Experiences will vary among students depending upon the cases presenting during the assigned week.
- When students are not receiving cases, students are expected to perform diagnostic procedures, participate in rounds, or perform other service duties.
- Please feel free to contact the course director, main contact with any concerns that you may have pertaining to your experience during the Shelter Medicine rotation.

Shelter Medicine Schedule and Groups

When Groups are on Emergency/Shelter Medicine rotations, the students will be divided as follows based on their number from 1 to 11 or 1 to 10 within each Group:

Group member #1-5 will have Shelter Medicine rotations on Tuesdays
Group member #6-10(11) will have Shelter Medicine rotations on Thursdays

Week	Day	Group number
3	Tue/Thurs	8
4	Tue/Thurs	6
5	Tue/Thurs	4
6	Tue/Thurs	2
7	Tue/Thurs	10
8	MIDTERMS	
9	Tue/Thurs	5
10	Tue/Thurs	3
11	Tue/Thurs	1
12	Tue/Thurs	9
13	Tue/Thurs	7

Surgery & Anesthesia Rotation

Clinicians: *Dr. Francesca Ivaldi and Dr. Antia Escribano Carrera* (main contacts for surgery)*, SAC clinicians*
Anesthesia Clinicians: *Dr. Miccio* (main contact for anesthesia)
Anesthesia Technician: *Naudia Dundas*
Surgery Specialists: *Dr. Guerrero and Dr. Bruhl-Day*
Anesthesia Specialist: *Dr. Restitutti*

Overall Rotation Goals:

The surgery and anesthesia rotation is designed to introduce students to the clinical surgical and anesthesia setting and to prepare them for their 4th year surgery and anesthesia rotations.

Surgery:

The four-day clinical rotation will focus on the clinical diagnosis and management of surgical problems observed in small animal practice using clinical cases presented to the Small Animal Clinic. Hands on experience will be provided primarily through assistance in major procedures, and through the performance of elective procedures. The student is reminded that this is **not** a surgery course and primary surgeries may be limited. Additional surgical training will be gained during the 4th year; and, for those interested in surgery, electives related to surgery should be selected.

Anesthesia:

Students will participate in induction, maintenance and recovery of the Small Animal Clinic surgical patients. Students will be expected to prepare an anesthetic protocol, discuss relevant anesthetic drugs, discuss possible complications, and perform anesthesia on a client-owned animal (including PAP dogs and cats) and/or feral cats under direct supervision.

Rotation Overview:

Monday 5:30pm

- Students will meet surgery patients Monday at 5:30 pm in the SAC treatment room. The anesthetist student will meet with Ms. Naudia Dundas for the anesthesia orientation. The student surgeons will meet with Dr. Ivaldi.

Tuesday-Thursday/Friday 1:00pm – until done

- Students will be working with client-owned patients. These patients will be either inpatients or patients that have been recently admitted by SAC clinicians.
- Surgeries will be assigned the Friday before each week. Information regarding the

patient name and type of surgery will be provided. Surgeries are subject to change based on clinic need.

- Students may be assigned as surgeon, assistant surgeon, scrub nurse, or anesthetist on the following surgical procedures (including but not limited to):

    - Orthopedic procedures including fracture repair, patella luxation repair, cranial cruciate ligament repair

    - Soft tissue surgery including foreign body removal, intestinal biopsy, abdominal exploratory, cystotomy, etc.
    - Routine spay or neuter
    - Dental prophylaxis
    - Mass removal

- Students assigned to surgeries are expected to review the patient record at least the evening before the procedure and come to their clinical rotation prepared to discuss the patient, preoperative workup, surgical procedure, and plan for surgical recovery.
- Students will be responsible for reviewing class notes, textbooks and other study materials from all the relevant courses in preparation for the surgical and anesthetic procedures to be performed that day/week.
- Students will be expected to follow surgical protocols during the surgeries and perform appropriate pre-operative and post-operative duties as assigned by the clinician on the case.
- Students will be expected to discuss actual clinical cases and to participate in clinical rounds (including decision making and plan development) in both surgery and anesthesia.

ALL STUDENTS SHOULD BE PREPARED TO PERFORM ANY OF THE ROLES FOR ROUTINE SPAYS AND NEUTERS.

Friday

- Students come to the clinic at 1:30pm on Friday to check on in-house patients and finalize any medical record writing.
- Students talk to clinicians about the cases which the students want to present at the end of the term before finals.
- Students should discuss with clinicians if there is a need for the students to come in on Friday.

Groups:

- The group will be divided into 2 or 3 groups of 3 to 5 students.

Hours:

- Surgeries will take place on Tuesday, Wednesday, and Thursday afternoons as well as selected Fridays as determined by the main contacts for surgery. Students will meet their instructors at the Small Animal Clinic at 1:00 pm for rounds and assignment of duties.

Students performing surgery on Tuesday are expected to evaluate their patient prior to arriving to their rotation on Tuesday. Students generally meet at the clinic on Monday at 5:30pm to evaluate the patient, perform preoperative blood work if not already performed, and surgical orientation. On Friday, in-patient follow-up and medical record writing should be finalized.

Patient Care and Case Load:

- Because this rotation is a clinical rotation, the patient and caseload depend on cases which present to the SAC.
- The specific surgeries performed will vary between weeks. There will be procedures scheduled every day of the rotation, but no surgical procedure can be guaranteed.

Medical Record Requirements:

- During this introduction to clinical surgery, the student is expected to prepare medical records documents that are relevant to the procedure performed.
- In the case of routine spays, neuters and mass removals, students are expected to complete all the following:
    - Physical examination form, surgery report, treatment sheet, discharges instructions.

- In the case of advanced soft tissue or orthopedic surgeries, the student is expected to complete a surgery report. Completion of discharge instructions will only be required if the patient is expected to be discharged the day after the surgery.
- Medical records for the patients will be the responsibility of the group in charge of the case and can be divided as the group sees fit. In general, most groups following these guidelines:
    - **Anesthetist**: Physical examination (recheck form), anesthesia record sheet, and post op treatment sheet.
    - **Assistant Surgeon/Scrub nurse**: Treatment sheets for pre-op day and surgery day, discharge form
    - **Primary surgeon**: Surgery report

- **General guidelines for record writing**:
    - Written records must be legible, meticulous, and complete.
    - Each form or document reporting patient information needs the correct date (day, month, and year).
    - The name or initials of the student must be reported legibly at the end of every note or page, and whenever requested.
    - Record keeping must be such that it is possible for anyone to retrieve the needed information at any time by just reading the records.
- The majority of medical records forms should be completed the same day and

should remain in the patients file.
    - Surgery reports must be completed the evening after the surgery and will be typed into AVIMARK to incorporate them into the patient's electronic record.
    - If the patient's file is not easily located, any additional paperwork can go in Dr. Ivaldi's mailbox.
- Students should note that for controlled substance administration, the first and last name of the patient's owner must be reported on the anesthetic record sheet.
- The anesthetic record sheet must be completed in all its parts and handed in to the instructor in charge at the end of the procedure, once the patient has recovered from anesthesia. In the case that the anesthesia instructor is not available at this time, the anesthetic record should be placed in the patient's file.

Surgery Etiquette and Attire:

- Backpacks, food, or drink are not permitted in the clinic.
- Conversations should focus on the tasks at hand and kept to a reasonable volume to minimize disturbance to other faculty, staff, students, and patients.
- Since students (other than the anesthetist) will be standing for the entire surgery, good quality footwear is essential to minimize leg and back strain. Students are expected to wear surgical scrubs always and closed toe comfortable and protective footwear with hard soles. Crocs with holes are not permitted. Sneakers are acceptable.
- No one is allowed inside the surgery areas without a cap, mask, and booties.
- White lab coats are to be worn always when not in the surgery suite.
- It is highly recommended that students have lunch to prevent low glucose levels during surgery sessions.
- **The use of cellular phones is not permitted when on rotation in the Small Animal Clinic.** They must either be stored in the student's bag or, if they remain with the student, must be turned off or to vibrate (at minimum).
- Students are expected to behave and communicate among themselves, with faculty and staff in a professional manner.
- To demonstrate their knowledge and confidence, and to avoid ambiguity and misunderstandings leading to potentially catastrophic or fatal mistakes (e.g. wrong drug, route of administration or dose), students must strive to convey scientific and clinical information to colleagues, co-workers and clients in the most appropriate, correct, complete, and accurate manner.

Emergency and Critical Care Rotation

Faculty: *Dr. Zsofia Vigh* (main contacts for rotation) *and SAC clinicians*

Overall Rotation Goal:

The Emergency and Critical Care rotation is designed to increase the student's comfort level with assessment, monitoring, treatment, decision making, case management and care of in-house and emergency critical care patients.

Rotation Schedule Overview:

Tuesday-Saturday

- All students rotate through the emergency and critical care rotation once during the term. Students on ECC rotation are graded on participation, motivation to learn. There are 7 possible emergency shifts available:
    - Tuesday – Friday 5:00pm – 8:00pm and after hours on-call duty
    - Saturday 8am-12pm, 12pm-4pm and 4:00pm–8:00pm
    - **Each student needs to rotate at least twice.**

	Tues.	Wed.	Thurs.	Fri.	Sat. 8am - 12pm	Sat. 12pm - 4pm	Sat. 4pm - 8pm	
Group member#	6, 7, 8	9, 10,11	1, 2, 3	4, 5, 6	8, 9, 10	5, 7, 11	1, 2, 3, 4	

Rotation Specifics:

This service is responsible for receiving walk- in emergencies and urgent referral cases as well as treating and monitoring of the in-house patients. **The emergency phone will be manned by the students from 5:00pm to 8pm on Tuesdays through Fridays; and from 8am through 8pm on Saturday.** After 8:00 pm, the phone will remain at the clinic with the technician on duty. The students will be on service and in the clinic every night until 8:00pm only. Students will be assigned groups and shifts, with at least 2 or more students on the clinic floor always.

This rotation will function as a ***"team"*** service and all clinicians and students should be familiar with all the cases in the hospital. Each student will be responsible for physical exams of each patient on the service. ICU orders prepared by the primary clinician will be posted for each case. It would be helpful to bring a thermometer, stethoscope, bandage scissors, pens, penlight,

and a calculator. Please let the clinician know if you have any allergies (i.e. latex gloves, bleach, etc.)

While on service with the SGU emergency critical care medicine rotation you will be expected to be on **your best professional behavior.** The clinician will provide all emergency services with your assistance. As the caseload allows, each student will be assigned to a case. If you are assigned to a case, you will be responsible for knowing everything about that case; discuss exam findings and assessment, and develop a treatment plan, and writing a case transfer sheet. You will also be responsible for discussing the case with your colleagues. More than one student may be assigned to one case. The clinician must approve all emergency cases and be present for any procedures. The clinician or technician will perform the diagnostic tests using laboratory machines. You should wear scrubs and closed toe shoes while on service and always act professionally. There should be no outside visitors. Food and drink should be kept in the clinic kitchen and only consumed there. There will be no removing of hospital supplies. Children and pets will not be permitted in the clinic. Report any incidents (breaks, spillages, injury) to the technician or clinician on duty.

Attendance is mandatory!

When not receiving cases, performing diagnostic procedures, participating in rounds, or otherwise performing service duties, all students should assist the technical staff in the treatment and monitoring of all patients. If time allows, "round table" type of discussions may occur on any area related to emergency and critical care.

Treatments:

The in-house patients will all have a treatment sheet attached to their cages. The treatments may include a TPR, walk outside (if possible), drug administration, and fluid monitoring. All the instructions should be clearly indicated on the flow sheet. You are to make **NO adjustments to the sheet**; this is the responsibility of the primary clinician (unless clearly indicated by a clinician). Please briefly record **ALL** findings on the treatment sheet along with your initials, after the treatments are performed, and notify the clinician of abnormalities. **If you have any concerns, please call the clinician**.

Rounds:

All students are expected to report to rotations at 5:00 pm Tuesday to Friday, rounds may be delayed depending on caseload and students should be prepared for that.

On Tuesday – Friday, all rounds will take place at 5pm for the respective small groups. **On Saturdays, rounds will take place at 8am, 12pm, and 4pm for the respective small groups.**

When rounding cases, the student should present the patients' signalment, history, important physical exam findings, active problem list, DDx, diagnostic plans, and any interventions / treatments and plans for the patient. They should also provide a summary of the patients' overall status (i.e. improving, stable, static, and declining). Cases should be discussed thoroughly yet **concisely**. Interventions discussed should be categorized as

follows: ***Fluid therapy, medications, diagnostics, monitoring, nutrition, nursing care, etc.***

ALL STUDENTS ASSIGNED TO THE SHIFT ARE EXPECTED TO BE READY AND ON TIME FOR ROUNDS. If a critical emergency is taking place at that time, the rounds may be delayed.

Receiving cases:

Students will be responsible for receiving phone calls from owners and veterinarians. It is essential that the emergency cell phone be answered when it rings. Make every effort to be polite, professional, and helpful always. Please answer the phone by saying *"St George's University Small Animal Clinic Emergency Service", this is _____. How may I help you?"* For each call, fill out the phone log (in treatment room) with name, phone number, primary concerns and plan. You should discuss each phone call with the clinician on duty. More in-depth instructions for phone cases and receiving cases are in the SAC policies and procedures manual on Sakai. There will be shifts when cases arrive in a staggered fashion and shifts when several cases seem to arrive at the same time. When possible, more than one student should triage the patient, perform a primary survey, and welcome the owners.

Triage:

Each case should be triaged immediately upon arrival. When more than one case is presented to the service at one time, the student should categorize the severity of each case according to the principles of triage (taught to you in 4th term). **Follow the A, B, C's, then D's and E's**: animals with respiratory distress, tachycardia, inability to walk, active hemorrhage, abdominal distention, seizures or unconscious should be considered most critical and evaluated first. Animals with any of these problems are considered more critical than any patient free of these problems. Any patient showing any of these should be taken immediately to the treatment area.

Primary Survey:

A primary survey is a cursory, yet thorough physical exam that allows you to make an assessment of patient's vital signs. Emphasis is placed on mentation (neuro), cardiovascular stability, ventilator and respiratory competency; and renal parameters (can the patient urinate) and to uncontrolled hemorrhage. Based on the primary survey, you may choose to administer emergency supportive treatment either in the emergency room or in ICU/treatment area (by bringing the animal back prior to discussing the case with the clinician). Ideally, attempt to obtain a "brief history" before leaving the owners.

Client communication:

Please recognize that our patients are critically ill and family members and owners can be emotionally distraught at presentation. Be compassionate yet professional. If you feel it is in the best interest of the patient to remove the animal to the ICU/treatment area, please

explain this to the owner and inform them that someone will be out to speak with them as soon as possible.

Following the primary survey and intervening with any necessary emergency support, a complete physical exam should be performed (secondary survey) and recorded and a thorough history should be obtained from the owner. At this time, one student should take primary receiving responsibility of the case and discuss the case (history, problems, assessment, and plan) with a clinician. If a second student is assisting, preparation of laboratory samples and instrumentation of the patient under guidance of the clinician can be addressed while the primary receiving student speaks with the owners.

PLEASE REMEMBER TO ALWAYS BE SAFE AND LISTEN CLOSELY TO THE RECOMMENDATIONS OF THE ATTENDING CLINICIAN.

WEAR GLOVES WHEN HANDLING ANY PATIENTS DEMONSTRATING CLINICAL SIGNS OF ZOONOTIC DISEASES SUCH AS RABIES OR WHOSE VACCINATION STATUS IS UNKNOWN OR WHOSE PRIMARY DISEASE IS QUESTIONABLE.

KEEP CLINIC DOORS LOCKED ALWAYS AFTER HOURS AND ENTER THROUGH THE FRONT DOOR AND PLEASE MAKE ARRANGEMENTS TO HAVE A CAR AVAILABLE SO THAT THERE IS NO WALKING HOME ALONE AT NIGHT.

Appointment Flow for All Services at the SAC

1. Students review patient medical record if the appointment is for an existing client. (5)

2. Two students go and greet the client in the reception area. (1)
    a. One student walks with the client to the examination room. (1)
    b. One student takes the patient to take the weight. (1)

    **Please note that in some instances the front desk team will perform Step 2, in that the front desk team will take the patient's weight and place the client and the pet into the examination.

3. The clinician, a technician, and the other students meet the client in the room as the student and the client enter. (1)
4. Introduce yourself to the client and the pet and define your role.
5. One or two students start taking the history.
6. As the students are taking a history, the other students are listening and perform a physical exam on the patient. (5)
7. The clinician observes and asks any remaining history questions and performs a physical exam on the patient while talking to the students about the case, in the exam room with the client. (10)
8. The clinician and the students create a plan in the room and discuss the plan with the client. (5)
9. The technician listens to the plan and begins the estimate on the exam room computer, gets the necessary diagnostics ready in the examination room, and/or leaves to prepare the treatments or further diagnostics. (5)
10. Once the client has been updated on the plan, the estimate is approved and signed, the diagnostic tests that can be done in the treatment room are done by the necessary students and/or technician, and/or the patient gets taken to the treatment room for further diagnostics if needed. (5-10)
11. Clinician and students can further discuss the case while diagnostics are being performed, outside of the room. (5-10)
12. Technician collects diagnostic test results. (1)
13. One or two students fill out the necessary medical records. (5)
14. One or two students start to prepare discharge instructions. (5-10)
15. Technician adds charges to Avimark. (5)
16. Medications are requested and collected from the pharmacy. (10)
17. Clinician walks back to the room with available students to discuss results and the plan with the client. (5)
18. One student explains the discharge instructions to the client. (5)
19. One or more students administer medications to the patient if necessary. (5)
20. One or two students walk patient and client out to reception for payment. (1)
21. Clinician notifies front desk staff if a recheck appointment needs to be scheduled. (5)
22. Clinician and students get ready for the next appointment. (5)

Radiology

Radiology Specialists: Dr. Hagen (main contact) and Dr. McAllister

Rotation Goals:

The aim of the rotation is to impart to the student the basics of the skills required to accurately describe imaging abnormalities on radiographs of various cases presented during the lab sessions. Some ultrasonography images, CT or MR images may also be given during this course. This rotation builds on the knowledge acquired during the 5th term lab sessions.

Rotation Objectives:

On completion of this course the student, using standard imaging terminology, will be able to verbally describe:

- The projections/image planes presented
- Analyze the images for artefacts or errors
- The relevant abnormal features present on the case images
- Recognize normal anatomical variants
- Compile a reasoned list of differential diagnoses
- Propose an imaging diagnosis consistent with the image findings
- Suggest further diagnostic tests or treatment.

Small group sessions:

There will be two sessions of one to three hours twice in the term. These practical sessions will include case discussions and film reading.

Grading for the rotation will be based on the student's performance in the session, including knowledge base and active participation. A radiographic case will be assigned to each student for presentation on the second session. Presentation duration will be 5 minutes.

Rotation dates, times and group information can be found on the next page.

SAMS 528 RADIOLOGY ROTATION SCHEDULE

Week	Day		Group number	Time	Faculty
3	Tue	Jan 28th	6	1:30-4:00	RH, HMcA
3	Thurs	Jan 30th	7	1:30-4:00	RH, HMcA
4	Tue	Feb 4th	4	1:30-4:00	RH, HMcA
4	Thurs	Feb 6th	5	1:30-4:00	RH, HMcA
5	Tue	Feb 11th	2	1:30-4:00	RH, HMcA
5	Thurs	Feb 13th	3	1:30-4:00	RH, HMcA
6	Tue	Feb 18th	10	1:30-4:00	RH, HMcA
6	Thurs	Feb 20th	1	1:30-4:00	RH, HMcA
7	Tue	Feb 25th	8	1:30-4:00	RH, HMcA
7	Thurs	Feb 27th	9	1:30-4:00	RH, HMcA
8					
9	Tue	Mar 10th	1	1:30-4:00	RH, HMcA
9	Thurs	Mar 12th	6	1:30-4:00	RH, HMcA
10	Tue	Mar 17th	9	1:30-4:00	RH, HMcA
10	Thurs	Mar 19th	4	1:30-4:00	RH, HMcA
11	Tue	Mar 24th	7	1:30-4:00	RH, HMcA
11	Thurs	Mar 26th	2	1:30-4:00	RH, HMcA
12	Tues	March 31st	5	1:30-4:00	RH, HMcA
12	Thurs	Apr 2nd	10	1:30-4:00	RH, HMcA
13	Tue	Apr 7th	3	1:30-4:00	RH, HMcA
13	Thurs	Apr 9th	8	1:30-4:00	RH, HMcA

HMcA:-Dr. Hester McAllister

RH:- Dr. Regine Hagen Argudin-Pina

Instructors may change as the term progresses.

Ambulatory Services

I. Course Schedule

There are effectively 3 groups (Groups A, B and C). Students will go out with the Ambulatory Service to local farms TWO days of each week; once with Bus #1 and once with Bus #2, and stay at the Large Animal Resource Facility (LARF) ONE day of each week (This will be with other supporting faculty). On Friday afternoons a bus will go to *Amistad stables* or *Mr. Smith's farm*, and will give the student an opportunity to perform physical examinations of the horses and any necessary treatments.

Ambulatory service (Bus 1 and 2) will focus on herd management, preventative medicine, animal nutrition and the development of sustainable farming through client empowerment. Ambulatory services buses will depart promptly at **1pm** from the LARF. However, please have at least half of the group arrive at **12:45pm** if you are going out on one of these buses. The rest of the group may arrive at 12:55pm. On Friday afternoons the bus will depart at 1pm as for the other ambulatory services.

LARF sessions start PROMPTLY at **1:30 pm** and will include a review of large animal physical examination and clinical skills.

Punctuality is of tremendous importance to this course. In many instances travelling time may be protracted; consequently, it is important that everyone be on time to the LARF to have a timely return to base. If it is your job to stock the van, please be at the LARF at 12:45 pm.

Remember that the roads are steep and that there are a lot of sharp corners on the coastal roads. If you suffer from motion sickness, then it is recommended to take medication prior to your departure.

Bringing water is highly recommended!

Schedule: Spring 2020

Ambulatory 1st ROUND SCHEDULE (January 28th - Feb 28th)

Group	Tuesday	Wednesday	Thursday	Friday
A	Bus 1	Bus 2	LARF*	Amistad/ Mr. Smith's
B	Bus 2	LARF*	Bus 1	Amistad/ Mr. Smith's
C	LARF*	Bus 1	Bus 2	OFF

*Where the LARF session is Bovine PE and common clinical skills

Ambulatory 2nd ROUND SCHEDULE (March 10th - April 10th)

Group	Tuesday	Wednesday	Thursday	Friday
A	LARF*	Bus 1	Bus 2	OFF
B	Bus 1	Bus 2	LARF*	OFF
C	Bus 2	LARF*	Bus 1	Amistad/Mr. Smith's

*Where the LARF session is Equine PE and common clinical skills

Ambulatory rotation groups

Group Number 1&2- Weeks 4 and 12

A- Coulter, Elliott, James, Fruges, Lamar, Noel, Desmarteau

B- Kiebler, Painter, Varnado, Allar, Kause, Jones, Mahoney

C- Guzman, Seligson, Campbell, Buchanan, Jones, Catto, Garbarino, Hoffman

Group Number 3 & 4 - Weeks 3 and 11

A- Kila, Frizol, Wadman, Sweeney, Turner, Lee, De Vilers-Lacase

B- Atamanchuk, Kajornsakchai, Hummel, Sagl, Crise, Monroe, Samborsky

C- Counce Hooker, Murray, Feliz, Garcia, Gonzalez, Brown, Adams

Group Number 5 & 6 - Weeks 7 and 10

A- Tedesco, Franco, Spanos, Batorski, Turturro, Hart

B- Wisniewski, Pickard, Anderson, Warburton, Reyes, Sullivan, Peters

C- Mordasky, McElroy, Schultz, Gremley, Larabee, McNabb, Chang

Group Number 7 & 8 - Weeks 6 and 9

A- Smith M., Harrington, Iazzetta, Bierman, Calhoun, Becker

B- Pedone, Dickerson, Cleaver, Pless, Malcolm, Davis, Garza

C- York, Drayer, Connell, Jeffcoat, Risteen, Cali M., Magelinski

Group Number 9 & 10 - Weeks 5 and 13

A- Silveira, Murphy, Katara, Smith E., Martinez Mena, Helms

B- Cali B., Tan, Sanchez, Chrai, Barandica, Schimshock, Choi

C- Raiano, Passione, Royer, Thille, Hatton, McCarthy, Bohannon

The above schedule is subject to change due to availability of cases and extreme weather conditions.

It is designed to be as fair as possible to all students.

II. Grading

Medical records

10% of the grade will be attained from the medical records that are turned in after every ambulatory trip. Each student is expected to have their name on a minimum of four medical records for the semester. This grade will be generated as a group grade. Medical records are due the following afternoon when you return to the LARF for the next day of rotation (e.g. Tuesday afternoon group will hand in their records on Wednesday afternoon by 1:30pm). The grading of the medical records is part of the weekly assessment score and the relevant competencies will be explained to you in the beginning of term. **See grading rubrics posted in SAKAI for more details on expectations of your medical records.

2% of grade will be attained from ONE Herd Health Summary from your farm visit with Bus 2 and will include at least one peer-reviewed journal article reference (from within the last 5 years). **The Herd Health Summary will be due for ALL groups on the Monday following your FIRST week of Ambulatory rotation.**

**Rubrics for medical records and Herd Health Summary are provided on Sakai.*

Weekly assessments based on student performance

10% of the grading will be based on weekly assessments using the specific Ambulatory Services Clinical Competency Form. This form was created using AVMA's nine clinical competencies. Participants/Attending veterinarians will each fill out grading/assessment forms for each student on a weekly basis, each student composite score will be published on ExamSoft for their exclusive access. The clinical competencies required of you will be provided in a rubric attached in your Resources tab on SAKAI.

**See helpful hints document posted in SAKAI

III. Other requirements

It is imperative that students adhere to the following dress code. Failure to do so will result in the student being sent home. Please always be conscience of biosecurity. Please dress professionally;

you will be dealing with members of the public and representing yourselves, the school and your profession. Please leave your jewelry, valuable electronic accessories, and valuable sunglasses at home as we are not responsible for their loss or damage.

The following is compulsory attire:

a. Your nametag
b. A clean pair of clean coveralls or a complete set of clean scrubs.
c. Rubber boots OR Rubber pullover boots may also be worn if they are covering a pair of closed-toe shoes. They must be cleaned/disinfected between farm visits.
d. A functional watch
e. Each student must have their own stethoscope
f. It is also **strongly recommended** to bring a clipboard, a thermometer, pen and a notebook.

Diagnostics

I. **Detailed Diagnostic Laboratory outline**

a. **Necropsy**

- Develop the student's skill and experience in performing necropsy examinations of the common domestic species. Students will perform a complete necropsy in groups of 4-5 per case.
- Develop the student's ability to recognize lesions in various diseases. During a necropsy session, one student will record all the findings in a necropsy form provided.
- Use necropsy cases to develop the student's ability to integrate clinical signs, clinical pathology data, radiology, and gross and microscopic lesions into pathophysiological concepts of disease, diagnosis and/or cause of death. At the end of necropsy each group will be asked to summarize the main findings in assigned case and give a morphologic diagnosis based on the gross findings.
- Guide the student on how to write concise and complete necropsy reports. Each student will be expected to write one necropsy report on the case he/she participated in.

b. **Clinical Pathology**

- Critically interpret the results of laboratory tests in the light of history and clinical signs so as to form a rational diagnosis or differential diagnosis.
- Develop the ability to indicate further tests or course of action to reach a diagnosis.

c. **Parasitology**

- Learn to identify common parasites in feces, blood, urine, skin scrapings, and body fluids through appropriate procedures and tests.
- Interpret the significance of results in relation to history and clinical signs of cases submitted.

- Determine appropriate actions which may be suggested to the attending Clinician.

II. **Other requirements**

1. All students are expected to wear protective attire during the laboratory sessions including white laboratory coats, gloves, and closed toed shoes. For necropsy, the protective attire will include scrubs and protective rubber footwear (boots).
2. Identification badges should be worn during the laboratory session.
3. Leave your working place clean and tidy after the laboratory session.
4. Wash your hands thoroughly before leaving the laboratory.
5. Eating or drinking (except water) is strictly prohibited in the laboratory.

III. **Course goals (Instructor's point of view)**

a. This course seeks to reinforce the student's practical necropsy and clinical laboratory skills, and to strengthen the student's ability to interpret necropsy and clinical laboratory results

b. Emphasis will be placed on the importance of:

i. Correct sample collection and shipping of samples to laboratories.

ii. Provision of all relevant clinical information.

iii. Provision of clear directions on tests requested.

IV. **Course Schedule**

1.Necropsy

- **Tuesday, Wednesday and Friday** from 1.30 to 3.30 PM in the Postmortem room/Histopathology laboratory * However, on occasions, laboratories may take longer.

2. Clinical Pathology

- **Wednesday, Thursday and Friday** from 1.30 to 3.30 PM in the Clinical Pathology Laboratory

3.Parasitology

- **Tuesday** (Clinical path. group) **and Thursday (**Necropsy group**)** from 1.30 to 3.30 PM in the Microbiology laboratory.

V. Grading and assessment policy, and grading rubrics

The final rotation grade will be determined by the total grade earned during the separate rotations.

- For necropsy, assessment will be based on attendance, participation, and a written necropsy report
- For Clinical Pathology, students will be assessed on attendance, participation, interpretation of several clinical pathology cases.
- For Parasitology, assessment will be based on participation during the rotation and a station on the Final OSCE.

Supporting Faculty and Staff for all rotations

Faculty Members:	**Rank**	**Email Address**
SAC Clinicians:		
Francesca Ivaldi, DVM, MS	Associate Professor	fivaldi@sgu.edu
Tara Paterson, DVM, MSc	Associate Professor	tpaterson@sgu.edu
Lucian Peters, DVM, MSc	Assistant Professor	lpeters2@sgu.edu
Ashley Marshall	Visiting Professor	Ashleymarshall@gmail.cm
Amanda Marancik, DVM	Instructor	amaranci@sgu.edu
India Paharsingh, DVM	Instructor	IPaharsi@sgu.edu
Stacy Francis-Charles, DVM	Instructor	sfranci7@sguedu
Zsofia Vigh, DVM	Instructor	zvigh@sgu.edu
Adam Evans, DVM, M.E.d	Instructor	Aevans1@sgu.edu
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Hester McAllister, DVM, RCVS (DVR), Professor	Professor	HMcAllister@sgu.edu
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Diagnostic Clinical Faculty	**Rank**	**Email Address**

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Dawn Seddon BVSC, MSc, ACVP	Professor	dseddon@sgu.edu
Rhonda Pinckney, DVM, MSc, PhD	Professor	rpinckney@sgu.edu
Ms. Camille Coomansingh, BSc, MSc	Instructor	ccoomansingh@sgu.edu

Case Presentation Information

DATES and TIMES:

Tuesday, April 14th from 3:30 to 5:30 Groups 1A through 4A

Wednesday, April 15th from 3:30 to 5:30 Groups 4B through 7B

Thursday, April 16th from 3:30 to 5:30 Groups 7C through 10C

LOCATION: KB Taylor Hall (Blue)

- All students will be required to participate in **ONE** case presentation for the term.
- Cases can be selected from when the students were in the small animal rotations (medicine at SAC or GSPCA, surgery, or the emergency rotation), Ambulatory (LARF or private farm) and should include findings from Diagnostic Laboratory (Necropsy, Clinical Pathology or Parasitology) where appropriate.
- Students will present in groups of 4, 4, 3 students (groups 1-3) and groups of 4, 3, 3 (groups 4-10).
- Groups 1-3 will be divided as follows: the first four students listed in each group will present together, the second set of four students will present together and the last three students will present together.

- Groups 4-10 will be divided as follows: the first four students listed in each group will present together, the second set of three students will present together and the last three students will present together.
- The presentation should be prepared in Power Point format ONLY (no Google presentations or pdf) and should NOT be **longer or shorter than 8 minutes. There will be a 3-minute question and answer period** after the presentation.
- Cases should focus on a concise review of the clinical case, and the students should demonstrate the case presentation skills learned.
- Presentations should include a review of the medical, surgery AND anesthesia, herd health or emergency case including a brief review of signalment, history, physical examination findings, problem list, differential diagnoses list, diagnostics, therapeutics prescribed and, most importantly, a brief review of the primary disease, if one was diagnosed.
- Students may select cases on necropsy rotations
- Inclusion of photographs and diagnostic imaging (if applicable) **is required**.
- Each speaker should have an EQUAL amount of material to present.
- Everyone must speak for an even amount of time during the presentation.
- **A case presentation guideline sheet follows this page.**

Case Presentations Guidelines

Objective:

Presenting a case to a colleague will be a skill, which will be called upon repeatedly during the fourth-year clinics. The art of case presentation involves recalling of all veterinary knowledge related to a patient problem as well as the ability to organize the information in a meaningful way. A case presentation not only relays information but also reflects your understanding of the problem, ability to prioritize patient problems and ability to develop a problem lists. Our mission is to train you in the art of case presentation so that it comes naturally during 4th year rotations.

Presentation Format:

The presentations should be in Power Point format ONLY (no Google docs)
It should be 8 minutes long.

Presentation Content:

The presentations should follow the SOAP format:

- **Signalment**: name, age, sex, breed
- **Presenting complaint**
- **Relevant history**
- **Objective**: Physical exam findings and diagnostics (**make sure a urinalysis is performed whenever necessary, and if not performed, explain why**)
- **Assessment**: Problem list (in order of significance) with differential diagnosis list (in order of likelihood) followed by discussion
- **Plan:**
    - Proposed diagnostics-listed in order of priority and rationale for them
    - Treatments recommended, if any

Students must use and cite at least 2 reference sources (primarily journal articles), books, etc.

Please follow the following guidelines to ensure a strong presentation:

- Introduce yourselves.
- Pictures are required.
- Presentation should be **spellchecked** and reviewed for grammar, i.e. drug names, diseases, pathogens
- When giving diagnostic values, **normal ranges** for those values should be represented next to the actual value with the appropriate units. For example, PCV 34% (37%-55%).
- The amount of information/text in slides **should not be overwhelming** to the audience.
- Large fonts (minimum 24 font) should be used.
- Limit your presentation to 8 to 10 text slides.

- Tables and graphs should be used to clearly present complicated or in-depth information, whenever possible.

- Any drugs used and presented should be reported by **drug name** (not trade name) **in mg/kg** used, route and frequency. For example, Cefazolin 22mg/kg IV TID.
- Please ensure that the group has **communicated with the clinician in charge** to ensure accuracy of the presentation content.
- Timer/presenter view is recommended during the presentation and practicing the presentation will ensure a successful presentation on the day.
- **ATTIRE**:
    - Dress in business/professional attire
    - Slacks or dress pants **(NO shorts or jeans)**
    - Polo shirts or collared shirts
    - Knee length skirts or professional/business dresses
    - Buttoned up or high neck shirts, blouses, or dresses

PLO to CLO mapping

Course Level Outcome	***Program Level Outcome***
1. Perform and interpret physical exams on farm and small animals and apply the appropriate diagnostic and treatment plans.	*A: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11* *B: 1, 2, 5, 6, 7, 8* *C: 1, 2, 3, 4, 5, 6, 7, 8, 9*
2. Demonstrate effective client and colleague communication in a professional and concise manner.	*A: 4, 8* *B: 1, 2, 6, 8* *C: 8*
3. Prepare and deliver a case presentation using clinical cases.	*A: 1, 2, 3, 4, 5, 6, 7, 8, 11* *B: 1, 3, 4, 6, 8* *C: 1, 2, 5, 7, 9*
4. Manage cases including history taking and client interaction, physical examination, diagnostic work-up, problem solving, development and implementation of therapeutic plan.	*A: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11* *B: 1, 2, 3, 5, 6, 8* *C: 1, 2, 3, 4, 5, 6, 7, 8, 9*
5. Describe radiographs using standard terminology, propose a diagnosis, and recommend further diagnostic tests and treatment.	*A: 1, 4, 6, 11* *B: 1* *C: 1*

6. Perform a complete necropsy and collect samples for histopathology and other ancillary diagnostic tests.	*A: 1, 3, 4, 6, 7, 9, 11* *B: 1, 3, 4* *C: 7, 8, 9*
7. Correlate clinical signs with gross and histologic findings and generate a morphologic diagnosis.	*A: 1, 2, 3, 4, 6, 11* *C: 9*
8. Perform fecal, blood, urine, body fluid and cytologic examinations for parasitology and clinical pathology, make a diagnosis and recommend treatment and control strategies.	*A: 2, 3, 4, 5, 6, 9, 11* *B: 1, 4, 6* *C: 2, 5, 7, 8, 9*

SVM Course Code: SAMS 531 Advanced Cardiology Selective
Course Director: Dr. Anne Corrigan
Spring 2020 Online Course Completion

Please note: Updated course format includes condensed content due to travel week ASLO this is the PLAN…depending on how things work out I reserve the right to remove/adjust things based on our discussions!*

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Introduction Readings • Buchanan "History of Veterinary Cardiology" • Gordon and Nelson et al	Lectures via Panopto: None • Buchanan "History of Veterinary Cardiology" • Gordon and Nelson et al	**March 23-29** • **Pick** your abstract for April 6th (will post on forums) • **Read** the articles • **Post** your FAVORITE bit in the "History of Veterinary Cardiology" • **Post** your "things I had to look up on Forums. • **Ask** 1 question about someone ELSE's "things I had to look up"	Due by March 30th! Forums posts- 5 points Discussion on another post- 5 points
[ECG's] Lectures: 1. Orientation and course organization 2. ECG practice 3. Advanced ECG's 4. Advanced ECG's	[ECG's] Lectures via Panopto: none 1. MEA and advanced ECG's ZOOM session 2. Kittlesons' ECG chapter **PERUSAL**!	**March 30-April 5:** • **Participate** in Zoom Session Trying for Tuesday March 31st at 1 pm EST (Grenada time) • If you cannot make the Zoom it will be recorded for you! **Watch** it by Friday to participate in the forums discussion. • **Reading**: I just want you to recognized HOW much you do know!!	March 31's OR April 3rd Zoom (LIVE tuesday) OR Forums Participation (anytime due by that friday) 10 Points

Echo Lab: CPCR lab: Sim lab: 1. labs cancelled 2. Ettinger Cardiac Sounds	Echo and CPR 1. PERUSE the Echo chapter 2. Echo Practice on VIN 3. Crash Cart Articles 4. Ettinger cardiac sounds	**April 6-12:** • **READ** the crash cart articles, **PERUSE** the Echo chapter • **Listen** to Ettinger cardiac sounds • **Play** on VIN echo simulator • **Discuss** what you THOUGHT of the activities and anything you had to look up on Forums	Crash Cart Homework [due Apri 12th]* in conjunction with ECC selective…if you are in both USE THE SAME ONE!! 10 points
Abstract presentations	Abstract discussion in Forums	**April 13-19:** • **READ and RESEARCH** your abstracts • **Post** your "things I had to look up" on Forums. • **Ask** 1 question about someone ELSE's "things I had to look up"	Abstract "things I had to look up" 5 points Discussion on another post- 5 points
Final Session:	CET course?? Looking into this for us!!	**April 20-26:** **Zoom session to discuss the course and check in on your clinical preparedness**	

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
This course was INITIATED after the COVID-19 crisis. The entire course was redesigned for distance education.	Total points = 40 *Total points breakdown:* Participation in ZOOM or Forums discussions :30 Crash Cart Homework: 10 points

Learning outcomes: please list any CLO or LLO's which were omitted below:

Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. **Evaluate a current ECG case report and construct a professional presentation**
2. **Demonstrate CPR and appropriate teamwork on a model**
3. **Demonstrate echocardiography** ** replaced with VIN echo experience.
4. **Demonstrate auscultation skills**** replaced with online practice
5. **Utilize signalment, clinical signs, relevant history, auscultation findings and diagnostic testing to diagnose a variety of cardiac diseases in the SGU simulation laboratory*** replaced with on line case discussion and evaluation

ST GEORGE'S UNIVERSITY
SCHOOL OF VETERINARY MEDICINE
SAMS DEPARTMENT
***ADVANCED CARDIOLOGY* (1 credit)**
SAMS 531 TERM 6
Spring 2020

I. Course Faculty and Staff Information

Course Director: Anne Corrigan MS DVM MS DACVIM (SAIM), Professor, acorrigan@sgu.edu

Office Location: CASSIA BLDG

Office Hours: To be planned with class representative

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

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

II. Course location

Charter Hall Laboratory, SAC echo lab, SGU SIM Lab (both HIGH fi and Lo-Fi sides)

III. Prerequisite and/or co-requisite courses

current 6th term SVM Student

IV. Required resources

Ettinger and Feldman Textbook of Small Animal Internal Medicine 8th edition or Nelson and Cuoto Small Animal Internal Medicine.

V. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

Any Physiology text, Guyton or Cunningham

VI. Special accommodation

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

VII. Other requirements

Articles are assigned on the course calendar

VIII. Course rationale (catalogue course description)

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 CPCR and the mean electrical axis. To practice case management and to present a full case in a professional format. To practice client communication.

IX. Course-level Outcomes

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

1. Extrapolate relevant clinical data from presenting complaints, clinical signs, history, and physical examination for cardiology patients including emergency and critical care considerations.
2. Use relevant clinical data to create differential diagnosis list for cardiac conditions.
3. Use relevant clinical data to select and interpret appropriate diagnostic testing, including referral to diagnose a disease.
4. Use clinical data to design an appropriate treatment plan and determine the prognosis for diseases, including a consideration of antimicrobial resistance.
5. Recognize emergency presentations and considerations for cardiology patients.
6. Formulate appropriate client communications regarding history, diagnostics, treatment and prognosis.
7. Recognize zoonotic and contagious disease routes of transmission, associated risks in workspace, and select patients for isolation.
8. Perform CPR on a model and discuss important patient considerations for appropriate CPR. Calculate the MEA. Perform a cursory cardiac evaluation with the SAC ultrasound machine, be able to discuss the different views and measurements. Practice auscultation skills on simulation models.

X. Lesson-level Outcomes

See Appendix XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXI

XII. Course Schedule

See Appendix XXII

XIII. Grading and assessment policy, and grading rubrics

- 30% presentations
    - **One hour absence = 0.5 off of your OVERALL grade**
- 30% participation, expression of your knowledge base, and writing assignments
- 40% final practical examination - SGU Simulation Laboratory- Middle of campus now…across from upstairs Charter hall, you must dress appropriately!!

Presentations

- ECG's of the Month
  - Individual powerpoint presentation
  - 1 slide of signalment and history
  - 1-2 slides of ECG
  - 1 slide of diagnosis
  - 1-2 or 3 slide with bullet points of explanation
  - 1 slide of your discussion of new information, or something additional you had to look up
  - **5 minutes!!!!**

- ACVIM Abstracts 2019
  - Pick 1 abstract
  - Sign up today
  - Present the abstract
  - **5 minutes !!!**
    - 1-2 slides major concepts
    - 1-2 slides about new information
    - 1-2 slides about words/drugs/concepts you had to look up to explain
    - 1 slide of how this could/will increase our knowledge/why is this important

Writing Assignment

- Written paragraph (~250 words) submitted electronically that explains what:
  - 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
  - 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

- 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 other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

Read the assigned readings and come prepared to discuss them, participate in class discussions, participate actively in the labs, review the Ettinger cardiac sound recordings. Please discuss any concerns with Dr. Corrigan.

XV. Instructor's expectations of the student

To attend class, reading the assigned articles and participating in the discussions will be exceedingly helpful to your success.

XVI. **Professionalism statement**

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

XVII. **Attendance policy**

Students are expected to attend all classes for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Greater than 2 unexcused absences may result in a 0.5 decrease in your overall grade for the course.

If absence from individual classes, examinations, and 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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XVIII. **Policy regarding missing examinations and/or failure of submission of assignments**

MANDATORY ATTENDANCE- One hour absence = 0.5 off of your grade
The lectures and labs for this selective are only given during the scheduled times, there is not the opportunity to repeat a missed topic, laboratory, or examination.

XIX. ExamSoft Policy

N/A for this course, the final exam will be in a Practical exam format and will take place in the SGU High Fidelity Simulation Laboratory.

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. **Appendix: PLO, CLO, LLO Mapping**

Laboratory Session/lecture session	**Your lecture/lab Learning Outcome**	Course learning outcome Number/s
all	**1. Recognize and utilize appropriate terminology, for both veterinary professionals and clients**	**1 2 3 4 5 6 7, 8**
Labs 2, 3 and 4	**2. Evaluate a current ACVIM Cardiology research abstract and construct a professional presentation**	**1, 2, 3, 5, 6**

Labs 2, 3, and 4	**3. Evaluate a current ECG case report and construct a professional presentation**	**1 2 3 5 6**
CPR Lab	**4. Demonstrate CPR and appropriate teamwork on a model**	**6 8**
3 lecture hours and lab 1	**5. Interpret and discuss advanced ecg's, and be able to calculate the MEA**	**1, 2, 3, 4, 5, 6**
All labs and lectures have reading assignments	**6. Appraise and discuss current research articles on interventional cardiology, the history of veterinary cardiology, cardiac drugs and appropriate use, echocardiography, and CPR**	**1, 5, 6**
Lab 5	**7. Demonstrate/practice echocardiography skills**	**8**
All labs and lectures	**8. Understand and use appropriate scientific terms, abbreviations, and views**	**5 6 7 8**
Lab 6	**9. Demonstrate auscultation skills**	**6 8**
Lab 6	**10. Utilize signalment, clinical signs, relevant history, auscultation findings and diagnostic testing to diagnose a variety of cardiac diseases in the SGU simulation laboratory**	**1, 2, 3, 4, 6 8**
Due at lab 6	**11. Create a personal statement reflecting on the topics discussed**	**6**

XXII. **Appendix 2 Course Schedule**

Dates	***Topics***	***Readings PRIOR to lab***
March 9	ON the colorful calendar…however NOT meeting this day!!!	
March 16 130-220 230-320 330-420	Orientation and course organization Mean Electrical Axis Advanced ECG's Advanced ECG's	All: • Kittleson's ECG Chapter, in Sakai and on VIN library online
March 23 230-320 330-420	CPCR lab Group B Group A	• RECOVER section 7 • This will be in conjunction with the Emergency Selective • SIM lab Lo fidelity side
March 30 230-320 330-420 430-520	ACVIM Abstracts- Group 1 ECG's of the Month –Group 2 Interventional cardiology	All: • Gordon and Nelson et al • Statistics Simplified Paper • Ettinger Cardiac Sounds
April 6 130-220 230-320 330-420	ACVIM Abstracts –Group 2 ECGs of the month—Group 3 Pimobendan	All: • Haggstrom et al QUEST study 2008 • Haggstrom et al QUEST study 2013 • Boswood et al EPIC study
FRIDAY!! April 17 130-220 230-320 330-420	Echocardiography labs, **SAC** group 1 group 2 group 3	All • Kienle's Echocardiography Chapter
April 20 130-220 230-320 330-420	ACVIM Abstracts- Group 3 ECG's of the Month-Group 1 The History of Veterinary Cardiology	All: Buchanan
THURS!! April 23 130-415	Sim Lab- high fidelity side and Final Practical Examination ALL	Bring Stethoscope, white coat, scrubs, closed toe shoes, and a pencil

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

SAMS

Special topics in small animal orthopedic surgery
SAMS 534 Term 6
Spring 2019

I. Course Faculty and Staff Information

Tomas Guerrero PD Dr. med vet Dipl ECVS, Professor
Email: tguerrero@sgu.edu
Office location: Cassia Building ground floor. Office hours can be made by appointment.

II. Course location

III. See bellow in **XI Course Schedule**

IV. Prerequisite and/or co-requisite courses

Current 6th term SVM student

V. Required resources

Your small animal surgery notes and handouts from 5th term.
Any small animal surgery text, e.g. Fossum or Tobias & Johnston

VI. Recommended resources (texts, journal articles, course notes, laptop specs, etc.)

VII. Other requirements

VIII. Course rationale

THis course provides an in deepht sight on common ortopedic problems that students will face on a daily basis during the fourth year small animal surgery rotations. It consists of 15 hours of lectures of relevant topics in small animal surgery. These lectures will be presented in an interactive format to stimulate the students' active and enthusiastic participation. Principles of diagnosis, treatment, and outcome of orthopedic problems in small animals will be taught and discussed. Clinical cases will be presented and analyzed. The

course present common complaints, history, clinical signs, PE findings and specific diagnostic testing with the goal of students being able to learn about problem lists, make differential diagnoses, and introduce veterinary methods for case work up.

IX. Course-level outcomes

Upon successful completion of this course, the student will be able to recognize the most common orthopedic problems in small animal surgery and the state of the art procedures and implants needed to treat those disorders.. Students will be able to analyze and work out orthopedic clinical cases.

X. Lesson-level outcomes

See bellow

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

Course level outcome	SGUSVM program level outcome
1. Demonstrate in-depth knowledge of common orthopedic problems in small animals	A1,A2, A3, A4, A6, A7, A8, A11 B1, B2, B6, B8 C1, C8, C9
2. Plan treatment options for patients affected with fractures and common orthopedic problems	A3, A4, A6 B1, B2, B6, B8 C1, C2, C4, C5, C6, C8

XII. Course Schedule

Lecture N°/ Date/ Time	Topic	Goals	Learning objectives	**Venues**
1 & 2 Jan. 20 3.30 pm & 4.30 pm	Bone structure, blood supply and fracture healing under stable and unstable conditions	Review of bone anatomy. Introduce the concepts of relative and absolute stability, and how changes in movement affects bone healing.	Recognize the effect of different fixation techniques in fracture healing.	KB Taylor Hall Blue
3 Jan. 21 1.30 pm	Postoperative fracture assessment	Introduce students to a systematic approach to evaluate fracture healing (AAAA)	Be able to systematically evaluate bone healing in serial radiographic examinations	David Brown Hall
4-5 Jan 21 2.30 pm & 3.30 pm	Case discussions	Computer-based discussion of clinical fracture-patients using the AAAA system	Be able to discuss patient-fracture score, choose the best treatment option, and evaluate healing in radiographs	David Brown Hall
6 &7 Jan 22 3.30 pm & 4.30 pm	Evolution of internal fixation in small animals. Locking plate systems.	Review of the history and evolution of the internal fixation of fractures in small animals.	Know and understand the changes regarding fracture treatment occurring in the last decade, moving from rigid fixation and absolute stability towards a more elastic and biological fixation.	Andrew Belford Center Level 2 West
8 & 9 Jan. 23 3.30 pm &	Cranial cruciate ligament disease in the dog Stifle biomechanics. Biomechanics of TTA and TPLO techniques	Introduce to the pathophysiology and the most common techniques to treat this disease.	Understand the biomechanical basis of dynamic methods, and be able to explain the differences between	Andrew Belford Center Level 2 West

4.30 pm			commonly used procedures.	
10 Jan 24 10.30 am	TTA/ TPLO planning	Demonstrate how the techniques are planned in radiographs.	Be able to do the preoperative meassurements for a TTA and for a TPLO	Ray and Jan Sis 1
11-12 Jan 24 11.30 am & 3.30 pm	Total Hip Replacement in small animals	Introduce to different systems, principles, surgical technique and outcome.	Understand the principles behind total hip replacement in the dog; know the most commonly used systems, its inherent complications and what can be expected from this surgery.	Ray and Jan Sis 1 for both times
13 Jan 27 2:30 pm	Limb alignment	Introduce to principles of corrective osteotomies and limb alignment procedures.	Be able to diagnose a misaligned limb, to know the specific terminology, and to plan the needed required osteotomies.	KB Taylor Hall Blue
14 Jan 27 3.30 pm	Joint luxations	Introduce to elbow and shoulder luxations.	Be able to diagnose these problems and to offer a rationale option of treatment.	KB Taylor Hall Blue
15 Jan 28 11.30 am	Final exam			St. John Hall

XIII. Grading and assessment policy, and grading rubrics

Grading scale There will be 1 final examination worth a **total of 100% of the class grade**. The exam material will come from lectures and in class discussions. Students will be graded on a A to F Scale based on a final exam. All questions will be multiple choice or true-false, and of equal value. There will be approximately 30 questions.

Pictures, radiographs and /or drawings may be included in the exam. Excuses to attend special meetings will be considered upon the student's performance. SGU policy: no wristwatches will be allowed into exams, not on wrists or on the desk top. Exams and quizzes are sequestered. The only time when questions can be viewed is during the exam. Any make-up exams may be given in an ESSAY or Short-Answer Format and will take place using ExamSoft.

- Grading Scale

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

- All other exam policies are followed according to the SGU Examination Policy and the Student handbook.

XIV. Recommended study strategies

Active preparation for classes and participation in classes is expected.

XV. Instructor's expectations of the student

The student is expected to read the handouts and related uploaded materials before classes.

XVI. Professionalism statement

Please exhibit professional behaviour in class. Use of social media is not accepted during classes.

Turn cell phones off or silent them during lectures

XVII. Attendance policy

Attendance to lectures is **MANDATORY**. Students are allowed 1 unexcused absence. Two or more unexcused absences will result in **course failure.** Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will 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/year ONLY, and then you need a medical leave of absence.

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

A make-up exam will be given ONLY when an excuse from the student clinic is presented. Only documented excuses, via the University Health Clinic, or via the SGU web page (under General/Medical Excuse Submissions), will be accepted. If you don't think you are healthy enough to take an exam, please visit the clinic PRIOR to the time of the test. Excuses that are issued after the examination 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

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
2. examinations (e-Exams) at SGU. Students must ensure that their laptops meet the current minimum system requirements prior to exam day:

3. 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.
4. 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.
5. Examinees will be notified via MyCourses, of all exam related information. Email
6. notifications will also be sent from Examplify Support to examinees, notifying them of examinations available for downloading.
7. Examinees experiencing difficulties with their laptop are encouraged to visit the IT
8. department for assistance prior to exam day. Examinees needing a laptop must visit the Office of Institutional Advancement (OIA) to request an exam loaner.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
5. All examinees who present themselves to sit a University examination are required
6. to display a current SGU student identification card in order to gain access into the
7. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
8. present a government issued photo ID in order to gain access into the exam venue.
9. Students will consult the examination seating list posted outside the examination
10. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
11. discrepancies or seating problems will be reported to the Chief Proctor/Course
12. Director as unprofessional behavior.
13. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.

14. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
15. No communication of any kind is permitted between examinees after entering the examination room.

16. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
17. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
18. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
19. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
20. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
21. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
22. Students will be allowed to exit the venue when they have completed their exam and
23. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
24. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with SofTest's security features will be subject to academic disciplinary action.
25. Permitted Items—only the following items will be allowed into the exam venue:
    - Laptop and accessories
    - SGUID
    - Completely clear (see-through) bottle of plain water
    - Items specified by Course Director or permitted by Dean of Students (DOS) office
      *No other personal belongings will be permitted.

XX. Copyright policy

Appendices (if applicable): Course Schedule
CLOs
LLOs

PLO to CLO mapping Rubrics

Please be aware that this syllabus is just a simple guide. Some lectures may take more and others less than stated pending on the students' interest, participation and involvement for debate. Also is highly recommended to read from your required text books section.

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

***Advanced Topics in Small Animal Dermatology Syllabus* (1 credit)**

SAMS535 TERM 6

SPRING 2020

I. Course Faculty Information

Course Director: Tara Paterson, DVM, MSc
Email: tpaterson@sgu.edu
Office: Cassia building, 2nd floor

Visiting Professor: Robert Kennis, DVM, DACVD
Email: kennira@auburn.edu

II. Course location

Please refer to Course Schedule (Appendix 1) as venues for lectures and labs will vary throughout the course.

III. Prerequisite and/or co-requisite courses

LAMS503 (Introduction to Clinical Medicine)
SAMS522 (Small Animal Medicine I)

IV. Required resources

All required materials will be provided in electronic form on the course Sakai site

V. Recommended resources

Kirk & Muller's Small Animal Dermatology (7th ed). Miller, Griffin & Campbell (2013).

VI. Special accommodation

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

VII. Other requirements

Required attire will vary with each laboratory session:

Biopsy techniques lab: Scrubs, white lab coat & closed toe shoes

Cytology & histopathology labs: White lab coat & closed toe shoes

SAC rotations: Scrubs or professional attire, white lab coat & closed toe shoes

VIII. Course rationale (catalogue course description)

This selective course is designed to enhance the student's knowledge of Small Animal Dermatology and will build upon the foundations of veterinary dermatology laid in Term 2 (SAMS515), Term 4 (LAMS503) and Term 5 (SAMS522). The course will focus on the diagnosis and management of small animal dermatologic disease and will also provide the student with an opportunity to further enhance their diagnostic capabilities through the use of wetlabs and clinical experience. The course will be delivered through a collaborative effort between SVM faculty and a visitng veterinary dermatologist. Use of peer-reviewed literature will be encouraged to enable students to familiarize themselves with the current literature in veterinary dermatology.

IX. Course-level outcomes

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

- Obtain a thorough dermatologic history from a client and perform a dermatological exam on a cat or dog.
- Generate an appropriate list of differential diagnoses based on a patient's history, physical & dermatological exam.
- List and perform (in some cases) the appropriate dermatologic diagnostic test(s) and interpret the results.
- With regards to common small animal dermatoses (discussed within the course), the student is expected to be able to recognize symptoms, discuss disease pathogenesis and list the therapeutic options.
- Identify key diagnostic features on cytologic evaluation for select dermatologic conditions. He/she should be able to identify key dermal structures on a histopathological section of skin.
- Develop an appropriate surgical plan for excisional or punch biopsy of a routine dermal mass.
- The student is expected to prepare a case report based on a clinical case from their SAC rotation using at least one peer-reviewed publication and one veterinary textbook to research their topic.

X. Lesson-level Outcomes

See Appendix 2

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix 3

XII. Course Schedule

See Appendix 1

XIII. Grading and assessment policy, and grading rubrics

The current SGU SVM grading scale applies to this course.

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

Course assessment:

Final exam	70%
Group clinical case assignment	15%
Peer evaluation	5%
Attendance	10%

Final written examination:

The final written examination is comprehensive. Materials covered in both lecture and laboratory are examinable material.

Group clinical case assignment:

Students will work in small groups during their clinical rotation at the Small Animal Clinic. Each group will have primary responsibility for one case during the rotation. The group will be responsible for writing a report on the case they worked up. In the event that a group is not assigned a clinical case, a topic will be selected by the group (approved by the Course Director) for which the case assignment will be based. Further instructions on the case report will be provided to the students.

Peer evaluation:

Students will be responsible for completing a peer evaluation assignment for each of their group members. Failure to complete this task in full will result in a loss of all points associated with this component of the course. The average of a student's peer evaluations will be the grade earned. See Appendix 4 for Peer Evaluation rubric.

Attendance:
Based on the nature of this short course, attendance to all lectures and laboratories is **mandatory** (refer to Section XVII for further details).

XIV. Recommended study strategies

Since this is a short course, it is recommended that the student keep on top of their preparations and review for each lecture. Additional assistance is best arranged via email with the course director (tpaterson@sgu.edu). At that time, it can be decided whether a meeting with the visiting dermatologist is necessary or if assistance from the course director is sufficient. All topics discussed in lecture and in laboratory sessions are examinable material. Students should refer to the Lesson-Level Outcomes (Appendix 2) to guide their exam preparations.

XV. Instructor's expectations of the student

The student is expected to come prepared to each lecture/lab having done the appropriate review of course materials (as appropriate).
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.

XVI. Professionalism statement

Professional behavior in the classroom and laboratory facilities is expected at all times. Cell phones should be switched off or in silent mode during lectures/labs. The use of laptops, tablets, etc. in the classroom and laboratory for purposes *other than* learning is not acceptable. Ensure that all social media websites are logged off during class time.

XVII. Attendance policy

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy.

If absence from individual classes, examinations, and 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. *Lecture attendance policy:* Attendance to all lectures in this short course is **mandatory.** Failure to attend lecture will result in a loss of points as follows:
   - One unexcused absence from lecture/lab results in a loss of 50% of the student's attendance grade.

- More than one unexcused absence from lecture/lab results in a loss of 100% of a student's attendance grade.

b. *Laboratory session attendance policy:* Attendance to labs are **mandatory**. As per the 2016-2017 Student Manual, laboratory sessions are considered required educational activities (along with quizzes & exams). The Student Manual (ref page 101-102) states that students are allowed only two medical excuses and one non-medical excuse per year. This pertains to all required educational activities. For further details and procedures, please refer to the Student Manual.

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

Failure to submit the clinical case assignment by the due date will result in a zero grade for all group members. 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. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University. The Course Director reserves the right to change the content and format of 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.

Prior to Exam Day

1. Each student is required to have a laptop for the purpose of taking computer-based
2. 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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4. 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.
5. Examinees will be notified via MyCourses, of all exam related information. Email
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8. 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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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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given.
4. advance. The "start of the exam" is defined as the beginning of the download time, as it will be an essential part of every examination. No student shall be permitted to enter the exam venue after the download password has been given.
5. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.
6. All examinees who present themselves to sit a University examination are required
7. to display a current SGU student identification card in order to gain access into the
8. exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and
9. present a government issued photo ID in order to gain access into the exam venue.
10. Students will consult the examination seating list posted outside the examination
11. venue to find their assigned seat. Examinees may only sit in their assigned seat. Any
12. discrepancies or seating problems will be reported to the Chief Proctor/Course
13. Director as unprofessional behavior.
14. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and
16. ears must be pulled back. Hats or headwear with brims or bills or which cover the
17. eyes or ears are prohibited.
18. No communication of any kind is permitted between examinees after entering the
19. examination room.
20. Examinees arriving after the published examination time will not be allowed to enter
21. the examination venue if the exam password has been announced.
22. Examinees are not allowed to write notes on the white boards prior to the official
23. exam start time.
24. Examinees are not allowed to use a telephone or other communication device at any
25. point during the examination.
26. A restroom break is the only allowed break during an examination. Examinees may
27. not eat, smoke or communicate with anyone other than an assigned proctor during
28. a restroom break. Examinees must sign out and back in (and be accompanied by a
29. proctor), if permitted to leave the room during the examination for a rest room break.
30. Once an examinee leaves the examination area without signing out and back in as
31. stipulated, he/she will be considered to have concluded the examination.
32. To start the exam, the Chief Proctor/Course Director will provide examinees with the
33. exam password. Examinees SHOULD NOT start the exam until instructed to do so by
34. the Chief Proctor/Course Director.
35. Students will be allowed to exit the venue when they have completed their exam and
36. displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to

a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify's security features will be subject to academic disciplinary action.

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

*No other personal belongings will be permitted.

XX. Copyright policy

APPENDICES

Appendix 1: Course Schedule

DATE	TIME	LECT / LAB	TOPIC	INSTRUCTOR	VENUE
20-Jan	2:30	Lecture 1	Distribution patterns & differential diagnoses of canine pruritus	Kennis	Andrew Belford Center Study Hall level 3 east
	3:30	Lecture 2	Antipruritic therapy for dogs		
21-Jan	11:30	Lecture 3	Feline pruritic skin disorders	Kennis	KB Taylor Hall Blue
	2:30	Lecture 4	Canine pyoderma and antibiotic resistance		KB Taylor Hall Blue
	3:30	LAB	SAC rotation (Groups 1 & 2)	Kennis / Paterson	SAC
22-Jan	3:30	Lecture 5	Dermatophytosis diagnosis & treatment	Kennis	KB Taylor Hall Blue
	4:30	LAB	SAC rotation (Group 3)	Kennis / Paterson	SAC
23-Jan	3:30	Lecture 6	(Additional hour for topics 1-5)	Kennis	KB Taylor Hall Blue
	4:30	LAB	SAC rotation (Group 4)	Kennis / Paterson	SAC
24-Jan	10:30-12:30	LAB	Derm cytology	Kennis / Paterson	SVM Micro Lab
	3:30	Lecture 7	Zoonotic skin diseases	Kennis	Andrew Belford Center Study Hall level 3 east
	4:30	LAB	SAC rotation (Group 5)	Kennis / Paterson	SAC
27-Jan	1:30	Lecture 8	Interactive clinical case discussion	Kennis	Windref conference room
	2:30-5:30	LAB	SAC rotation (Groups 6,7,8)	Kennis / Paterson	SAC
03-Feb	1:30	LAB	Derm histopathology	Butler	SVM Micro Lab
	2:30	Lecture 9	Practical approach to common disorders	Paterson	KB Taylor Hall Blue
	3:30	Lecture 10			
10-Feb	1:30-2:30	LAB	Biopsy techniques -Group A Biopsy techniques -Group B	Paterson	JSAL
	2:30-3:30				
10-Feb			CLINICAL CASE ASSIGNMENTS DUE		
14-Feb	**10:30**		**FINAL EXAM**		**St John's Hall**

Appendix 2: Alignment of Course Level Outcomes with Program Level Outcomes

1. The student is expected to be able to obtain a thorough dermatologic history from a client and perform a dermatological exam on a cat or dog.	A1, B1, B2, C1, C5
2. The student is expected to be able to generate an appropriate list of differential diagnoses based on a patient's history, physical & dermatological exams.	A1, A3, C1, C5
3. The student is expected to be able to list and perform (in some cases) the appropriate dermatologic diagnostic test(s) and interpret the results.	A3, C1, C5
4. With regards to common small animal dermatoses (discussed within the course), the student is expected to be able to recognize symptoms, discuss disease pathogenesis and list the therapeutic options.	A1, A3, A4, A5, C1, C2, C5
5. The student is expected to be able to identify key diagnostic features on cytologic evaluation for select dermatologic conditions.	A1, A3, C1
6. The student is expected to be able to develop an appropriate surgical plan for excisional or punch biopsy of a routine dermal mass	C4
7. The student is expected to prepare a case report based on a clinical case from their SAC rotation using at least one peer-reviewed publication and one veterinary textbook to research their topic	A3, A4, A5, C1, C2, C5

Appendix 3: Lesson-Level Outcomes

Specific topics included in the course will be based on the visiting professor and are time-dependent.

Appendix 4: Peer evaluation rubric

SAMS535 Case Assignment Peer Evaluation rubric

	1	2	3	4	5
Team work & Effort	Student did not work well with other members of the group. Student failed to complete their responsibilities and/or effort was so poor that other members of the group had to take over the work.	Student had difficulty working in a group. Student failed to complete their responsibilities in a timely manner and/or their contribution required much revision due to lack of effort.	Student worked adequately with other group members. Work was done in a timely manner and adequate effort was made. However, there is room for improvement.	Student worked well with other group members. Work was completed in a timely manner. Good effort was put into their work. Minor improvements in either team work and/or effort are required.	Student worked well with other group members and went above & beyond in their responsibilities to the group work. Students displayed excellent leadership potential.
Professionalism	Student did not behave in a professional manner .	Student's professional behavior was lacking and would require major changes to be adequate.	Student's professional behavior was adequate, but there is room for improvement.	Student's professional behavior was generally good with only minor improvement needed.	Student's professional behavior was exemplary.
Communication	Student did not communicate effectively and needs to work on communication skills.	Student's communication skills were lacking and require major changes to be adequate.	Student's communication skills were adequate but there is room for improvement.	Student communicated effectively. Minor improvement needed.	Student communicated very effectively.

SVM Course Code: SAMS536 ECC Selective
Course Director: Dr. Talia Guttin
Spring 2020 Online Course Completion

Previous Course Lectures/Labs:	Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Euthanasia Lecture and Mystery Case Lecture	No lectures.		
Neuro homework assignment	No change (other than extended due date).		Submit neuro homework on Sakai Assignments (*due April 5, 10 pts*)
CPR Lab 1. pre-lab quiz 2. lab 3. post-lab homework	1. CPR homework- revised shortened version		Submit CPR homework on Sakai Assignments. (*due April 12, 10 pts*)
Final exam take-home	Final exam take-home		Submit final on Sakai Assignments. (*due April 24, 30 pts*)
Total Lectures: 2 Total Labs: 1 Total Assignments: 3	Total Lectures: 0 Total Labs: 0 Total: 3 assignments		Total assessment points: 50 points

Assessment Summary:

Original Point Allocation:	Revised Point Allocation:
Total points = 100 *Total points breakdown:* Attendance and participation 20 Discussion sessions 10 Lab attendance and pre-lab homework 10 Homework assignments 10 Final exam 30	Total points = 100 *Total points breakdown:* Attendance and participation 20 Discussion sessions 10 Lab attendance and pre-lab homework 10 Homework assignments 10 Final exam 30

Learning outcomes: please list any CLO or LLO's which were omitted below:
Due to condensed course content, it is expected that LO's will be prioritized as necessary.

1. Practice BLS CPR techniques.
2. Identify a patient with an endocrine emergency based on signalment, relevant history, and PE findings.
3. Triage and assess affected organ systems for each endocrine emergency, including prioritizing emergency treatment.
4. Discuss the prognosis of endocrine emergencies with owners.

ST. GEORGE'S UNIVERSITY

SCHOOL OF VETERINARY MEDICINE

DEPARTMENT OF SMALL ANIMAL MEDICINE AND SURGERY

EEMERGENCY AND CRITICAL CARE SELECTIVE SYLLABUS (1 credit)

SAMS 536 Term 6

Spring 2020

I. Course Faculty and Staff Information

Course Director: Talia Guttin, VMD, DACVIM (SAIM), Assistant Professor
Email: tguttin@sgu.edu
Office Location: Cassia Building, 2nd floor; Office Phone: ext. 3440
Executive Secretary SAMS Department: Ms. Emmanuel, femmanuel@sgu.edu.
Lecturers in this course:
Anne Corrigan, DVM, MS, DACVIM (SAIM), Professor, acorrigan@sgu.edu;
Stacey Byers, DVM, MS, DACVIM (LAIM), Assoc Professor, sbyers1@sgu.edu;
Mercedes Miccio, DVM, Assistant Professor, mmiccio@sgu.edu;
Firdous Khan, DVSc, MVSc, DACT, Associate Professor, fkhan8@sgu.edu;
Catherine Werners-Butler, DVM, PhD, MRCVS, DECEIM, Professor, cwerners@sgu.edu.

Office Hours: by appointment

II. Course Location

Lectures will be located in Taylor Hall unless otherwise specified in the Course Schedule (see Appendices).
All lectures will be recorded and archived via Panopto whenever lecture location allows.
Laboratories will be held in the Small Animal Clinic and the SIM lab, as specified in the Course Schedule.

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

Lecturers will use notes and/or slides. Notes and/or slides will be available on Sakai only, as pdf files, and will not be made available in hard copy. 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:
Small Animal Critical Care Medicine, Editors Silverstein & Hopper, Publisher Elsevier, 2nd edition.
Fletcher, et al. RECOVER CPCR Guidelines. Journal of Emergency and Critical Care, 22(S1); 2012: S102-131.

V. Recommended Resources

Videos and articles will be posted on Sakai.

VI. Special 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-level Outcomes

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

1. Identify relevant clinical data from presenting complaints, clinical signs, history, and physical examination findings for specific critical care topics.
2. Use relevant clinical data to guide emergency assessment, treatment decisions, and discuss prognosis for selected emergency conditions.
3. Explain the indications for and steps to perform common diagnostic and therapeutic emergency procedures and techniques.
4. Discuss moral and ethical conundrums associated with emergency and critical care medicine.

X. Lesson-level Outcomes

See Appendix XXI

XI. Alignment of Course Learning Outcomes with Program Learning Outcomes

See Appendix XXI

XII. Course Schedule

See Appendix XXI

XIII. Grading and assessment policy, and grading rubrics

Grading scale (complies with SGU and SVM examination policies)

>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:
Lecture attendance 20%
Discussion sessions attendance and participation 10%
Laboratory attendance and participation 10%
Pre-lab homeworks (3) 30%
Final exam 30%

XIV. Recommended Study Strategies

- Class and laboratory attendance and active participation
- 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,
- Use the Learning Objectives for each section/lecture, and "Talia's Tips" main points, to guide studying

XV. Instructors' Expectations of the Student

Students are expected to review relevant material from previous coursework, read any handouts, papers, or watch videos, and come to class/lab prepared for discussion and case studies.

XVI. Professionalism Statement (SGU Student Code of Conduct)

Students attending St. George's University are expected to conduct themselves with integrity, dignity, and courtesy, according to a code of conduct that defines the interests, reputation, and stature of the University community. Learning experiences at St. George's University are not only meant to develop strong academic skills, but also to cultivate students with positive professional attributes, who are well adjusted to the norms of social graces and good social behavior.

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

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

XVII. Attendance Policy

Attendance will be taken at every lecture and lab. Attendance is a vital part of the overall course grade, as outlined above.

If absence from individual classes, examinations, and activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed, and must be approved by the Dean of Students of SVM and the course director.

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

A make-up exam will be given only when a documented excuse from the University Health Clinic, the SGU General/Medical Excuse Submission web site, or direct approval from the SVM Dean of Students will be accepted. Excuses that are issued **after** the examination has begun will not be accepted.

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

XXI. Appendixes: Schedule and PLO, CLO, LLO Mapping

SAMS 536 ECC Selective Fall 2019 Lecture & Lab Schedule				
Lecture Time	**Date**	**Topic**	**Faculty**	**Location**
4:30-5:20pm	Jan 20	Focused U/S lecture	TG	Andrew Belford Center Level 3
1:30-2:20pm	Jan 21	Hemodialysis	TG	Charter Hall
1:30-2:20pm	Jan 27	Focused U/S Lab Group A	AC/TG	SAC
2:30-3:20pm	Jan 27	Focused U/S Lab Group B	AC/TG	SAC
3:30-4:20pm	Jan 27	Focused U/S Lab Group C	AC/TG	SAC
11:30a-12:20pm	Jan 28	Respiratory distress cat: cardiac vs. respiratory	AC	KBT Blue
11:30a-12:20pm	Feb 4	Emergency sedation/anesthesia cases	MM	WINDREF Conference Room
11:30a-12:20pm	Feb 11	Blocked goat	SB	TBD
1:30-2:20pm	Feb 17	Cath Lab Group B	TG	SIM Lab
2:30-3:30pm	Feb 17	Cath Lab Group C	TG	SIM Lab
3:30-4:30pm	Feb 17	Cath Lab Group A	TG	SIM Lab
11:30a-12:20pm	Feb 18	Pot-bellied pig acute abdomen	TG/SB	KBT Blue
1:30-2:20pm	Feb 24	Neurologic foal	CWB	KBT Blue
11:30a-12:20pm	Feb 25	Critical Care: Discussion	TG	KBT Blue
11:30a-12:20pm	Mar 10	Repro emergencies	FK	KBT Blue
11:30a-12:20 pm	Mar 17	Euthanasia in the ER: Discussion	TG	KBT Blue
1:30-2:20pm	Mar 23	CPR Lab Group C	AC/TG	SIM Lab
2:30-3:20pm	Mar 23	CPR Lab Group A	AC/TG	SIM Lab
3:30-4:20pm	Mar 23	CPR Lab Group B	AC/TG	SIM Lab
11:30a-12:20pm	Mar 24	Mystery emergency case	TG	KBT Blue
Final Exam: Take-home, due April 24th				

Course-level Outcomes

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

1. Identify relevant clinical data from presenting complaints, clinical signs, history, and physical examination findings for specific critical care topics.
2. Use relevant clinical data to guide emergency assessment, treatment decisions, and discuss prognosis for selected emergency conditions.
3. Explain the indications for and steps to perform common diagnostic and therapeutic emergency procedures and techniques.
4. Discuss moral and ethical conundrums associated with emergency and critical care medicine.

Mapping CLOs to Program Level Outcomes and AVMA Competencies:

Course Level Outcomes	SGU-SVM Program Level Outcomes	AVMA clinical competencies
Course Level Outcome 1	A1, A2, A3, A4, A6, A7, B4	A E F
Course Level Outcome 2	A1, A2, A3, A4, A5, A6, A7, A10, A11, B1, B4, C1, C2, C3, C5, C6	A B C E F H I
Course Level Outcome 3	A1, A2, A4, A6, A11, B3, B4, B5, B6, C1, C6, C9	A B E F H I
Course Level Outcome 4	B12, B13, B14, B16, C27	B C F H

Mapping of LLOs to CLOs:

Lecture/lab	Lecture/lab Learning Outcome	Course learning outcome
Cardiac vs. Respiratory Case	**1. Apply previous knowledge from core SVM coursework in cardiac and respiratory medicine to emergency scenarios**	**1 2 3**
Focused Ultrasound lecture and lab	**1. Define a focused ultrasound exam and describe its utility in the ER setting**	**2**
	2. Describe and practice the AFAST3, TFAST3, and VetBlue exam landmarks	**3**
	3. Apply the AFS scoring system to a patient and understand the utility of serial AFS scores	**1 2 3**
	4. Compare and contrast the utility and limitations of each type of exam	**3**
	5. Reinforce basic knowledge of ultrasound with regard to fluid, tissue, and air echogenicity and artifact	**3**
Hemodialysis lecture	**1. Identify the indications for dialysis**	**1 2**
	2. Discuss dialysis complications and prognosis	**2**
	3. Describe the function of dialysis and the different methods of performing dialysis	**2**
Pot-bellied pig ER case	**1. Apply previous knowledge from core SVM coursework to clinical scenarios involving the sick pot-belly pig, regarding emergency assessment, treatment, and prognosis**	**1 2**
ER sedation and anesthesia	**1. Apply previous knowledge from core SVM coursework to clinical scenarios in the topic of sedation and analgesia of emergency patients**	**1 2**
Central catheter lab	**1. Practice a situation where a medical procedure must be learned from a textbook, article, and/or video resources**	**3**
	2. Identify the indications and complications of central venous catheters in small animal patients	**1 2 3**
	3. Understand and practice the Seldinger technique and the application of this technique	**3**
Blocked Goat Case	**1. Apply previous knowledge from core SVM coursework to the clinical scenario of a blocked goat, regarding emergency assessment, treatment, and prognosis**	**1 2**
Discussions: Euthanasia, Critical Care	**1. Identify the moral and ethical conundrums of emergency and critical care medicine**	**4**
	2. Discuss these moral and ethical issues with classmates, exhibiting professionalism and communication skills	**4**
	3. Reflect on the discussions	**4**
Repro ER case	**1. Apply previous knowledge from core SVM coursework to clinical scenarios in the topic of theriogenology, regarding emergency assessment, treatment, and prognosis**	**1 2**
Neurologic foal	**1. Apply previous knowledge from core SVM coursework to a scenario of a neurologic foal regarding emergency assessment, treatment, and prognosis**	**1 2**
CPR lab	**1. Review RECOVER guidelines**	**2**
	2. Practice BLS CPR techniques	**1 2 3**
	3. Discuss ALS CPR and employ in mock scenarios	**1 2 3**
Endocrine ER case	**1. Identify a patient with an endocrine emergency based on signalment, relevant history, and PE findings**	**1**
	2. Triage and assess affected organ systems for each endocrine emergency, including prioritizing emergency treatment	**1 2**
	3. Discuss the prognosis with the owners	**2**

ST GEORGE'S UNIVERSTY

SCHOOL OF VETERINARY MEDICINE

SMALL ANIMAL MEDICINE & SURGERY DEPARTMENT

***Small Animal Clinical Nutrition* (1 credit)**

SAMS537 TERM 6

Syllabus – Spring 2020

I. Course Faculty and Staff Information

Course Director: Tara Paterson, DVM, MSc.
Email: tpaterson@sgu.edu
Office: Cassia building, 2nd floor

Visiting Professor: Cecilia Villaverde, BVSc, PhD, DACVN, DECVCN
Email: cvillaverde@expertpetnutrition.com

This course is provided via the Mark Morris Institute (MMI), a non-profit organization with a focus on veterinary nutrition education. Email for MMI: www.markmorrisinstitute.org

II. Course location

Due to COVID-19, the entire course will be delivered online.

III. Prerequisite and/or co-requisite courses

ANPH502 (Nutrition)
SAMS522 (Small Animal Medicine I)

IV. Required resources

All required resources will be available 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.markmorrisinstitutue.org)
- Small Animal Clinical Nutrition Quick Consult by Hand, Zicker, Novotny, published 2011.
- Applied Veterinary Clinical Nutrition by Fascetti AJ and Delaney SJ, published 2012. Wiley-Blackwell. (New edition coming soon).

- Nutritional Management of Hospitalized Small Animals, 1st edition by Daniel L. Chan, published 2015. Wiley Blackwell.

VI. Special accommodation

We understand that these are unprecedented times that not only put our students at risk for illness but also increased level of anxiety and uncertainty. Any student that is experiencing any extenuating circumstances as a result of the COVIC-19 pandemic (including, but not limited to: illness, illness of a family member, etc.), is asked to contact the Course Director and the Dean of Students so that accommodations can be made.

VII. Other requirements

N/A

VIII. Course rationale (catalogue course description)

The objective of this course is to provide students with advanced training in small animal clinical nutrition through the use of lectures, clinical cases and practical exercises that will help to prepare the student for veterinary practice. The goal of the course is to train students to critically evaluate every patient based on nutritional needs so that they may incorporate nutritional management into their daily practice upon graduation. Students will also learn how to use nutrition resources as well as the importance of incorporating evidenced-based science into their veterinary practice.

IX. Course-level outcomes (CLOs) & Alignment of CLOs with Program Learning Outcomes

Please refer to Appendix 2.

X. Lesson-level outcomes

Please refer to Appendix 3.

XI. Course Schedule

Please refer to Appendices 1a, b, c.

XII. Grading and assessment policy, and grading rubrics

The format for delivery of this course has been modified as a result of the distance learning implemented during the COVID-19 pandemic. As a result, all lectures will be delivered by the course Visiting Professor (VP) using pre-recorded lectures developed by the VP specifically for this term's course. The Body Condition Scoring lab has been

replaced by an at-home activity (see below). In the previous course design, the final examination was heavily weighted (80%). The final examination has been replaced by a series of topic quizzes (3-5 MCQ each), nutritional recommendation assignments and a nutrition case assignment (see below for details).

Course assessment:

Topic quizzes	40%
Topic assignments: Nutritional recommendations	40%
Nutrition case assignment	20%

Topic quizzes: Students will be asked to complete one post-topic quiz consisting of 3-5 MCQs per lecture topic. There will be a total of 9 quizzes. These will be posted on Sakai at 9am on the day of the lecture in the Quizzes & Tests on Sakai but will also be linked to the lecture topic's activities in the Lessons section of Sakai. Students will have a minimum of 3 days to complete the quiz (see Appendix 1b for specific due dates).

Topic assignments: Students will be asked to complete one assignment related to each of the six clinical conditions discussed in the course. The assignment will take the format of providing a nutritional recommendation based on a clinical case 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 in Assignments on Sakai but will also be linked to the lecture topic's activities in the Lessons section of Sakai. Students will have a minimum of 7 days to complete the assignment (see Appendix 1c for specific due dates). There will be NO assignments for the first three topics of the course.

Nutrition case assignment: Each student will be asked to complete a nutrition case assignment based on a fictitious case. Details of the assignment will be posted in Resources on Sakai and will be due by April 23 (the date of the originally scheduled final examination). The case will be created around a specific condition/ disease (that will be selected by the student) where nutrition plays a role in its management. The assignment will consist of:

- Brief discussion of the role of nutrition in the selected disease
- Development of a fictitious case with an appropriate patient signalment, history and diagnostic work-up
- Preparation of a nutritional recommendation including selection of an appropriate therapeutic diet, calculation of DER and daily feeding recommendation (and any other nutritional recommendations that may be relevant).

Body condition scoring activity: To replace the hands-on experience of the Body condition scoring laboratory, students will be asked to perform a body condition assessment of their own pet (where possible). In the event that the student deems their pet to be over-conditioned, they will have the opportunity to use their own pet to complete the topic assignment nutritional recommendation rather than use the case provided. For those students without ***in-home*** 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. Students should not leave their house to visit a friend/family in order to complete this activity. There is no grade associated with this activity since we recognize that some students may not have access to a live animal. Nevertheless, those students that do have access to a pet are encouraged to practice the techniques taught in the course resources provided.

Grading scale: The current SGU SVM grading scale applies to this course.

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

XIII. Recommended study strategies

As this course is being delivered in online format exclusively and adhering to the original course schedule that takes place over a short period of time, it is recommended that students try their best to follow the course schedule. It is completely understood that this may not be possible and any circumstances that interfere with the student's ability to carry out the course activities should be conveyed to the Course Director and Dean of Students. The Messaging tool on Sakai will be available for students to ask course-related questions but questions regarding the course *content* specifically should be addressed directly with Dr. Villaverde, the course instructor (cvillaverde@expertpetnutrition.com).

XIV. Instructor's expectations of the student

During this time of transition, the student is expected to do their best to review the recorded lectures that are posted on Sakai and complete the assignments within the recommended timeframe. It is understood that illness or other extenuating circumstances may prevent students from completing the required course work. Should this occur, please contact the Course Director and Dean of Students so an appropriate plan can be implemented. Completion of the course & instructor evaluations is encouraged and appreciated – particularly as we are using a

different method of delivery for the course. The thoughts, comments and constructive criticisms are extremely important and valuable as course development is a continual process. Most importantly, we ask students to take care of their mental & physical health during these trying times.

XV. Professionalism statement

Professional behavior is expected from all students with regards to working independently. All students are reminded of the Honor Code that condemns the sharing of quiz/test/examination questions. While discussion of cases is encouraged among members of the class, the sharing of completed assignments is not permitted.

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

Not applicable.

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

As mentioned previously in the Course Syllabus, it is understood that some students may encounter circumstances that interfere with their ability to complete the tasks of this course. Should this occur, students are asked to contact the Course Director and Dean of Students so that a plan can be developed. These will be dealt with on a case-by-case basis. Failure to complete a course assignment within the published timeframe *without* valid reason or consent from the Course Director will result in a zero grade for that/those assignment(s).

XVIII. ExamSoft policy

Not applicable.

XIX. Copyright policy (if applicable):

The materials (such as slides, handouts and video recordings) provided to students who are taking courses at St. George's University (SGU) are the intellectual property of the Faculty and/or Administration of SGU. 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.

APPENDIX 1: Course Schedules

Appendix 1a. Overall course schedule

DATE	TOPIC	POST-TOPIC QUIZ DUE DATE	ACTIVITY	DUE DATE
March 23, 2020	Course intro & Pet food math	March 26	n/a	
	Alternative diets	March 26	n/a	
March 24, 2020	Myths & client communication	March 27	n/a	
March 25, 2020	Critical care nutrition	March 30	Nutritional recommendation: Critical care case	April 1
March 30, 2020	Obesity management & prevention	April 2	Activity: Body condition scoring	
			Nutritional recommendation: Weight loss case	April 6
April 1, 2020	Diabetes mellitus	April 6	Nutritional recommendation: Diabetes case	April 8
April 2, 2020	Chronic kidney disease	April 7	Nutritional recommendation: CKD case	April 9
	Urolithiasis	April 7	Nutritional recommendation: Urolith case	April 14
April 3, 2020	GI disease	April 8	Nutritional recommendation: GI case	April 14
April 23, 2020	Nutrition case assignment due			

Appendix 1b. Post-quiz schedule

SAMS537 POST-TOPIC QUIZ SCHEDULE

Upon the completion of each lecture topic, students are asked to complete a short 3-5 MCQ quiz. The quizzes will be posted on Sakai @ 9am on the day of the lecture and will be available for a minimum of 3 days (see schedule below). Each quiz will be linked to the specific Lesson on Sakai for ease of access but can also be accessed via Tests & Quizzes.

DATE	TOPIC	QUIZ OPEN	QUIZ CLOSED
March 23, 2020	Course intro & Pet food math Alternative diets	March 23 March 23	March 26 March 26
March 24, 2020	Myths & client communication	March 24	March 27
March 25, 2020	Critical care nutrition	March 25	March 30
March 30, 2020	Obesity management & prevention	March 30	April 2
April 1, 2020	Diabetes mellitus	April 1	April 6
April 2, 2020	Chronic kidney disease Urolithiasis	April 2 April 2	April 7 April 7
April 3, 2020	GI disease	April 3	April 8

Appendix 1c. Course assignment schedule

SAMS537 ASSIGNMENT SCHEDULE

Upon the completion of each lecture topic, students are asked to complete a nutritional recommendation based on the clinical case provided. A template for the assignment is provided in Resources to standardize the exercise. The clinical cases will be posted on Sakai @ 9am on the day of the lecture. The assignment will be due a minimum of 7 days later (see schedule below). Each clinical case will be linked to the specific Lesson on Sakai for ease of access but can also be accessed via Assignments. A final assignment for the course will be due on April 23rd - details will be posted on Sakai in Resources.

DATE	TOPIC	ASSIGNMENT/ ACTIVITY	OPEN DATE	DUE DATE
March 23, 2020	Course intro & Pet food math Alternative diets	No assignment No assignment		
March 24, 2020	Myths & client communication	No assignment		
March 25, 2020	Critical care nutrition	Nutritional recommendation: Critical care case	March 25	April 1
March 30, 2020	Obesity management & prevention	Activity: Body condition scoring Nutritional recommendation: Weight loss case	March 30	April 6
April 1, 2020	Diabetes mellitus	Nutritional recommendation: Diabetes case	April 1	April 8
April 2, 2020	Chronic kidney disease Urolithiasis	Nutritional recommendation: CKD case Nutritional recommendation: Urolith case	April 2 April 2	April 9 April 14
April 3, 2020	GI disease	Nutritional recommendation: GI case	April 3	April 14
April 23, 2020	**Nutrition case assignment due**			

APPENDIX 2: Course Level Outcomes and alignment with Program Level Outcomes

Course level outcome (CLO)	**SGUSVM program level outcome**
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.	**A. Core Medical Knowledge** **B. Core Professional Attributes** **C. Core Clinical Competencies (Skills)**
List key nutritional factors associated with the diseases and physical conditions discussed within the course.	
Accurately perform calculations to determine a dog/cat's daily energy requirements (DER) and the necessary adjustments required to the DER to achieve a therapeutic goal.	
Describe the nutritional goals of management of specific canine and feline diseases and physical conditions and to develop an appropriate nutritional management plan.	
Describe the pathophysiology of certain small animal diseases which have recognized nutritional linkages.	
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 Spring 2020 COVID distance learning]	

APPENDIX 3: Lesson-level objectives

Lecture~~/lab~~ Learning Outcome (LLO)	Course learning outcome Number(s)
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	
Chronic Kidney Disease List the most critical nutrients for pets with kidney disease Make a nutrition plan for a pet with kidney disease including selection of an appropriate diet, calculation of energy needs, treats, and follow-up	

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	

SVM Course Code: **SAMS 539**
Course Directors: **Ms. Elizabeth Peach**
Dr. Marta Lanza-Perea (Sabbatical)

Spring 2020 Online Course Completion

*Please note: Updated course format includes condensed content due to travel week**

Previous Course Lectures/Labs:	*Updated Course Format:	Weekly Learning Schedule:	Assessment Schedule:
Management of Feline Overpopulation in Communities **Lesson Learning Outcomes:** 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	**Management of Feline Overpopulation in Communities** **Lesson Learning Outcomes:** 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. Discuss arguments against TNR and opposition faced by TNR advocates and programs. 5. State FeLV/FIV testing recommendations for community cats in a TNR clinic.	**March 23-29**	**1. Journal Article Review** **-Morgan Magelinski and Lauren Kiebler** -See Description and Grading Rubric in Syllabus. -**Due by April 3, 2020** -20.0 Points **2. Short Answer Assignment** -All students in SAMS 539 - Please watch the pre-recorded Panopto lecture on Sakai and describe 3 main concepts you learned or were impacted by from the lecture. Refer to the Lesson Learning Outcomes (LLOs). -Assignment posted on Sakai. -**Due by April 3, 2020** -5.0 Points

the clinic environment. 6. Discuss arguments against TNR and opposition faced by TNR advocates and programs. 7. State FeLV/FIV testing recommendations for community cats in a TNR clinic. 8. State vaccination recommendations for community cats in a TNR clinic. 9. Review and discuss scientific studies and case examples of TNR programs. 10. Practice effective community outreach techniques to educate the public about humane methods for managing community cats. 11. Discuss the benefits and success of TNR/SNR/RTF programs for individual cats, cat colonies, the community, and the shelter. 12. Design feline population management control plans for local shelters and communities	6. State vaccination recommendations for community cats in a TNR clinic. 7. Review and discuss scientific studies and case examples of TNR programs. 8. Practice effective community outreach techniques to educate the public about humane methods for managing community cats. 9. Discuss the benefits and success of TNR/SNR/RTF programs for individual cats, cat colonies, the community, and the shelter.		

Shelter, Community and Public Health **Lesson Learning Outcomes:** 1. Define the term zoonotic disease. 2. Identify effective and appropriate sanitation agents and procedures for the shelter. 3. Identify factors contributing to zoonoses in a shelter environment. 4. List examples of zoonotic agents in the shelter. 5. Explain the impact of zoonotic agents in the shelter. 6. Identify methods to prevent and/or manage zoonotic outbreaks. 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.	**Shelter, Community and Public Health** **Lesson Learning Outcomes:** 1. Define the term zoonotic disease. 2. Identify effective and appropriate sanitation agents and procedures for the shelter. 3. Identify factors contributing to zoonoses in a shelter environment. 4. List examples of zoonotic agents in the shelter. 5. Explain the impact of zoonotic agents in the shelter. 6. Identify methods to prevent and/or manage zoonotic outbreaks. 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.	**March 30-April 5**	**1. Journal Article Review** **-Danielle Raiano and Gabriela Sanchez** -See Description and Grading Rubric in Syllabus. -**Due by April 10, 2020** -20.0 Points **2. Quiz** -All SAMS 539 Students -Please watch the pre-recorded Panopto Lecture posted on Sakai and answer 5 multiple choice questions. -The quiz is open-book. -Posted on Sakai in Tests and Quizzes -**Due by April 10, 2020** -5.0 Points

11. Describe the role of the veterinarian in public health.	11. Describe the role of the veterinarian in public health.		
Euthanasia and Emotional Well-Being in the Shelter Environment **Lesson Learning Outcomes:** 1. Cite approved euthanasia techniques based on the AVMA Guidelines for Euthanasia. 2. Compare and contrast euthanasia protocols in a shelter versus private practice. 3. Determine best practice techniques for euthanasia in a shelter environment. 4. Identify legal and technical aspects of euthanasia. 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	**Euthanasia and Emotional Well-Being in the Shelter Environment** **Lesson Learning Outcomes:** 1. Cite approved euthanasia techniques based on the AVMA Guidelines for Euthanasia. 2. Compare and contrast euthanasia protocols in a shelter versus private practice. 3. Determine best practice techniques for euthanasia in a shelter environment. 4. Identify legal and technical aspects of euthanasia. 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	**April 6-April 12**	**1. Self-Reflection Assignment** -All students in SAMS 539 - Please watch the pre-recorded Panopto lecture on Sakai and perform a self-reflection exercise. Identify: a.) 3 Healthy and appropriate methods for stress management and self-care you utilized in Grenada. b.) 3 Healthy and appropriate methods for stress management and self-care you are currently using at home. c.) 3 Healthy and appropriate methods for stress management and self-care you plan to utilize in 4 th year clinics and

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.	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.		your veterinary career. -This assignment does not need to be submitted. It is meant as a self-reflection activity. **2. Zoom Meeting** -Optional Zoom Meeting to discuss topic hosted by Dr. Marta Lanza-Perea and Ms. Liz Peach. Session will be recorded. -Date: **April 10, 2020** -Time: **2 PM EST**
Group Oral Presentation	-Replaced by Peer Evaluations of Group Presentation Assignment	**April 13-19** **April 20-26**	**Group Oral Presentation** -Each group will submit a 10 Slide Power-Point Presentation (including notes) and a 500 word of less written summary of their presentation following syllabus guidelines. -See Description and Grading Rubric in Syllabus. -Submit assignment in Sakai. -**Due April 17, 2020** -25.0 Points **Peer Review of Group Oral Presentation**

			-The Group Oral Presentation will be peer reviewed by the 3 other groups and the course director using the established Grading Rubric in the Syllabus. -The peer review should include 2 strengths and 1 area of improvement in content or style. -Your grade will represent a combined total assessment from your peers and the course director. -Submit assignment in Sakai. -**Due April 24, 2020** -5.0 Points
Final Multiple-Choice Question Exam	-Replaced by Short Answer Formative Assessment	**April 27-May 3**	**Short Answer Final Exam** -The final exam will consist of 5 short answer, open book questions. The questions are designed to summarize the course learning outcomes. -Submit assignment in Sakai. -**Due May 1, 2020** -20.0 Points
Total lectures: 3.0 Hours	Total lectures (Panopto): 3.0 Hours		Total Student Hours for Assignments=12.0 Hours

Assessment Summary:

Original Point Allocation:	Revised Point Allocation
Total points = **100** *Total points breakdown:* 1. Final Exam=50 Points 2. Journal Article=10 Points 3. Group Oral Presentation=30 Points 4. Fear Free Certification=10 Points	Total points =**100** *Total points breakdown:* 1. Short Answer Final Exam=20 Points 2. Journal Article=20 Points 3. Group Oral Presentation =25 Points 4. Peer Review of Group Oral Presentation=5 Points 5. Fear Free Certification=20 Points 6. Lecture Assignments=10 Points ➢ Short Answer Assignment=5.0 ➢ Multiple Choice Quiz=5.0

Due to condensed course content, it is expected that CLO's will be prioritized as necessary.

1. Identify resources to provide appropriate and humane care for shelter animals and communities.
2. Explain current topics and emerging trends in the field of shelter medicine.
3. Identify the variety of career paths associated with shelter medicine.

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
SMALL ANIMAL MEDICINE AND SURGERY
SHELTER MEDICINE SELECTIVE (1 Credit)
SAMS 539 (Term 6)
Spring 2020

I. Course Faculty and Staff Information

Course Directors:

Elizabeth Peach, LVT/CVT, Demonstrator
epeach@sgu.edu
Office: Ray and Sis Hall, Ground Floor, VSL
Hours: By Appointment

Marta Lanza-Perea, DVM, MsC, Associate Professor
mperea@sgu.edu
Office: Cassia building, 2nd floor
Hours: By Appointment
Sabbatical for Spring 2020

Participating Faculty:

1. Visiting Professors in their Respective Fields of Shelter Medicine (via Remote Access):

- Dr. Katherine Polak, DVM, MPH, MS, DACVPM
- Dr. Melissa Bain, DVM,DACVB, MS, DACAW
- Ms. Consie von Gontard
- Dr. Jennifer Bolser, DVM
- Dr. Joellen Bruinooge, DVM.
- Dr. Elise Gingrich, DVM, MPH, MS

2. GSPCA:

- Ms. Luanna Minors, President and Executive Director
- Ms. Paula Lehov, Kennel Coordinator, Education Officer
- Shelter Staff, Administrative Staff, Volunteers, Board Members, Veterinarians

3. VSL Faculty and Staff:

- Dr. Emilly Turitto, Veterinarian, Instructor eturitt1@sgu.edu
- Jakobus Louw, Veterinary Technician jlouw@sgu.edu
- Quacy Matthew, Veterinary Technician QMatthew@sgu.edu
- Lydia Williams, Veterinary Technician LWillia8@sgu.edu
- Jude Modeste, Veterinary Technician JModeste@sgu.edu

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II. **Course Location**

- Please see Schedule for lecture times and locations
- Field Trip/ Wet Lab at the GSPCA, Lowther's Lane, Grenada
- High Quality High Volume (HQHV) Spay and Neuter Surgical Techniques and Medical Protocols Wet Lab at the Veterinary Surgical Lab

III. **Prerequisites** Current 6th term 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.

V. **Recommended Resources:**

Textbooks (Hard copies available at VSL for your use.)

- *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.

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Journals

- JAVMA
- American Journal of Veterinary Research
- Canadian Veterinary Journal
- Animal Sheltering Magazine
- Applied Animal Behavior Science
- Journal of Veterinary Behavior: Clinical Applications and Research
- Journal of Applied Animal Welfare Science
- Plos

➢ **Library Resource on SGU Carnage is a great resource to access materials and journal articles.**

Websites

- https://scholar.google.com/ (Google Scholar)
- https://abvp.com/ (American Board of Veterinary Practitioners)
- www.maddiesfund.org (Maddie's Fund)
- aspcapro.org (ASPCA Pro)
- sheltervet.org (Association of Shelter Veterinarians)
- bestfriends.org (Best Friends)
- www.avma.org (American Veterinary Medical Association)
- www.hsvma.org (Humane Society Veterinary Medical Association)
- www.americanhumane.org (American Humane)
- https://www.aspca.org/humane-alliance (ASPCA Spay/Neuter Alliance)
- animalsheltering.org (Animal Sheltering Online by the Humane Society of the United States)
- www.acc-d.org (Alliance for Contraception in Cats and Dogs)
- www.alleycat.org (Alley Cat Allies)
- https://training.fema.gov/ (FEMA Disaster Response Training)
- www.wsava.org (The World Small Animal Veterinary Association)
- www.sawanet (Society of Animal Welfare Administrators)
- https://theaawa.org/ (The Association for Animal Welfare Advancement)
- www.sheltermedicine.com (Koret Shelter Medicine Program-UC Davis College of Veterinary Medicine)
- www.sheltermedicine.vetmed.ufl.edu/ (Maddie's Shelter Medicine Program-College of Veterinary Medicine University of Florida)
- http://www.humanesociety.org/about/departments/pets-for-life/ (Pets for Life)

➢ **Additional Resources will be provided specific to each module by faculty and visiting professors.**

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VI. **Special 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**

Scrubs and closed toe shoes are required for the GSPCA Visit and the Spay and Neuter Surgical Techniques and Medical Protocols Wet Lab.

VIII. **Course Rationale**

This course will introduce students to the concept of Shelter Medicine and increase their knowledge of this emerging field, including such topics as herd health management, shelter population statistics, disaster preparedness, public health, disease prevention and zoonosis, population control, animal welfare, veterinary forensics, behavior assessment and modification, euthanasia protocols, and compassion fatigue. The field of shelter medicine is recognized by the AVMA as a specialty and valued for the benefits it can provide to animals, people, and the surrounding communities. The course will empower students with tools, resources, and skills to best practice shelter medicine in a variety of clinical settings upon graduation, following the Association of Shelter Veterinarians (ASV) guidelines. The course will also present new career opportunities, both in the US and internationally, in the field of shelter medicine, such as non-profit community outreach program management, behavior consultation, animal welfare, ethics, and advocacy, and veterinary forensics.

IX. **Course Level Outcomes (CLOs)**

- Discuss current topics and emerging trends in the field of shelter medicine.
- Utilize resources to provide appropriate and humane care for shelter animals and communities.
- Identify the variety of career paths associated with shelter medicine.

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X. **Lesson and Laboratory Level Outcomes (LLOs)**

Lecture/Laboratory/Exercise	Lesson Learning Outcomes
1. Shelter Animal Physical Health and Management and GSPCA Shelter Analysis	1. Define the term shelter. 2. List the Five Freedoms and explain their significance to shelter medicine. 3. Identify the functions of a modern shelter. 4. Compare and contrast the different types of shelter models. 5. Define the term capacity for care. 6. Utilize guidelines to calculate capacity for care for a specific shelter model example. 7. Explain the principles of herd health management and the importance of physical and behavioral well-being in the shelter environment. 8. Review the ASV Guidelines for Standards of Care in Animal Shelters and identify their application in a shelter. 9. Discuss Shelter Medicine as an ABVP Specialty and identify career opportunities in the field of shelter medicine. 10. Explain the value of vaccinations in a shelter and design an appropriate vaccine protocol for animals in a shelter environment. 11. Perform an analysis of a shelter utilizing the Association of Shelter Veterinarians (ASV) guidelines. Draft SOPs to implement changes for best practice.
2. Models of Sheltering and Population Statistics	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.
3. Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics	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.
4.Spay and Neuter Programs and HQHV Spay and Neuter Surgical Techniques and Medical Protocols Wet Lab	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. 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. 7. State appropriate spay/neuter age recommendations for shelter animals, owned cats, and owned dogs based on current resources/evidence. 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. Define the term High-Quality High-Volume Spay/Neuter (HQHV) clinics. 11. Review the ASV Medical Care Guidelines for Spay and Neuter and discuss their application to all spay/neuter clinic models.

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	12. Discuss High-Quality High-Volume Spay/ Neuter techniques, including pediatric patients, pedicle ties for feline spays, ovariectomies, flank spays, and scrotral approach to castrations. Cite specific examples related to surgical techniques and medical and management protocols. 13. Demonstrate proficiency in performing Miller's knots, pedicle ties in female cats, and figure-8 instrument ties in male cats. 14. Discuss autotransfusion protocols and practical application of the technique. 15. Discuss anesthetic protocol considerations in HQHV Spay and Neuter clinics. 16. 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. 17. Identify strategies, community outreach techniques, and public education, for effective spay/neuter outreach.
5.Shelter Animal Behavioral Health	1. Define how animals learn. 2. Discuss dog and cat training techniques, including clicker training. 1. Explain and describe Low-Stress Handling and Restraint techniques. 4. Explain and describe Fear Free Handling and Restraint Techniques. Show proof of completion of 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.
6. Disaster Preparedness	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. 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. Design a plan to set-up a temporary animal shelter in case of a disaster. 8. List courses (including FEMA) and resources for additional hands-on training in disaster response. 9. Review examples of Disaster Plans for Shelters and discuss their design and recommendations based on individual shelter needs. 10. Design an evacuation plan for an animal shelter in case of a disaster.
7. Management of Feline Overpopulation in Communities	1. Define the term community cat and classify the different types of community cats. 2. Describe the different methods for managing community cats, including TNR, SNR, RTF. 3. Discuss the key components of setting-up and managing successful TNR, SNR, and RTF programs from a shelter perspective and a community perspective.

	4. Describe safe and humane handling techniques for community cats in the spay/neuter clinic environment. 5. Explain best practices for medical and management protocols of community cats in the clinic environment. 6. Discuss arguments against TNR and opposition faced by TNR advocates and programs. 7. State FeLV/FIV testing recommendations for community cats in a TNR clinic. 8. State vaccination recommendations for community cats in a TNR clinic. 9. Review and discuss scientific studies and case examples of TNR programs. 10. Practice effective community outreach techniques to educate the public about humane methods for managing community cats. 11. Discuss the benefits and success of TNR/SNR/RTF programs for individual cats, cat colonies, the community, and the shelter. 12. Design feline population management control plans for local shelters and communities.
8. Shelter, Community, and Public Health	1. Define the term zoonotic disease. 2. Identify effective and appropriate sanitation agents and procedures for the shelter. 3. Identify factors contributing to zoonoses in a shelter environment. 4. List examples of zoonotic agents in the shelter. 5. Explain the impact of zoonotic agents in the shelter. 6. Identify methods to prevent and/or manage zoonotic outbreaks. 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.

9. Euthanasia and Emotional Well-Being in the Shelter Environment	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.
10. Journal Article Review	1. Critically analyze and summarize relevant literature.
11. Oral Presentation	1. Prepare and perform an oral presentation on a specific topic that integrates the knowledge gained during the course.

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XI. **Alignment of Course Level Outcomes with Program Level Outcomes (PLOs)**

Course Level Outcome	SGU SVM Program Level Outcome
1. Discuss current topics and emerging trends in the field of shelter medicine.	**A. Core Medical Knowledge** PLOs 1,2,3,4,5,6,7,8,9,10,11 **B. Core Professional Attributes** PLOs 12,13,15,17,18,19 **C. Core Clinical Competencies (Skills)** PLOs 22,23,24,25,26,27,28
2. Utilize resources to provide appropriate and humane care for shelter animals and communities.	**A. Core Medical Knowledge** PLOs 1,2,3,4,5,6,7,8,9,10,11 **B. Core Professional Attributes** PLOs 12,13,14,15,17,18,19 **C. Core Clinical Competencies (Skills)** PLOs 20,21,22,23,24,25,26,27,28
3. Illustrate the variety of career paths associated with shelter medicine.	**A. Core Medical Knowledge** PLOs 7,8,9 **B. Core Professional Attributes** PLOs 12,13,14,15,16,17,18 **C. Core Clinical Competencies (Skills)** PLOs 23,24,25,26,27,28

Please find a detailed description of Program Level Outcomes (PLOs) mapped to Course Level Outcomes (CLOs) at the end of the syllabus in the Appendix.

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XII. **Course Schedule**

Please find the course schedule at the end of the syllabus in the Appendix.

***Course schedule is subject to change based on visiting professors' availability. Notification will be made to the class via e-mail with any changes.**

XIII. **Grading and Assessment Policy, and Grading Rubrics**

Assessment and Grading Policy:

1. **Final Exam= 50%**
   - Consists of 50 Multiple Choice Questions
   - Material Covered includes all Lectures, Discussions, Journal Article Reviews, and Wet Labs
   - Exam Questions align with Course Level Outcomes and Lesson and Laboratory Level Outcomes
2. **Journal Article= 10%**
   - Evaluated by Course Directors using ExamSoft
   - **See Attached Rubric and Grading Criteria**
3. **Oral Presentation= 30 %**
   - Evaluated by Course Directors at the end of term using ExamSoft
   - **See Attached Rubric and Grading Criteria**
4. **Fear Free Shelter Program Certification=10%**
   - Completion of Fear Free Shelter Program
   - https://fearfreeshelters.com/

Final Evaluation:

Will encompass mandatory attendance (see note under attendance policy), participation in all discussions, one journal article review, one oral group presentation, completion of Fear Free Shelter Program, and a multiple-choice question exam.

Feedback for your journal article review and your oral group presentation will be posted on Sakai with their scores.

The overall grade for the selective will be posted on the course Sakai site and ExamSoft.

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Grading Scale: This course is graded with letter grade in accordance to the SGUSVM grading scale:

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

Addendum:

- **Journal Article Review**:

- Working in groups of two-three, students will be assigned a journal article topic based on the previous week's module. All groups were randomly selected. The group will be required to post their analysis of the article in Sakai under Assignments-Journal Article Review as a short Word document (500 words or less). The assignment is designed as an exercise in critically analyzing scientific literature and a review of the previous week's topic. The assignment is not meant to be a summary of the article you read. Students are encouraged to share new information learnt from reading that article.

- Grading will take into consideration the relevance of the article to a shelter environment, the field of shelter medicine in general, or to career or educational opportunities. All students are encouraged to read their classmates response in Sakai. At the beginning of class, a brief discussion can take place if needed.

- A recommended list of websites and journals have been provided in the Syllabus to students as a starting resource. Students are encouraged to use current articles (within the last 5 years). Students cannot use the same article listed under the weekly recommended/required resources for that week's module. Please site articles appropriately in your response.

- The topic, due date, and groups are listed in the Appendix of the Syllabus and also posted in the Readings and Assignments List for the respective module in Sakai. Any late assignments will be penalized one full letter grade

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Journal Article Review Rubric

5	A+
4	A
3	B
2	C
1	D
0	F

	Poor		Average		Excellent
1. Assessment well-written and incorporates professional terminology	1.0	2.0	3.0	4.0	5.0
2. Submitted by deadline	1.0	2.0	3.0	4.0	5.0
3. Assessment is concise (500 words) and to the point	1.0	2.0	3.0	4.0	5.0
4. Journal source is appropriate, relevant, and documented	1.0	2.0	3.0	4.0	5.0
5. Assessment is relevant to the module discussed or the field of shelter medicine	1.0	2.0	3.0	4.0	5.0
6. Student utilizes critical analysis skills	1.0	2.0	3.0	4.0	5.0
7. Article highlights or identifies new information learned and how to apply to a shelter	1.0	2.0	3.0	4.0	5.0
8. Originality	1.0	2.0	3.0	4.0	5.0
AVERAGE TOTAL SCORE					

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➢ **Oral Presentations:**

- Students will work in groups of two-three. All groups were randomly selected. Presentations will take place at the end of term and be up to 10 minutes with a 5minute discussion. Students can use Power Point format. The group is required to post their presentation in Sakai under Assignments-Group Oral Presentations 24 hours prior to the scheduled presentation date.

- Students can select from one of three topics:
  1. Shelter analysis and assessment using the GSPCA as an example. Students should utilize the ASPCA Shelter Care Checklists and the ASV Guidelines and Terminology to highlight:
     1) Two or three areas of "Ideal/Best Practice" and strengths
     2) Two or three areas of "Must/Unacceptable" and requiring improvement
  2. Create an outline of a disaster plan for the GSPCA/ SGU.
  3. Develop and discuss a written SOP (Standard Operating Procedure) for an area of improvement for the GSPCA.

- The presentations are designed as an exercise to critically analyze real world examples and scenarios with the objective of practical application to the shelter environment. This presentation will help the student gain more experience in public speaking and develop effective communication and teamwork skills. This presentation will assist the students in practicing for their final 6 th Term Presentations and for their clinical rotations.

Oral Presentation Rubric

5	A+
4	A
3	B
2	C
1	D
0	F

	Poor		Average		Excellent
1. Presentation Format (font, slides, size)	1.0	2.0	3.0	4.0	5.0
2. Presentation Content (information, use of pictures)	1.0	2.0	3.0	4.0	5.0

3. Presentation Organization (format)	1.0	2.0	3.0	4.0	5.0
4. Appearance (professional attire, body language)	1.0	2.0	3.0	4.0	5.0
5. Delivery (good volume, eye contact)	1.0	2.0	3.0	4.0	5.0
6. Ability to answer questions (knowledge, attitude, language)	1.0	2.0	3.0	4.0	5.0
AVERAGE TOTAL SCORE					

- **Fear Free Shelter Program Certification:**

- You will receive a certificate upon the completion of the course. Please upload the certificate to Sakai under your Assignments.
- Proof of Certificate needs to be uploaded to Sakai by Assigned Date (**Monday, April 20th , 2020**).
- The course consists of four On-Line Modules, approximately 1-1.5 hours each followed by a short quiz.
- Registration for the course is free when showing proof of student status.
- **Be aware that this counts for 10 % of your grade. Please manage your time accordingly.**
- The skills you learn will help reinforce a lot of things learned in class as well as assist you in your future career.
- Certification for this course can be added to your curriculum vitae/resume.
- Here is the information for the Fear Free Shelter Program: https://fearfreeshelters.com/register/

XIV. **Recommended Study Strategies**

- Attend all lectures and labs
- Active participation in class discussions and labs
- Utilize the resources provided by course directors and lecturers
- Habituate yourself to use the Founders Library and the provided resources
- 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 or scheduled office hours:
- Office hours can be arranged via email with Ms. Peach (epeach@sgu.edu) or Dr. Lanza (mperea@sgu.edu) -Sabbatical Spring 2020-

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XV. Instructor's Expectations of the Student

- The student is expected to read/skim the required articles and resources prior to class in preparation for that lecture or lab.
- The student is expected to submit their journal article reviews, oral presentations, and Fear Free Program certificate at the due deadline.
- The student is expected to work professionally with one another in their groups.

XVI. Professionalism Statement

- Please arrive on time for class and labs.
- If you are unable to attend class, an email is required as soon as possible, followed by a medical excuse if necessary.
- Students are expected to conduct themselves in an appropriate professional manner. Please be respectful, courteous and open to other people's opinions. This applies to everyone involved in the course, including the VP's via Skype/remote access. Cell phones should be switched off or silenced during lectures and labs.
- Dress Code:
  - Professional attire should be worn for lecture and the final oral group presentations.
  - Scrubs and closed toe shoes should be worn for any of the practical parts (GSPCA and wet lab).

XVII. Attendance Policy

- **Attendance is mandatory for all lectures**. Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy. **More than one unexcused absence may result in a 0.5 decrease in your overall grade for the course.**
- The lectures and labs for this selective are only given during the scheduled times. There is not the opportunity to repeat a missed topic, laboratory, or examination.
- **Attendance is also mandatory for the two wet labs (the GSPCA and the HQHV Spay and Neuter Surgical Techniques and Medical Protocols Wet Lab).**
- If absence from individual classes, examinations, and activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed.
- Select members of SGU SVM campus organizations (including, but not limited to, the Student Chapter of the Association of Shelter Veterinarians) have been granted permission to attend specific lectures at the discretion of the course directors.

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. Scheduling of examinations (regular, re-sit, completion, comprehensive, or exemption) is at the discretion of the University.
- Failure to submit assignments by the due date will result in a zero grade for all group members. This applies to the journal article review and your oral presentation.

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 will be notified via MyCourses, of all exam related information.
5. 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.

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. Students are permitted to download exams within 24 hours of the start of the exam. The "start of the exam" is defined as the distribution of the start password by the Chief Proctor. No student shall be permitted to enter the exam venue after the start password has been given. No student shall be permitted to enter the exam venue after the download password has been given.
4. An examinee who is experiencing a computer problem should notify a proctor immediately. Students whose computers fail to start at the beginning of the exam or crash during the exam will be directed to an

alternative venue to sit the exam or may be required to sit a completion exam at a later date. This will be recorded as an exam irregularity on each such instance.

5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to gain access into the exam venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and present a government issued photo ID in order to gain access into the exam venue.
6. Students will consult the examination seating list posted outside the examination venue to find their assigned seat. Examinees may only sit in their assigned seat. Any discrepancies or seating problems will be reported to the Chief Proctor/Course Director as unprofessional behavior.
7. No wristwatches of any type will be allowed in the examination halls, either on the arm or on the table.
8. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or headwear with brims or bills or which cover the eyes or ears are prohibited.
9. No communication of any kind is permitted between examinees after entering the examination room.
10. Examinees arriving after the published examination time will not be allowed to enter the examination venue if the exam password has been announced.
11. Examinees are not allowed to write notes on the white boards prior to the official exam start time.
12. Examinees are not allowed to use a telephone or other communication device at any point during the examination.
13. A restroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a restroom break. Examinees must sign out and back in (and be accompanied by a proctor), if permitted to leave the room during the examination for a rest room break.
14. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she will be considered to have concluded the examination.
15. To start the exam, the Chief Proctor/Course Director will provide examinees with the exam password. Examinees SHOULD NOT start the exam until instructed to do so by the Chief Proctor/Course Director.
16. Students will be allowed to exit the venue when they have completed their exam and displayed the "Congratulations! Your answer file(s) uploaded successfully," screen to a proctor. During the last ten minutes of the exam, examinees must remain seated until dismissed.
17. Examinees found violating any of the Examination Policies and Procedures including attempting to disable or tamper with Examplify 's security features will be subject to academic disciplinary action.
18. 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

*No other personal belongings will be permitted.

XX. **Copyright Policy** (if applicable):

ST GEORGE'S UNIVERSTY
SCHOOL OF VETERINARY MEDICINE
SMALL ANIMAL MEDICINE AND SURGERY
SHELTER MEDICINE SELECTIVE (1 Credit)
SAMS 539 (Term 6)
Spring 2020

APPENDICES:
1.Course Schedule

SAMS 539 SPRING 2020 Course Schedule

DATE	TIME	LOCATION	LECTURE TITLE-MODUE	LECTURER/ INSTRUCTOR
Friday, January 17 th	3:30-4:20 PM	Ray and Jan Sis 1	Shelter Animal Physical Health and Management	Ms. Liz Peach
Monday, January 20 th	1:30-2:20 PM	KB Taylor Blue	Models of Sheltering and Population Statistics	Dr. Jennifer Bolser
Monday, January 20 th	2:30-3:20 PM	KB Taylor Blue	Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics	Dr. JoEllen Bruinooge
Monday, January 27 th	1:30-2:20 PM	KB Taylor Blue	Spay and Neuter Programs	Ms. Liz Peach
Monday, February 3 rd	1:30-4:20 PM	VSL	Wet Lab: HQHV Spay and Neuter Surgical Techniques and Medical Protocols	Dr. Emily Turitto, Ms. Liz Peach, JSAL Faculty
Friday, February 14 th	10:30-11:20 AM	Ray and Jan Sis 1	Shelter Animal Behavioral Health	Dr. Melissa Bain
Monday, February 17 th	1:30-4:20 PM	GSPCA	Wet Lab: GSPCA Visit/Shelter Analysis	Ms. Paula Lehov and GSPCA Staff

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Monday, February 24 th	1:30-2:20 PM	Andrew Belford Center Level 3-East	Disaster Preparedness	Ms. Consie von Gontard
Friday, March 13 th	10:30-11:20 AM	KB Taylor Blue	Management of Feline Overpopulation in Communities	Dr. Katherine Polak
Friday, March 27 th	10:30-11:20 AM	Ray and Jan Sis 1	Shelter, Community and Public Health	Dr. Elise Gingrich
Friday, March 27 th	11:30-12:20 PM	Ray and Jan Sis 1	Euthanasia and Emotional Well-Being in the Shelter Environment	Dr. Elise Gingrich
Friday, April 3 rd	10:30-12:20 PM	KB Taylor Blue	Presentations	Students
Monday, April 20 th	11:30-12:20 PM	St. John's Hall	Final Exam	Students

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2.Journal Article Assignment

Journal Article Assignments Spring 2020

GROUP	ARTICLE TOPIC	DUE DATE
Arielle Bierman Eloisa Seligson	**Models of Sheltering and Population Statistics** **or** **Animal Welfare, Animal Cruelty and Neglect, and Veterinary Forensics**	Monday, January 27 th, 9 AM
Meghan Jeffcoat Sloane Hoffman	**Spay and Neuter Programs** **or** **High Quality High Volume Spay and Neuter Surgical Techniques and Medical Protocols**	Monday, February 10 th, 9 AM
Ashley Schimschock Alicia Royer	**Shelter Animal Behavioral Health**	Friday, February 21 st, 9 AM
Deborah Murphy Alexis Garbarino	**Disaster Preparedness**	Monday, March 2 nd, 9 AM
Morgan Magelinski Lauren Kiebler	**Management of Feline Overpopulation in Communities**	Friday, March 20 th, 9 AM
Danielle Raiano Gabriela Sanchez	**Shelter, Community, and Public Health** **or** **Euthanasia and Emotional Well-Being in the Shelter Environment**	Friday, April 3 rd, 9 AM

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3. Oral Presentation Group Assignment

Oral Presentation Group Assignments Spring 2020

GROUP	DUE DATE
Eloisa Seligson Alicia Royer Meghan Jeffcoat	Friday, April 3 rd 10:30-12:20 PM
Gabriela Sanchez Deborah Murphy Lauren Kiebler	Friday, April 3 rd 10:30-12:20 PM
Alexis Garbarino Ashley Schimschock Danielle Raiano	Friday, April 3 rd 10:30-12:20 PM
Morgan Magelinski Sloane Hoffman Arielle Bierman	Friday, April 3 rd 10:30-12:20 PM

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4. Program Level Outcomes (PLOs) to Course Learning Outcomes (CLOs) Mapping Detailed Description

Course Level Outcome	SGU SVM Program Level Outcome
1. Discuss current topics and emerging trends in the field of shelter medicine.	**A. Core Medical Knowledge** PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals. PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations. 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. **B. 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 15 Model lifelong continuing education and professional development. PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences. **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. PLO 27 Demonstrate and model effective client communication and ethical conduct. PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
2. Utilize resources to provide appropriate and humane care for shelter animals and communities.	**A. Core Medical Knowledge** PLO 1 Recall, understand, and adequately utilize multidisciplinary knowledge of basic structures and functions of healthy animals. PLO 2 Analyze homeostasis and disturbances of basic structures and functions of healthy animals. PLO3 Recall, understand, and adequately utilize knowledge of etiology, pathogenesis and pathology of common infectious, non-infectious, and zoonotic diseases, including biosafety and biosecurity considerations. 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. **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 15 Model lifelong continuing education and professional development. PLO 17 Demonstrate and model self-awareness including understanding personal limitations and willingness to seek advice. PLO 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity. PLO 19 Demonstrate appropriate sensitivity to client diversity, such as cultural, economic, and emotional differences. **C. Core Clinical Competencies (Skills)** PLO 20 Execute a comprehensive patient diagnostic plan and demonstrate problem solving skills to arrive at a diagnosis.

	PLO 21 Create comprehensive treatment plans. PLO 22 Analyze, design and execute appropriate plans for anesthesia and pain management considering patient welfare. PLO 23 Analyze, design and execute appropriate plans for basic surgery and surgical case management. PLO 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. PLO 27 Demonstrate and model effective client communication and ethical conduct. PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.
3. Illustrate the variety of career paths associated with shelter medicine.	**A. Core Medical Knowledge** 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. **B. 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 15 Model lifelong continuing education and professional development. 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 18 Understand and evaluate the organization, management and legislation related to veterinary practice, including biosafety and biosecurity. **C. Core Clinical Competencies (Skills)** 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. PLO 27 Demonstrate and model effective client communication and ethical conduct. PLO 28 Recognize and model an appreciation of the role of research in furthering the practice of veterinary medicine.

St. George's University

School of Veterinary Medicine

Course Director Listing - Spring 2020

Anatomy, Physiology & Pharmacology Department (Dept. Chair: Dr. Hector Zerpa)

Banner CRN	COURSES Term I	COURSE CODE	20 Credits	Course Director	SYLLABI SAVED
21021	Histology & Embryology	ANPH 501	5	Dr. Sunil Gupta	YES
21020	Anatomy I	ANPH 506	5	Dr. Mahesh Shriram Deokar	YES
21022	Physiology I	ANPH 512	5	Dr. Hector Zerpa	YES
21026	Clinical Orientation	LAMS 502	1	Dr. Keith Kalasi & Dr. Kerri Nigito	YES
21540	Basic Small Animal Nutrition	LAMS 540	1	Dr. Catherine Werners Butler	YES X 2
21539	Professional Development I	LAMS 541	2 (P/F)	Dr. Brian P Butler & Dr. Lauren Nicole Wise	YES X 2
21025	Radiology I	SAMS 501	1	Dr. Regine U Hagen Argudin Pina	YES X 2
Banner CRN	**COURSES Term II**	**COURSE CODE**	**21 Credits**	**Course Director**	
21118	Anatomy II	ANPH 503	5	Dr. Tom Aire	YES
21121	Veterinary Pharmacology I	ANPH 504	3	Dr. Kamashi Kumar	YES
21119	Physiology II	ANPH 513	3	Dr. Ulrike Zieger	YES
21541	Professional Development II	LAMS 542	2	Dr. Adria Rodriguez	YES X 2
21123	Bacteriology/Mycology	PTHB 503	4	Mr. Victor Amadi & Dr. Harry Harriharan	YES X 2
21120	Veterinary Immunology	PTHB 512	2	Dr. Diana Stone & Dr. Euan Allan	YES X 2
21122	Radiology II	SAMS 502	1	Dr. Regine U Hagen Argudin Pina	YES X 2
21124	Veterinary Physical Diagnosis I	SAMS 515	1	Drs. Francesca Ivaldi	YES

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	YES
21130	Ethics in Veterinary Practice	ANPH 522	1 (P/F)	Dr. Austin P. Kirwan	YES
21131	Veterinary Physical Diagnosis II	LAMS 501	1	Dr. Zainab Momoh & Dr. Kerri Nigito	YES X 2
21125	Parasitology	PTHB 505	4	Dr. Rhonda Pinckney	YES X 2
21126	Pathology I	PTHB 506	4	Dr. Brian P Butler	YES X 2
21127	Virology	PTHB 515	3	Dr. Sonia Cheetham-Brow	YES X 2
21129	Clinical Pathology	PTHB 532	4	Dr. Richard Kabuusu & Dr. Melinda Wilkerson	YES X 2
21347	Veterinary Research Investigator III	SAMS 504	1	Dr. Heidi Janicke	YES
Banner CRN	**COURSES Term IV**	**COURSE CODE**	**19 Credits**	**Course Director**	
21135	Introduction to Clinical Medicine	LAMS 503	4	Dr. Inga Karasek	YES X 2
21132	Pathology II	PTHB 507	5	Dr. Muhammad Bhaiyat & Dr. Camila Dores	YES X 2
21137	Veterinary Public Health	PTHB 510	2	Dr. Rohini Roopnarine	YES X 2
21134	Veterinary Epidemiology	PTHB 511	1	Dr. Rohini Roopnarine	YES
21138	Avian, Fish & Exotic Animal Diseases	PTHB 516	3	Dr. David Marancik	YES X 2
21133	Introduction to Surgical Skills	SAMS 514	1	Dr. Tara Paterson	YES
21136	Veterinary Anesthesiology	SAMS 520	3	Dr. Rodolfo Bruhl Day & Dr. Flavia Restitutti	YES X 2

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	YES X 2
21141	Theriogenology	LAMS 519	4	Dr. Firdous Khan	YES X 2
21545	Livestock Medicine I	LAMS 544	2	Dr. Stacey Renee Byers	YES X 2
21139	Diagnostic Imaging	SAMS 513	3	Dr. Regine U Hagen Argudin Pina	YES X 2
21140	Small Animal Surgery	SAMS 518	5	Dr. Rodolfo Bruhl Day	YES X 2
21143	Small Animal Medicine I	SAMS 522	3	Dr. Talia Guttin	YES X 2
21145	Introduction to Clinical Practice	SAMS 526	1 (P/F)	Dr. Wayne Sylvester	YES X 2
21144	Junior Surgery & Anesthesiology Lab	SAMS 527	2	Dr. Marta Lanza-Perea	YES X 2
21549	*Vet Ed Assessment Term 5*	*VEA 500*	*0*	*Dr. Anne Corrigan*	
Banner CRN	**COURSES Term VI**	**COURSE CODE**	**20 Credits**	**Course Director**	
21152	Veterinary Toxicology	ANPH 520	2	Dr. Arend Werners	YES
21146	Equine Internal Medicine	LAMS 505	3	Dr. Catherine Werners Butler & Dr. Lauren Nicole Wise	YES
21147	Food Animal Internal Medicine	LAMS 515	5	Dr. Stacey Renee Byers	YES X 2
21148	Professional Veterinary Development	LAMS 533	2 (P/F)	Dr. Lauren Nicole Wise	YES X 2
21153	Small Animal Medicine II	SAMS 524	4	Dr. Anne Corrigan	YES X 2
21149	Introduction to Clinical Rotations	SAMS 528	2	Drs. Wayne Sylvester, Elizabeth Cooksey & Alfred Chickweto	YES X 2
21157	Special Topics in Equine Practice	LAMS 537	1	Dr. Inga Karasek	YES X 2
21501	Production Animal Medicine & Surgery	LAMS 539	1	Dr. Stacey Byers & Dr. Kerri Nigito	YES
21155	Problem solving in Veterinary Parasitology	PTHB 534	1	Dr. Rhonda Pinckney	NO
21154	Advanced Cardiology in SAM	SAMS 531	1	Dr Anne Corrigan	YES X 2
21161	Special Topics in Small Animal Orthopedic Surgery	SAMS 534	1	Dr. Tomas Guerrero	YES
21296	Advanced Topics in Dermatology	SAMS 535	1	Dr. Tara Paterson	YES
21160	Special Topics in Emergency Critical Care	SAMS 536	1	Dr. Talia Guttin	YES X 2
21159	Small Animal Clinical Nutrition	SAMS 537	1	Dr. Tara Paterson	YES
21348	Shelter Medicine	SAMS 539	1	Dr. Elizabeth Peach & Dr, Marta Lanza Perea	YES X 2
DVM-Global Veterinary Medicine Track (TOTAL 41 credits)					
21297	Extra Mural Studies	PTHB 540	38 (P/F)	Dr Austin Kirwan	NO
21547	Food Hygiene & Meat Inspection	PTHB 541	1 (P/F)	Dr. Satesh Bidaisee	YES
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	

indicates changes implemented for the semester

(DVM = 123 cr; DVM-RCVS = 164 cr; DVM-VSRI = 135 cr)

DVM ELECTIVES SPRING 2019

21240	Large Animal Clinical Parasitology	ELEC 511	2 (P/F)	Dr. Rhonda Pinckney	YES
21163	Special Topics in Fish Medicine and Surgery	ELEC 512	2 (P/F)	Dr. David Marancik	NO