
# SCHOOL OF VETERINARY MEDICINE

## 2021–2022

St. George's University
SCHOOL OF VETERINARY MEDICINE
Grenada, West Indies

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# Course Archives
# Anatomy and Physiology

**ANPH 501 : Histology and Embryology**
This 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 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. The 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, placenta, and various organ systems. Important developmental anomalies occurring in the domestic species, and their various mechanisms leading to these will be discussed.
**Core Course**
**Credits** 5

**ANPH 503 : Anatomy II**
The basis of this course is the comparative regional anatomy of the main domestic species of animals: horses, ruminants, pigs, and domestic poultry. The course also includes didactic and laboratory sessions in fish anatomy. Emphasis is placed on those topics that are of particular clinical or applied importance. Formal lectures are accompanied by dissection sessions, with appropriate reference to the living animal.
**Core Course**
**Credits** 5

**ANPH 504 : Veterinary Pharmacology I**
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 both healthy and diseased animals, thereby analyzing species specific sensitivities and adverse/side-effects. 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.
**Core Course**
**Credits** 3

**ANPH 505 : Veterinary Pharmacology II**
Information is presented on drugs used in the management of acute inflammation and control of pain, antineoplastic drugs, anthelmintics, insecticides, antimicrobial agents, and antifungal drugs.
**Core Course**
**Credits** 3

**ANPH 506 : Anatomy I**

The course consists of a series of lectures on the general and systemic anatomy of the carnivores, the dog and cat. The lecture hall discussions (didactic lectures) will be accompanied by dissection of the cadavers in the laboratory. The laboratory sessions include thorough, step by step dissection of the dog and cat cadavers. Whenever necessary, appropriate clinical references and discussions will be incorporated while presenting the content in the class and laboratory session.

**Core Course**
**Credits** 5

**ANPH 512 : Veterinary Physiology I**

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

**Core Course**
**Credits** 5

**ANPH 513 : Veterinary Physiology II**

In the DVM program, veterinary physiology is covered by two courses: ANPH512/DVM 1 and ANPH513/ DVM2. Both courses focus on the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of animals, commensurate with the requirements for a physician providing primary care to a variety of veterinary patients. Students will integrate the acquired knowledge about physiological functions of organ systems and learn to explain mechanisms of whole-body homeostasis. Emphasis is placed on introducing the pathophysiology of diseases, which are commonly seen in veterinary practice.

The ANPH513 course covers the following systems: hematology (erythron; hemostasis); nervous system (i.p. the sensory nervous system); gastrointestinal system including fermenters; metabolism; endocrinology; and reproduction. This course also introduces independent group work, in which students are exposed to clinical case studies and give short oral presentations. Students share responsibility for a collectively earned group grade, and should demonstrate professional behavior including communication and team-working skills.

**Core Course**
**Credits** 3

**ANPH 520 : Veterinary Toxicology**

Basic and clinical aspects of the more common poisonings that affect domestic animals, birds, and wildlife will be considered. Initial lectures introduce basic toxicological principles, calculations, concepts of antidotes as they relate to treatment/prevention of toxic cases, and diagnostic/forensic (investigative) considerations. Emphasis is given to intoxication by pesticides (rodenticides, insecticides, herbicides), heavy metals (arsenic, copper, lead, iron, zinc, etc.), plants, mycotoxins, gases, feed additives, poisonous and venomous animal toxins, household toxins, prescriptions/ recreational/ over-the-counter medications, selected industrial pollutants, and to forensic considerations.

**Core Course**
**Credits** 2

**ANPH 540 : Pre-Clinical - Extra Mural Studies**
The entire EMS experience comprises 38 weeks of extra mural studies. The EMS is divided into 3 phases, each one consisting of one course: pre-clinical experience, preparatory clinical experience, and clinical experience.

This course is the pre-clinical experience component of the EMS course. The focus of the pre-clinical EMS course is for students to gain experience on the management, husbandry, and welfare related to healthy populations of the core species: bovine, ovine, porcine, equine, canine, feline, and avian.
**Core Course**

# Biology

**BIOL 211 : Conservation and the Environment**
This course is an introductory conservation biology course. As such, one of the primary goals of the course is to introduce students to the principles and general concepts of conservation biology. Students enrolled in this course will investigate current theories regarding the ongoing extinction of species. The primary focus of the course will be recent vertebrate extinctions. Students will become intimately acquainted with several species that we have lost (some within the lifetimes of the students) and several additional species that are currently on the verge of extinction. We will also be exploring ecological, educational, philosophical, economic and cultural values that affect human perceptions of conservation and extinction. This course will be intensive in terms of reading, writing, and self-expression. Students will be expected to verbalize their thoughts and observations on assigned readings in classroom discussions. Students will also help each other formulate and bring into focus, what will be their unique philosophical viewpoints on conservation and extinction. Student presentations will center on the basic conservation biology concepts introduced in the course. The formal concepts introduced in this class will be presented by your professors and will be supplemented by group discussions, lab/class activities, and field trips.
**Core Course**
**Credits** 3

**BIOL 215 : Biology and Diversity of Life**
This course is an introductory general biology course for non-science and new science majors. As such, one of the primary goals of the course is to introduce students to the principles and general concepts of biology.

Students will be introduced to some of the methods by which scientists gather information about the living world. Lectures emphasize the science of systematics, taxonomy, classification, nomenclature, genetics, evolution, ecology, and the role of biodiversity in sustainability and conservation of biodiversity.
**Core Course**
**Credits** 3

**BIOL 217 : Survey of Grenada Wildlife and Habitats**
This course is designed to introduce students to the vertebrate wildlife species (both native and non-native) that inhabit the island of Grenada. Students will learn to recognize, by visual and auditory cues as well as by field sign, many of the different species that we share this island with. Students will also learn to recognize the various wildlife habitats found in Grenada and will be able to associate specific vertebrate species with specific habitat. We will also explore conservation issues within Grenada including the complex issues of invasive species management and habitat loss. In addition, students will be developing scientific skills that will include: gathering, interpreting and communicating
**Core Course**
**Credits** 3

**BIOL 220 : General Biology/ General Biology Laboratory**
This course is designed to complement the Human Biology course so that in tandem, these courses provide a sound foundation for the biology curriculum ahead. It will introduce students to the basic principles of biology.

It includes the role of macromolecules in the cell, and cellular structure, organization, and communication. Energy storage via photosynthesis and the harvesting of energy through aerobic respiration will be explored. The cell cycle, meiosis, mitosis, genetics, the molecular basis of inheritance, evolution, and the origin of species will be explored.
**Core Course**
**Credits** 4

**BIOL 303 : Biomedical Anatomy**

Comprehensive mammalian gross anatomy course, using the dog as the model species; laboratory dissection; veterinary nomenclature with human correlates and the application of the anatomy to clinical situations. Prerequisites BIOL 1 and 2.

**Core Course**
**Credits** 4

**BIOL 320 : Genetics**

This is a basic course in Genetics appropriate for Arts and Science students as well as students of Premedical and Pre-Veterinarian studies. Genetics is presented over 16 weeks as part of the discipline-based curriculum in line with the expectations of the St George's University School of Medicine, designed to provide a fundamental basis for understanding Human Genetics pertinent to clinical medicine based on the Genetics Learning Objectives published by the American Society of Human Genetics (ASHG). You will be introduced to the language embedded in Medical Genetics and Molecular Biology. These general competencies and specific objectives are described in the ASHG MEDICAL SCHOOL CORE CURRICULUM IN GENETICS. Specifically, this course is designed to introduce you to the fundamental design of DNA leading to the structure and function of the human genome.

You will learn how recent advances in genetic research have led to a greater ability to diagnose and treat many human disease states:

- Module 1 - Begins with an introduction to the history of genetics where you will learn how traits are inherited.
- Module 2 - Begins with understanding how genes are organized within genomic DNA. You will learn of the importance of this organization according to how many copies of a gene are required and their exact location within the genomic DNA.
- Module 3 - You will learn how genes are expressed.
- Module 4 - You will learn about linking the information that is found in an organism's DNA and how it is related to the way an organism looks and behaves, also known as "Genotype to Phenotype".

A basic understanding of chemistry, biology, and physics will be assumed.

**Core Course**
**Credits** 3

**BIOL 321/BIOL 331 : Molecular Biology/ Molecular Biology Laboratory**

This upper-division course is designed to help students develop an understanding of the molecular mechanisms that biological organisms use to store and preserve genetic information, the means by which they use that information to create functional biological structures, and the techniques that are commonly used to manipulate and study these processes in the laboratory. A basic understanding of chemistry, biology, genetics, and biochemistry will be assumed.

**Core Course**
**Credits** 4

**BIOL 344 : Cell and Developmental Biology**

Introduction to animal development emphasizing vertebrate embryo, mechanisms governing morphogenesis and cell and tissue differentiation. The course covers topics ranging from microscopy, cell cycle, cell labeling techniques, gametogenesis (formation of sperm and eggs), organogenesis (formation of tissues), and evolution. The material is comparative using examples from both invertebrates and vertebrate model systems. The student will be provided with a foundation of classical embryology (embryo anatomy) while focusing on differential gene expression as the driving force that shapes an embryo. Topics of interest to society including human infertility, human birth defects, assisted reproductive technologies and embryonic stem cells will be included in the curriculum.

**Core Course**
**Credits** 3

**BIOL 401 : Microbiology**

This course is a 4-credit course for premed, prevet, Foundation to Veterinary Medicine, and Biology, Ecology, and Conservation students. It is taught over 16 weeks in two 75-minute weekly sessions.

Major components of the course are lectures, practical laboratories, quizzes, online activities/ assignments, and self-study.

The aim of the course is to introduce you to the topic of microbiology. By looking at the basic characteristics and interactions of microorganisms with their environments, you will obtain an overall understanding of their beneficial and harmful contributions to ecosystems and human colonization. This exposure to the disciplines of bacteriology, mycology, virology, and immunology is intended to serve as a basis for understanding microorganisms and microbial processes (Life Sciences/Biology) and as a foundation for more in-depth future studies (pre-professional programs).

**Core Course**
**Credits** 4

# Chemistry

**CHEM 122/CHEM 123 : General Chemistry I/ General Chemistry I Laboratory**

This course, General Chemistry I, examines topics such as the nature and properties of matter; atoms, molecules and ions as basic building blocks of matter; measurement in chemistry; calculations involving chemical formulas and equations; general properties of aqueous solutions; electronic structure of atoms; periodic properties of the elements; basic concepts of chemical bonding; concepts in thermochemistry; characteristics of gases.

This course, General Chemistry I Laboratory, is designed to reinforce some of the concepts discussed in the General Chemistry I lecture (CHEM 122). It exposes them to basic technical and safety skills required for a chemistry laboratory. It also allows students to apply the scientific process while examining topics such as properties of matter, measurements, chemical formulas, thermochemistry, and basic concepts of bonding and molecular structure.
**Core Course**
**Credits** 4

**CHEM 124/CHEM 125 : General Chemistry II/ General Chemistry II Laboratory**

This course, General Chemistry II, examines topics such as the impact of intermolecular forces on the physical properties of solutions; chemical kinetics and chemical equilibrium; acid – base and other types of equilibria; chemical thermodynamics and the role of entropy in chemical reactions; electrochemistry with the emphasis on oxidation-reduction reactions.

This course, General Chemistry II Laboratory, examines topics such as the impact of intermolecular forces on the physical properties of solutions; chemical kinetics and chemical equilibrium; acid – base and other types of equilibria; chemical thermodynamics and the role of entropy in chemical reactions; electrochemistry with the emphasis on oxidation-reduction reactions.
**Core Course**
**Credits** 4

**CHEM 222/CHEM 223 : Organic Chemistry I/ Organic Chemistry I Laboratory**

This course, Organic Chemistry I, is the first semester one in a one-year course in Organic Chemistry for Pre-Clin, Pre-Vet and Biology students. It includes: the nomenclature and classification of organic molecules; the structure and reactivity of the hydrocarbons (alkanes, alkenes, alkynes), alkyl halides and alcohols; the study of substitution and elimination reaction mechanisms; and an introduction to stereochemistry.

This course, Organic Chemistry I Laboratory, is the laboratory component of CHEM 222. It gives students taking CHEM 222 the opportunity to carry out experiments which augment the content they have covered in the classroom. It included experiments to demonstrate the chemical reactions of alkanes alkyl halides and alcohols, and molecular geometry.
**Core Course**
**Credits** 4

**CHEM 224/CHEM 225 : Organic Chemistry II/ Organic Chemistry II Laboratory**

This course, Organic Chemistry II, is a continuation of the material covered in Chemistry 222. Both constitute the one-year organic chemistry required by most professional schools. Lecture topics include but not limited to the structure, reactivity and synthesis of carbonyl compounds (Aldehydes, ketones, carboxylic acids, anhydrides, acyl halides, esters and amides), amines, aromatic compounds, and biologically related molecules (Carbohydrates, amino acids, and proteins). The course will also provide an introduction to spectroscopy used for the characterization of chemical structures in organic chemistry.

This course, Organic Chemistry II Laboratory, is meant to reinforce some of the organic chemistry concepts in CHEM 224, especially characteristic reactions used in identifying the different functional groups in organic chemistry. Students will carry out physical and chemical experimental methods, used to identify organic compounds and also carry out some reactions that would synthesize some specific organic compounds.
**Core Course**
**Credits** 4

**CHEM 450/CHEM 451 : Biochemistry/ Biochemistry Laboratory**

Living organisms are construed principally from macromolecules, ie proteins, lipids etc. In addition certain proteins (enzymes) catalyze most of the reactions occurring within cells. This course is designed to deal with the structure and function of proteins (including enzymes, cofactors and antibodies), carbohydrates, nucleic acids (DNA and RNA) and lipids (including membranes structure). All cells require a continual supply of energy in the form of adenosine triphosphate (ATP). This course begins by describing the structure and significance of ATP and explains how ATP is synthesized. The key process of the TCA cycle, oxidative phosphorylation, glycolysis and fatty acid degradation will all be described. The course will also explain how macromolecules such as carbohydrates and lipids are synthesized from simpler precursors.

This course, Biochemistry Laboratory, is meant to reinforce some of the Biochemistry concepts and techniques discussed in the Biochemistry lecture (CHEM 450), as well as expose students to routine procedures, such as TLC chromatography, spectrophotometry, enzyme assays and gel electrophoresis. A basic understanding of Chemistry, Biology is assumed.
**Core Course**
**Credits** 4

# Communications

**COMM 204 : Public Speaking**

This course, Public Speaking, is designed to help students develop communication skills, both oral and written, that contribute to academic, vocational, personal and social success in a wide variety of contexts. This is achieved through practical application of the four methods of speech delivery—Impromptu, Extemporaneous, Manuscript and Memorization.
**Core Course**
**Credits** 3

# Computer

**COMP 111 : Computer Concepts & Applications**

This course is designed to introduce students to basic computer concepts and to provide them with the necessary tools and techniques to produce documents, spreadsheets and presentations. The student will also be introduced to internet use and principles. This course will cover areas such as: computers systems, hardware and software, file management, document production, working with spreadsheets and presentations.
**Core Course**
**Credits** 3

# ELEC

**ELEC 507 : Study Skills for Veterinary Medical Education**

Students are exposed to factors affecting success in veterinary medical school and metacognition groups/teams/questioning. It includes assessment of learning in courses and self-assessment as a learning strategy, examination techniques, learning styles and approaches to learning, application of learning styles, and learning strategies for basic science courses, as well as veterinary medical problem solving for clinical cases. Multiple-choice test-taking skills are discussed.
**Core Course**
**Credits** 2

**ELEC 511 : Large Animal Clinical Parasitology**

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 arc required that consider broad issues relating to the biological factors associated with the development of drug resistance as well as modem 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 ruminant s and horses using evidence-based principles, and how drug resistance can be prevented and managed, while still achieving superior parasite control that is sustainable.
**Core Course**
**Credits** 2

**ELEC 512 : Special Topics in Fish Medicine and Surgery**

Students participate through practical clinical experience and perform a variety of medical and surgical techniques.

Students master the art of clinical examination, disease diagnosis, surgical and therapeutic approaches for fish species. Appropriate emphasis is placed on species-specific behavioral and physiological adaptations.
**Core Course**
**Credits** 1

**ELEC 513 : Bioethics Today**

This course is designed for students with an interest in bioethics who want to further develop their knowledge and professional competencies. It deals with newsworthy topics including public health, medicine, professionalism, research, veterinary medicine, and others.
**Core Course**
**Credits** 1

**ELEC 514 : Forensics for First Responders**

This course serves as an introductory course of forensic procedures as they may be needed by a health care or law enforcement professional. Future physicians, veterinarians, public health officials or law enforcement personnel will study the underlying principles and concepts of modern forensic procedures with emphasis on preservation of evidence and securing of crime scenes, and proper maintenance of the chain of custody in dealing with crime scene evidence.
**Core Course**
**Credits** 1

**ELEC 517-520 : Research Experience**

Research Experience These courses provide students with the opportunity to engage in one-one faculty-mentored, focused research projects in veterinary medicine. They provide a flexible mechanism for obtaining one to four (1-4) course credits for successfully completing the research learning outcomes.
**Core Course**
**Credits** 1-4

# English

**ENGL 107 : College English I**

This course introduces students to skills of academic reading, writing and critical thinking, thus training them to write clearly and intelligently in their various program disciplines.
**Core Course**
**Credits** 3

**ENGL 213 : College English II**

This course is the continuation of ENGL 107 College English I, and focuses on strengthening students" critical thinking, reasoning and research skills.
**Core Course**
**Credits** 3

# Interdepartmental Courses

**IDGS 807 : Research Design and Biostatistics**
This course is designed to provide students with the skills necessary to conduct population-based research, consider questions being asked, and select appropriate measurement tools and types of data to be collected.

Also addressed will be data management and the ethical considerations of conducting population research.
**Core Course**
**Credits** 3

**IDGS 900 : MSc Seminar**
**Core Course**
**Credits** 1

**IDGS 901 : MSc Project Proposal Seminar**
**Core Course**
**Credits** 1

**IDGS 902 : MSc Written Project Proposal**
**Core Course**
**Credits** 2

**IDGS 903 : MSc Thesis**
**Core Course**
**Credits** 15

**IDGS 904 : MSc Thesis Seminar**
**Core Course**
**Credits** 2

**IDGS 905 : MSc Thesis Defense**
Principles of Epidemiology is the investigation of the factors that determine the distribution and dynamics of health and disease in human populations. The course covers the measure of disease frequency, descriptive epidemiology, study types, and methods to document variation in disease occurrence. The tools of epidemiology are used in all aspects of public health to describe the patterns of illness in populations, design research studies, evaluate public health programs, and keep abreast of changes in the health status of populations.
**Core Course**
**Credits** 1

# Large Animals

**LAMS 501 : Veterinary Physical Diagnosis II**
This course is intended to introduce 3rd term veterinary students to the practice of the physical diagnostic skills of an 'entry level' veterinarian. The course consists of practical lectures, hands-on laboratories, along with case-based modules. The laboratory exercises are tailored to build upon the skills learned in LAMS 502 Clinical Orientation and incorporate material previously learned in the didactic science course.
**Core Course**
**Credits** 1

**LAMS 502 : Clinical Orientation**
This course is designed to expose the first-term SGU veterinary student to the basics of physical examination and handling of domesticated species. In addition, pertinent information regarding breeds, colors, and special characteristics of common small and large animal species will be presented. The course utilizes the SGU Simulation Laboratory for introductory cardiac and thoracic auscultation prior to live-animal physical examination laboratory sessions. Veterinary Clinical Orientation provides the foundation for additional SGU clinical skills courses held throughout Terms 2 through 6.
**Core Course**
**Credits** 1

**LAMS 503 : Introduction to Clinical Medicine**
This course is designed to introduce fourth-term students to the practice of clinical medicine.

It is a team-taught course where presenting complaints, history, clinical signs, physical examination, and specific diagnostic testing is used to design problem lists, differential diagnoses, and introduce veterinary methods for case workup. Individual student assignments utilize practical case evaluation and use of current research via electronic journals for support of case evaluation. This course provides the foundation to the third-year courses that specifically cover small animal, equine, and food animal medicine.
**Core Course**
**Credits** 4

**LAMS 505 : Equine Internal Medicine**

This course is designed to familiarize the sixth-term SGU student with the etiology, pathophysiology, epidemiology, clinical presentation, diagnostic evaluation, and treatment of commonly-observed equine diseases. Emphasis is placed on the clinical approach for evaluation, diagnosis, and treatment of the sick equine patient (both chronic and emergent), as well as up-to-date therapeutic opportunities available to equine veterinarians as detailed in the current scientific literature. Herd health issues, the importance of client education, and euthanasia issues are discussed.

**Core Course**
**Credits** 3

**LAMS 515 : Livestock Medicine II**

This course is part 2 of the 2 part Livestock Medicine course series. The principles of diagnosis, treatment and prevention of disease of bovine, ovine, caprine, swine and camelids are taught utilizing a lecture format and integrated case discussions to illustrate the context and application of material presented and to promote development of problem-solving skills. Individual and heard 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 4th year clinical rotations, the North American Veterinary Licensing Examination, and veterinary practice after graduation. This course will continue to build on the livestock topics presented in earlier courses.

**Core Course**
**Credits** 3

**LAMS 516 : Large Animal Surgery I**

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

**Core Course**
**Credits** 2

**LAMS 519 : Theriogenology**

Students are instructed in the diseases affecting the male and female reproductive systems of the large and small domestic mammals. Causes and treatment of male and female infertility are considered, as are obstetrical procedures in normal parturition and in dystocia. Techniques involved in breeding, artificial insemination, and embryo transfers are reviewed along with methods for determination of pregnancy in various species.

**Core Course**
**Credits** 4

**LAMS 533 : Professional Veterinary Development VI**

This course is the sixth of 6 courses within the curriculum focused on professional development. Through experimental learning methods, students will be exposed to topics and skills related to personal development, self-care, ethics and animal welfare, communication skills, business and financial literacy .

**Core Course**
**Credits** 2

**LAMS 537 : Special Topics in Equine Practice**
This course provides an opportunity for equine-oriented students to work through commonly encountered disorders found in equine general practice. There will be individual and group research opportunities, small group discussions as well as hands-on laboratories. Students should become familiar with commonly observed practice problems with focus on evidence-based clinical therapies in equine medicine today.
**Core Course**
**Credits** 1

**LAMS 539 : Production Animal and Medicine Surgery**
This course is aimed at students with an interest in production animal medicine. The goal is to expose students to relevant topics in more depth and give them the opportunity to have some hands-on experience to learn common skills in the field.

The course is taught through a combination of group discussions, wet labs, role play and case studies. They will be required to present a case study in a small group as well as show professional behavior throughout the course.
**Core Course**
**Credits** 1

**LAMS 540 : Basic Small Animal Nutrition**
This course provides an introduction into basic concepts of animal nutrition focusing on dogs and cats.

It contributes to the foundation for other courses in the curriculum, such as small animal internal medicine and surgery. The course promotes a practical perspective regarding the different nutrient sources and additives used in the manufacture of pet food. The course includes the following main topics: 1) selection of diets based on adequate balance of ingredients; 2) additives and energy requirements in a diet; 3) adjustment of nutritional requirements according to variables such as the age, breed, physical activity or physiological status of an animal; 4) nutritional assessment of commercial feed content; and 5) safety issues regarding feed preparation and storage.
**Core Course**
**Credits** 1

**LAMS 541 : Professional Development I**
This course is the first of six 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.
**Core Course**
**Credits** 2

**LAMS 542 : Professional Development II**
This course is the second of six courses within the curriculum focused on professional development. Through experiential learning methods, students will be exposed to topics and skills related to personal development, self care, ethics, and animal welfare, communication skills, business and financial literacy, and evidence based veterinary medicine.
**Core Course**
**Credits** 2

**LAMS 543 : Professional Development III**
This course is the third of 6 courses within the curriculum focused on professional development. Through experiential learning methods, students will be exposed to topics and skills related to personal development, self-care, ethics and animal welfare, communication skills, business and financial literacy and evidence based veterinary medicine.
**Core Course**
**Credits** 2

**LAMS 544 : Livestock Medicine I**
This course is part 1 of the 2 part Livestock Medicine course series. The principles of diagnosis, treatment and prevention of disease of bovine, ovine, caprine, swine and camelids are taught utilizing a lecture format and integrated case discussions to illustrate the context and application of material presented and to promote development of problem-solving skills. Individual and heard 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 4th year clinical rotations, the North American Veterinary Licensing Examination, and veterinary practice after graduation. This course will continue to build on the livestock topics presented in earlier courses.
**Core Course**
**Credits** 2

**LAMS 545 : Large Animal Surgery II**
This is part 2 of the 2 part Large Animal Surgery course series. It aims to introduce students to surgical conditions, including trauma, encountered in the livestock animal and equine species in terms of pathogenesis, diagnosis, treatment, prognosis and management. Emphasis will be placed on the clinical approach to evaluate, diagnosis and treat the patient, as well as up-to-date therapeutic opportunities and prognosis where available. Clinical reasoning will be honed using case-based scenarios, which in addition will encourage better in-depth learning of the material.Mastery of material presented in this course will prepare the student for the 4th year clinical rotations, the NAVLE board exam, and veterinary practice after graduation.
**Core Course**
**Credits** 2

**LAMS 547 : Professional Development IV**
This course is the fourth of 6 courses within the curriculum focused on professional development. Through experiential learning methods, students will be exposed to topics and skills related to personal development, self-care and animal welfare, communication skills, business and financial literacy and evidence based veterinary medicine.
**Core Course**
**Credits** 2

**LAMS 548 : Introduction to Livestock Nutrition**
Livestock nutrition is included in the veterinary curricu lum to aid students in understanding the relationship between nutrients in feeds and the health of livestock including equids. It provides a basic perspective of how nutrition is adapted for production/performance characteristics and provides and understanding of abnormalities that may arise during that process.
**Core Course**
**Credits** 1

**LAMS 549 : Professional Development V**
**Core Course**
**Credits** 1

# Math

**MATH 120 : College Mathematics**
This course provides a working knowledge of college-level mathematics and its applications. The following topics will be covered in this course: sets, computation, measurements, statistics, algebra, relations, functions and graphs, geometry, and trigonometry.
**Core Course**
**Credits** 3

**MATH 220 : Statistics**
Introductory statistics is designed to assist the student in acquiring a good intuitive grasp of statistics, specifically in terms of what it is, how and when to apply various statistical techniques to a host of managerial and other situations, how to interpret the results and draw meaningful conclusions from the data.

In today's world, the employment of simple but powerful statistical tools is critical to successful business practices. Introductory statistics will give students exposure to a wide range of statistical tools and concepts required in a quality management environment, as well as in various business fields and other functional areas. The ability to collect, organize, massage, interpret, and present data, is a powerful asset to possess. These skills will be developed through the study of various statistical methods and techniques in this course. Additionally, the student will begin to develop a systematic approach to problem solving and statistical decision making.
**Core Course**
**Credits** 3

# Physics

**PHYS 201 : General Physics I**

This course consists basically of linear kinematics, works, power and energy, momentum, and a brief introduction to heat, thermodynamics, and sound. This course is a noncalculus course designed to enable students to understand the basic principles of mechanics, heat, and sound.
**Core Course**
**Credits** 4

**PHYS 202 : General Physics II**

This course is an introduction to basic principles of electricity, magnetism, electromagnetism, alternating current, electric fields, and optics. This course is a non-calculus course.
**Core Course**
**Credits** 4

# Preclinical

**PCLN 301 : Learning Strategies for Preprofessional Programs**

This is a skills development course through which students in the preprofessional programs will find creative and constructive ways to gain and apply knowledge in learning situations. Students will develop a commitment to learning in a more personalized, efficient, and effective way. Significant attention will be given to study strategies and how to best place these strategies into practice in their course of study. Class sessions will provide opportunities for students to gain exposure to various learning strategies and for students to share their experiences, successes, and concerns with other students. Students will gain exposure to various learning techniques. Students will be exposed to levels of learning, types of studying, time management and planning, active review, memory, note-taking strategies, group study, and methods of developing critical-thinking skills.
**Core Course**
**Credits** 1

**PCLN 302 : Communication for Health Professions I**

Practicing professionals need to be able to read, understand and evaluate research studies. They need to be able to critically evaluate research data and to determine whether research methods and arguments are sound and valid. They need to be able to summarize, paraphrase and synthesize published work, with appropriate documentation, to support their own professional decisions, claims and arguments. This course is designed to support students in developing these skills.
**Core Course**
**Credits** 2

**PCLN 303 : Communication for Health Professions II**

This course aims to train students of the health professions to write clearly and effectively, to identify and correct punctuation and grammatical errors, and to write in style and registers that are appropriate for academic and professional contexts. Students will analyze several writing tasks commonly required in the health professions in order to identify and then apply the principles contributing to effectively performing these tasks. A process approach will be taken.
**Core Course**
**Credits** 3

# Psychology

**PSYC 201 : Introduction to Psychology**

This course will introduce students to the scientific discipline of psychology. Students will examine the emergence of the major schools of thought and the historical figures who contributed to the development of psychology as a science. Topics of study will include the history of psychology, research methods, the basis of behavior, sensation and perception, states of consciousness, learning and cognition, intelligence, motivation, social psychology and life span development. Within each subfield explored, focus will be on underlying issues such as the nature-nurture debate, the mind-body problem, stability versus change, and diversity versus universality, among others. The course will assume an interactive and real-life application approach.
**Core Course**
**Credits** 3

# PTHB

**PTHB 503 : Veterinary Bacteriology/Mycology**
The introductory part of this course will deal with bacterial morphology, structure, cultivation, and general principles of diagnosis, pathogenesis, disease transmission, use of antimicrobial agents, disinfectants, and epidemiological concepts. In the next section major bacterial and fungal pathogens of veterinary importance causing disease in domestic and pet animals will be the focus. Included here are the morphological features, habitat, transmission, pathogenesis related to clinical signs, diagnosis, prevention, biosecurity and control of these pathogens. Zoonotic significance will be mentioned where applicable.
**Core Course**
**Credits** 4

**PTHB 505 : Parasitology**
The course consists of lectures and laboratory classes covering the helminthes, anthropods, and protozoa occurring as important parasites of domestic and wildlife species. A taxonomic approach is taken, but emphasis is placed on practical aspects such as the parasites' developmental cycles, clinical features, pathogenesis of disease, immunology, epidemiology, public health aspects, laboratory and clinical diagnosis, treatment, and control. Particular attention is paid to providing a host approach so that the parasites and their hosts are placed in context.
**Core Course**
**Credits** 4

**PTHB 506 : Pathology I**
Pathology I serves as an introduction to the discipline and service of veterinary pathology. Through a series of didactic lectures and interactive laboratory sessions, students will learn the fundamental mechanisms of tissue injury and disease (General Pathology). Students will then continue the study of veterinary disease with a systematic approach focused on individual organ systems and their respective diseases (Systems Pathology).
**Core Course**
**Credits** 4

**PTHB 507 : Pathology II**
Pathology II is a 4 credit course taught in the 4th term of the DVM programme. This course consists of lectures and interactive laboratories to conduct the study of pathology of the lymphatic, endocrine, nervous, respiratory, reproductive, cardiovascular, special senses (Eyes/Ear), muscular and skeletal systems. Lectures emphasize principles and explain the concept of disease in the context of pathophysiology, morphological lesions, the clinical presentation of diseases, and ancillary diagnostic methods. Laboratory sessions entail using clinical cases and presenting gross and histological lesions to help students strengthen concepts covered in lectures and develop critical thinking in the context of animal diseases.
**Core Course**
**Credits** 4

**PTHB 510 : Veterinary Public Health**
The role of the veterinarian in public health is considered with emphasis on the safety of foods of animal origin. The course includes the responsibilities of the veterinarian in the control of zoonotic diseases through meat inspection and the implementation of government control policies. The course also surveys zoonotic diseases of bacterial, viral and parasitic origins. Some lectures in this course are taken in common with medical students and are supplemented by assignments dealing with topics of particular relevance to veterinary medicine.
**Core Course**
**Credits** 2

**PTHB 511 : Veterinary Epidemiology**

The course will consist of didactic material and in class presentations on study exercises. Topics to be covered will include:

- Epidemiologic study designs
- The avoidance of Bias and Confounding in Epidemiologic Studies
- The use of surveillance and mapping in reporting the distribution of disease iin populations
- Concepts in Infectious Disease Epidemiology
- The Procedures involved in Investigation of an Outbreak
- The Epidemiologic approach to Screening Programs using diagnostic tests
- In-class Epidemiologic study exercises
- Biological disasters of animal origins to include bioagroterrorism

**Core Course**
**Credits** 1

**PTHB 512 : Veterinary Immunology**

This course is designed to provide the student with an understanding of the basic principles and mechanisms underlying the immune system, with emphasis on the interaction between innate and acquired immunity in the response to infection. Mechanisms by which immunological components interact and clinically related topics are also emphasized. In addition to classroom instruction, small group sessions discuss veterinary-oriented clinical problems.
**Core Course**
**Credits** 2

**PTHB 515 : Virology**

The content of the course includes a general consideration of the unique biological features of viruses in terms of their reproduction as well as special points of relevance concerning their diagnosis and therapy. Viruses of particular importance in veterinary medicine are studied, including their therapy, epidemiology, pathogenesis, and laboratory diagnoses.
**Core Course**
**Credits** 3

**PTHB 516 : Avian, Fish, and Exotic Animal Diseases**

The Avian, Fish and Exotic Animal Disease course focuses on the etiology, pathogenesis, diagnosis and management of important diseases in non-traditional species that are commonly encountered as pets and within zoos, aquaria, wildlife and laboratory settings. This includes infectious and non-infectious etiologies as well as potentially zoonotic pathogens. Strategies for species management and disease prevention are emphasized using interactive lectures, case-based studies, and hands-on laboratory settings. Students apply principles and concepts learned in previous classes in a comparative approach while developing the ability to navigate clinical scenarios and practice evidence-based medicine in non-traditional animals.
**Core Course**
**Credits** 3

**PTHB 532 : Clinical Pathology**

Students gain an understanding of the principles of hematology, cytology, and clinical chemistry in the course. This introductory course is intended to provide the student with content, laboratory and critical thinking skills to:

- Identify explain pre-analytical and analytical aspects of laboratory analytes.
- 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.
- Describe the pathogenesis of the laboratory data abnormalities (the series of events that lead to the disease or pathologic state and abnormal laboratory data).
- Identify cells microscopically or digitally or abnormalities in cells that are of diagnostic 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.

Clinical cases are incorporated into the lectures and laboratories to emphasize correct interpretation of laboratory data.
**Core Course**
**Credits** 4

**PTHB 534 : Problem Solving in Veterinary Parasitology**

This course provides the student with an opportunity to conduct literature searches regrading new research techniques in veterinary parasitology and become current with updates regarding treatment and control strategies.

**Core Course**
**Credits** 1

**PTHB 537 : Veterinary Public Health: A Global Perspective**

The goal of this course is to address the Royal College of Veterinary Surgeons (RCVS) and World Organization for Animal Health (OIE) Day One competencies pertaining to Veterinary Public Health and Food Hygiene. Students will acquire knowledge eon UK legislation and its application to Veterinary Public Health and on the relevant agencies in these countries, to which they must report statutory notifiable diseases. Additionally, students will learn the principles of risk assessment, risk application, and specific regulations regarding animal traceability, pain management at farm slaughter, farm assurance, carcass disposal and environmental issues as they relate to Veterinary Pubic Health. This course consists of 15 lectures and an examination based on Veterinary Public Health content that is relevant to Veterinary Public Health in the UK. The lectures will consist of a combination of didactic and problem-solving case based sessions.

**Core Course**
**Credits** 1

**PTHB 539 : Transboundary Animal Disease**

Veterinarians pay an integral role in the surveillance of animal diseases and the preservation of global health.

In this course, students will learn how to recognize the clinical signs and diagnostic lesions associated with the most important transboundary animal diseases as identified by the World Organization for Animal Health [French translation: Office International des Epizooties (OID)]. Further, students will learn about the authoritative organizations, both in the Americas and within relevant agencies in the United Kingdom and European Union, that coordinate rapid response systems during an animal disease outbreak. In addition, students will learn about proper sample collection in the field and the recommended molecular tests that are used to provide confirmatory etiologic diagnosis. A combination of seminars, small-group activities, guided peer teaching, clinical-based learning, and historical accounts of disease outbreaks will be utilized as teaching methods in this course. This course is also open to all DVM students as an elective. This course is particularly relevant for all veterinary students pursuing careers in large/mixed animal practice, as well as those students interested in careers in animal production, pathology, laboratory diagnostics, epidemiology, research, public health, government/military, and veterinary preventive medicine. Course material will be relevant to students of all nationalities including the US- and UK-based students as part of the AVMA and RCVS requirements, respectively.

**Core Course**
**Credits** 1

**PTHB 540 : Preparatory Clinical - Extra Mural Studies**

The Extra Mural Studies Course (EMS) is one of the components of the Global Veterinary Health Track (GVH). It has been designed to fulfill the requirements defined by the Royal College of Veterinary Surgeons (RCVS) for SGU students matriculated in the DVM degree to be recognized by the RCVS.

The EMS course comprises of 38 weeks of extra mural studies, and aims to equip students with day one professional competencies. It builds on and compliments the intra mural studies undertaken in the 4 year DVM program. EMS is divided up into three components: Preclinical EMS, 12 weeks (12 credits), Preparatory Clinical EMS 6 weeks (6 credits) and Clinical EMS 20 weeks (20 credits). During the EMS placements, students are exposed to a variety of real-life work experiences, such as in animal husbandry, heard health, primary care veterinary medicine practice management, communication skills, self-management, decision making and clinical skills. The EMS course is also designed to assist in the transition from being a student to a practicing professional.

**Core Course**
**Credits** 6

**PTHB 541 : Food Hygiene and Meat Inspection**

Food Hygiene and Meat Inspection (FHMI) is conducted as a standalone one-week, one-credit course that is completed in the United Kingdom at Bristol University. Should a student enrolled in the GVH track who conducts their final clinical year at one of our affiliate colleges where the components of this course comprise part of their final clinical year rotations then this component will be satisfied within their clinical year training. If such a component is not offered at an affiliate college, then students in the GVH track must register for this FHMI one-credit course. This is a core component of the GVH track.

Students will be exposed to relevant areas of Food Hygiene with a special emphasis on Hazard Analysis Critical Control Points (HACCP). The course is a 28-contact-hour experience in which students are required to attend and participate in presented lecture topics and attend live onsite demonstration sessions at the abattoir.

Questions to be posed at the abattoir site are encouraged and students have to develop a reporting system of ante mortem and post mortem inspections and present a seminar on Food Hygiene and Meat Quality. This course will contribute to the development of veterinarians who will demonstrate knowledge and competence in dealing with the practice associated with meat quality, provide evidence-based practice experience, foster interdisciplinary teamwork, and develop professional and ethical behavior in practice in order to promote food safety and public health.

As a prerequisite for the course, students will engage in the lecture component and two abattoir field-based experiences whilst in Grenada. This prerequisite experience will expose students to the principles of food hygiene and meat inspection, ante mortem, slaughter, and postmortem demonstrations. Students will complete video reviews and analysis on ante and post-mortem inspections, slaughterhouse inspection theory, observations, and report writing.

GVH students will be responsible for their own transport and living costs, but there is no extra cost for tuition fees.

**Core Course**
**Credits** 1

**PTHB 542 : Clinical Extra Mural Studies**
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**Core Course**
**Credits** 20

# Public Health and Preventive Medicine

**PUBH 804 : Principles of Biostatistics**
Principles of Biostatistics presents the principles and methods of data description and statistical analysis used for planning, development, and evaluation of health problems. This course provides an introduction to descriptive statistics, probability distributions, sampling, estimation, inference, and basic parametric and nonparametric tests. A program called Epi Info,™ developed by the World Health Organization and Centers for Disease Control, is the primary computer program used for the course, although other computing programs will be demonstrated. Emphasis is placed on understanding and interpretation of data used in public health.
**Core Course**
**Credits** 3

**PUBH 805 : Health Policy and Management**
The focus is on a comprehensive background in the organizational, financial, legal, and political issues surrounding the health care environment. Health Policy and Management examines the major substantive issues confronting health policy makers in the areas of health systems, health sector reform, family and community health, and environmental and occupational health.
**Core Course**
**Credits** 3

**PUBH 806 : Social and Behavioral Aspects of Public Health**
This course explores the influence of social, psychological, and cultural factors on the health status of individuals and communities. While this topic may be studied from many perspectives, the class seeks to understand the origins of health-compromising behaviors, their distribution in the population, and ways to change or prevent them.
**Core Course**
**Credits** 3

**PUBH 807 : Principles of Environmental Health**
In this course, students learn about the interaction between humans and physical, chemical, and biological agents, in addition to the important impact it has on health. This course considers important environmental health issues facing society. Topics include environmental physiology, radiation protection, air pollution control, water and wastewater management, food protection, hazardous material management, ecology and control of animal vectors of disease, and basic community sanitation issues.
**Core Course**
**Credits** 3

**PUBH 831 : Concepts, Practice, and Leadership of Public Health**

This course is one of four courses that the department requires of all graduate students in the Master of Public Health program. It focuses on the determinants of health, and the philosophical and organizational foundations of the professional practice of the core areas of public health. It provides an integrated overview of the field by surveying epidemiology, biostatistics, preventive medicine, environmental health, social and behavioral aspects of health, and health policy. The course will also give students an understanding of the tools needed to be effective leaders in carrying out the core public health functions of assessment, policy development, and assurance.

**Core Course**
**Credits** 3

**PUBH 832 : Public Health Research Methods and Ethics**

As the second course required by the department, Public Health Research Methods and Ethics covers basic research tools needed to work successfully in public health and explores some of the common types of research encountered in public health settings. Topics include qualitative and quantitative data collection, design of research instruments, interpretation and dissemination of data, community assessments, and presentation of research findings. The course integrates case studies in public health ethics throughout the discussion of research so that the latter is considered in light of moral and ethical dilemmas that often occur. A combination of lecture, discussion, reading of literature, and computer applications are used to familiarize students with public research methods in public health.

**Core Course**
**Credits** 3

**PUBH 858 : One Health: Public Health Application**

One Health is a course for persons interested in the knowledge and application of medicine, veterinary medicine, environmental health, and public health. The course is divided into seven modules each highlighting One Health in the following areas: 1. History of Health, 2. Introducing to the One Health Concept, 3. Embracing Infectious Diseases, 4. Zoonotic Diseases, 5. Food Safety, 6. Environmental Health and 7. International Health

**Core Course**
**Credits** 3

**PUBH 889 : Practicum in Public Health**

The Practicum in Public Health (PUBH 889), hereafter known as "Practicum", is a required course in the MPH program.

It comprises of two components:

1. Course-based activities (experiential learning within core and program-required courses) Students will be required to upload to E-Value the finished product(s) for each of their course-based activities (instructions will come from individual courses).
2. 120-hours internship completed outside of school term: A planned, supervised and evaluated field-based exercise, to be conducted at a Public Health related organization, agency, department or community based organization.

As with all other MPH courses, students are required to register for Practicum/APEX to ensure it is properly logged in their course listing for the following term.

The Practicum is designed with the student in mind, starting from its seamless integration into coursework, followed by an on-site real world internship experience of 120 hours, which is student driven and facilitated by the Practicum Coordinators. For the 120-hour internship, the student, along with their site supervisor, will plan and identify activities/tasks and MPH Competencies to be fulfilled whilst on site. This must be approved by the practicum coordinator prior to commencing the internship.

In planning the internship, it is recommended that students begin their search for an appropriate site, whether in Grenada, the wider Caribbean, the United States, or elsewhere in the world, as early as possible to mitigate any unforeseen challenges which could impact their MPH completion date.
**Core Course**
**Credits** 3

**PUBH 893 : Capstone Integrated Learning Experience**

Capstone Integrated Learning Experience (CILE) is an integrated experience in the Master of Public Health (MPH) that allows students to apply and synthesize the concepts, knowledge and skills acquired throughout their course of study to successfully demonstrate public health competency.

CILE's integration process starts during the first term with the completion of 10 brief modules aimed at enhancing the students' writing skills (PUBH 893) and with the selection of a CILE topic in Concepts, Practice & Leadership in Public Health (PUBH 831). The process continues into Public Health Research Methods and Ethics (PUBH 832) before terminating in the submission of the final Capstone paper and oral presentation (PUBH 893). The CILE final paper and presentation must meet the scholarly requirements of the Department of Public Health and Preventive Medicine (DPHPM), which include addressing the MPH's foundational and track specific competencies.

Students are required to enroll in PUBH 893 in every term until the completion of the MPH. Upon successful completion students are awarded three (3) graduate level credits.
**Core Course**
**Credits** 3

**PUBH 895 : MPH Onboarding**

All new, (incoming) students will be enrolled in the MPH Onboarding course. This is a zero credit mandatory course that must be completed before the start of classes.

It will prepare you on how to use our online Learning Management platform (MyCourses) and other software programs you will have to use in most of your MPH course (e.g. Zoom, Panopto, ProctorTrack). This Onboarding course will also list all of the university services that are available for you to use as well as providing in one location important information about the program (e.g. descriptions of all courses, program policies, professional requirements)
**Core Course**

# Small Animals

**SAMS 501 : Radiology I**
This course covers the basic principles of radiographic image formation in didactic lecture, and is followed by a systems-based, case-based approach to small animal radiography of the thorax, abdomen, forelimb, hindlimb, vertebral column, and skull.
**Core Course**
**Credits** 1

**SAMS 502 : Radiology II**
The course covers the principles of radiographic image formation, radiation safety concerns, and normal radiographic anatomy of the horse and bovine, with labs using case-based systems-based examples.
**Core Course**
**Credits** 1

**SAMS 513 : Diagnostic Imaging**
Principles of radiography are reviewed, including the various potential hazards of radiation. Radiographic imaging techniques utilized in small and large animal species are described along with other imaging methods such as ultrasonography, CT, and MRI as well as the basic principles/practices of radiation therapy. In small-group film-reading sessions, students practice proper interpretation of radiographs.
**Core Course**
**Credits** 3

**SAMS 514 : Introduction to Surgical Skills**
The course is an introductory surgical course designed to introduce basic surgical principles and skills that will serve to prepare the student for veterinary surgery. Didactic and laboratory discussions include basic surgical principles: asepsis, sterilization, and disinfection; surgical instrumentation and surgical techniques; surgeon and patient preparation; suture materials and surgical needles; and hemostasis, wound healing and wound management. Surgical skills mastered during the laboratory sessions include knot tying, suture patterns (skin, hollow organ, and tendon), ligatures, surgical drape application, and bandaging. Students are provided opportunities to practice surgical skills using both live tissue, simulation models (i.e., skin and intestine), and suture boards.
**Core Course**
**Credits** 1

**SAMS 515 : Veterinary Physical Diagnosis I**
This course is a follow-up to Veterinary Clinical Orientation LAMS 502 and consists of a combination of didactic, hands-on and case-based learning sessions focusing on small animal patients. This course expands the basic physical examination to include specialty examinations including orthopedic, neurologic, dermatologic, and ophthalmologic examinations. The Problem-Oriented Medical Record approach is introduced with use of the SOAP format as students are required to participate in working up "paper cases." The laboratory exercises are tailored to provide the veterinary student with the opportunity to practice medical procedures 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.
**Core Course**
**Credits** 1

**SAMS 518 : Small Animal Surgery**
This core course in the veterinary curriculum was designed to use a team-teaching approach to tie together the basic science courses in the first 4 terms to surgical principles and prepare the students for their clinical year. The introductory portion of the course reviews principles of surgery, including asepsis, instrumentation and surgical techniques, plus approaches to the different body cavities. The remainder of the course covers the management and treatment of surgical conditions for small companion animals, including soft tissue, orthopedic, dentistry, neurologic, and ophthalmic conditions. Students will be exposed to the most common surgical procedures by organ systems. Use of state-of-the-art technology will be included among the different surgical procedures.
**Core Course**
**Credits** 4

**SAMS 520 : Veterinary Anesthesiology**

In the didactic portion of this course, students gain an understanding of the principles, concepts, and techniques utilized in general and local anesthesia in various small and large animal species, as well as the basic terminology and proper use of anesthetic equipment and monitoring devices. Laboratory sessions provide the opportunity to master equipment use (anesthetic machines and monitoring devices) necessary for providing safe anesthesia. The SGU Simulation Laboratory is used to practice and gain comfort with endotracheal intubation and video demonstrations of veterinary anesthesia-related procedures are used to familiarize the student with additional concepts in anesthesia. This course is designed to prepare the student to enter the Junior Surgery and Anesthesia Laboratory course (SAMS 527) in Term 5.

**Core Course**
**Credits** 3

**SAMS 522 : Small Animal Medicine I**

Students are introduced to concepts concerning the diagnosis, treatment and management of medical diseases in dogs and cats. Emphasis will be placed on infectious diseases, dermatology, endocrinology, gastrointestinal and hepatic diseases.

**Core Course**
**Credits** 3

**SAMS 524 : Small Animal Medicine II**

Students are introduced to concepts concerning the diagnosis, treatment and management of medical diseases in dogs and cats. Emphasis will be placed on cardiology, gastrointestinal diseases, hepatobiliary diseases, emergency and critical care medicine, oncology, neurological diseases, and endocrinology.

**Core Course**
**Credits** 4

**SAMS 526 : Introduction to Clinical Practice**

The class will be divided into Group A, Group B, and Group C for labs.

Each clinical lab is 4 hours long. These clinical sessions are laboratories, not clinical rotations, as student preparation and involvement is not expected to be at the level of a clinical rotation in this introductory course, and students will work more as a group than as individuals.

The first two clinical labs are formative while the last two clinical labs will have summative assessments, graded via a rubric on Examsoft.

On each clinical lab, students shadowto clinician doing consultations on companion animal medicine, surgery and emergency services at the Small Animal Clinic. Students collect historical data from clients in a clinical setting, perform physical exam, generate prioritized problem list and discuss prioritized differential diagnoses using the DAMNIT-V scheme. Students develop comprehensive diagnostic plans and get signed consent from clients. Students work with clinicians to write/discuss discharge instructions with plans. Student assist with writing medical records/SOAPs for patients. Students are involved with management of hospitalized patients, which may include administering medications, performing medical math and assessing pain scale where appropriate. Students will also participate in rounds.

A new component of the course involves students participating in 3 ophthalmology lectures and one ocular lab at the SIM Lab/Small Animal Clinic with small animal faculty/staff geared toward improving students clinical exposure to ophthalmology.

.In total, each student will participate in 5 lectures (1 course overview/intro lecture, 1 lecture on small animal modules, 3 lectures on clinical ophthalmology by a Board Certified VP ophthalmologist) 16 hours of clinical labs at the Small Animal Clinic (8 lecture hours) and 4 hours of ocular examination labs at the SIM Lab/Small Animal Clinic using eye models and/or live patients (2 lecture hours).

This course's 1 credit/15 lecture hours are distributed as five lectures and 20 hours of lab.
**Core Course**
**Credits** 1

**SAMS 527 : Junior Surgery and Anesthesiology Laboratory**
Students are divided into teams of three (rotating as primary surgeon, assistant surgeon, and anesthetist) and are expected to apply knowledge gained from previous courses (SAMS 520/SAMS 514) and concurrent courses (SAMS 518/LAMS 519 Theriogenology)to the practice of surgery and anesthesia. Students perform canine and feline spay and neuter surgical procedures while maintaining aseptic technique. Additional basic orthopedic procedures are practiced using plastic bone models. Students induce, maintain, and monitor anesthesia and write surgical reports. Preanesthetic and postoperative patient care and pain management/ assessment, as well as medical recordkeeping, using the SOAP format is emphasized and required. Students practice communication skills by presenting historical/physical examination parameters ofthepresurgical patient, blood work, anesthetic protocol, and surgical plan for spay/neuter patients.
**Core Course**
**Credits** 2

**SAMS 528 : Introduction to Clinical Rotations**
Introduction to Clinical Rotations intends to allow 6th Term students to acquire some important clinical skills prepare of year 4 clinical rotations. Students will be exposed to a wide variety of clinical cases throughout their training. This course will be highly interactive and will be taught in individual and small group settings. Students will be interacting with private practitioners as well a faculty members from different departments within the School of Veterinary Medicine.
**Core Course**
**Credits** 2

**SAMS 530 : Critical Reasoning in Veterinary Medicine**
This course will provide students with the opportunity to integrate information from other courses through utilization the clinical reasoning approach. Case reports or clinical scenarios will be presented to students using the clinical reasoning approach. Students will professionally communicate and will create relevant differential diagnosis lists, diagnosis plans, treatment plans, and/or other clinical case management components as specified.
**Core Course**
**Credits** 1

**SAMS 531 : Advanced Cardiology**
An in-depth and extensive didactic and laboratory-based approach to cardiology is introduced utilizing research, pertinent medicine, laboratory diagnostics, advanced imaging, and therapeutics for a listing of the most common canine and feline cardiovascular diseases.
**Core Course**
**Credits** 1

**SAMS 534 : Special Topics in Small Animal/ Orthopedic Surgery**
This course is designed to enhance knowledge in small animal surgical orthopedic conditions for those students interested in obtaining an advanced knowledge in this discipline or surgical domain.
**Core Course**
**Credits** 1

**SAMS 535 : Advanced Topics in Dermatology**
This course provides students with an opportunity for advanced training in clinical dermatology through the use of didactic lectures, clinical case discussions, and wet labs with an emphasis on the clinical approach to dermatologic cases. The course will review fundamental concepts in dermatology as well as introduce advanced topics and skills in dermatology. Prerequisite: SAMS 522
**Core Course**
**Credits** 1

**SAMS 536 : Special Topics in Emergency Critical Care**

This course provides an introduction into ECC topics, including small and large animal medicine. Laboratories (both live and simulated) demonstrate common diagnostics and procedures used in small animal critical care medicine, including AFAST/TFAST, central line placement, and CPCR.

**Core Course**
**Credits** 1

**SAMS 537 : Small Animal Clinical Nutrition**

This course provides students with advanced training in small animal clinical nutrition through the use of lecture, labs, and clinical case discussions. Clinical nutritional management of common disorders of dogs and cats and integration of nutrition with medical and surgical treatment modalities will be a focus. Prerequisite: ANPH 502

**Core Course**
**Credits** 1

**SAMS 539 : Shelter Medicine**

The course will introduce students to the concept of Shelter Medicine and increase their knowledge of this emerging field, including such topics as herd health population management, disaster preparedness, public health, disease prevention, and zoonosis, population control, animal welfare, 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 domestic and foreign, in the field of shelter medicine, such as non-profit community outreach programs, behavior consultation, animal welfare, ethics, and advocacy, and veterinary forensics.

The course is taught through interactive lectures and wet labs. The student will be required to review a scientific journal article in written format and give a final presentation in a group format to demonstrate teamwork and effective communication skills.

**Core Course**
**Credits** 1

**SAMS 546 : Veterinary Practice Ownership, Management, and Leadership**

This course aims to immerse the student in all aspects of owning and running a veterinary practice. Through experiential learning methods, students will be exposed to topics and skills related to starting/acquiring and owning a veterinary practice.

**Core Course**
**Credits** 1

# Social Science

**SSCI 412 : Social Science and Medicine**
This course examines several aspects of medicine. First, it examines how the health care system is a social institution with norms and belief systems that may differ in other cultures. Second, the doctor-patient relationship is examined and the concepts of doctor communication, patient adherence, and compliance, in addition to types of health care delivery, are highlighted. Third, behavior and how it affects patient health is examined. Specifically, the course discusses stress, personality, drug and alcohol use, smoking, diet, and pain management as important factors contributing to a person's health. As fewer people die from infectious diseases and more people die from diseases (such as cancer) that may be prevented through a healthy lifestyle, understanding patients' lifestyles outside of the hospital becomes imperative. Overall, the course discusses health and illness within the biopsychosocial model that is replacing the biomedical model in medicine.
**Core Course**
**Credits** 3

# Veterinary Science

**VSCI 301 : Introduction to Veterinary Science and Medicine**
This course is for stu dents in the third year of the preveterinary medical program and focuses on topics such as applied animal nutrition, health, and welfare. In addition, students are introduced to principles of animal handling, including restraint, and discuss case histories and physiological aspects associated with the practice of veterinary medicine.
**Core Course**
**Credits** 2

**VSCI 400 : Basic Animal Physiology**
The pre-veterinary animal physiology course exposes students to a wide variety of topics within the field of comparative physiology. The course aims at deepening the understanding of how various life-forms have adapted to their environment niches from the most simple aquatic cellular organisms to highest terrestrial mammals.
**Core Course**
**Credits** 3

# VSGP

**VSGP 8XX : Pathology of Emerging and Exotic Diseases**
**Core Course**
**Credits** 2

**VSGP 802 : Clinical Parasitology**
**Core Course**
**Credits** 2

**VSGP 803 : Radiology and Ultrasonography**
**Core Course**
**Credits** 2

**VSGP 807 : Wildlife Parasitology**
**Core Course**
**Credits** 1

**VSGP 807 : Wildlife Parasitology**
**Core Course**
**Credits** 1

**VSGP 809 : Introduction to Veterinary Public Health**
Didactic material will be presented by the instructor with key examples of current and historic descriptive research articles in veterinary public health assigned to students with in-class discussions, led by students, to follow. Students will be given two veterinary health problem sets and will work in teams of two to three to develop a plan to address the problem and then present their problem sets to fellow students for further discussion. Students will select a veterinary public health problem within their area of interest and identify two to three key articles to present and discuss with fellow students. Oral presentations will be critiqued by students and instructors.
**Core Course**
**Credits** 1

**VSGP 810 : Special Veterinary Anatomy**
**Core Course**
**Credits** 3

**VSGP 812 : Practical Applications of Molecular Assays**
**Core Course**
**Credits** 2

**VSGP 813 : Functional Anatomy of the Equine Limbs**
**Core Course**
**Credits** 2

**VSGP 814 : Introduction to Conservation Medicine**
**Core Course**
**Credits** 1

**VSGP 818 : Wildlife Health and Diseases**
**Core Course**
**Credits** 2

**VSGP 821 : Reptile and Amphibian Medicine and Surgery**
**Core Course**
**Credits** 2

**VSGP 822 : Advances in Bacteriology**
**Core Course**
**Credits** 3

**VSGP 823 : Diagnostic Bacteriology**
**Core Course**
**Credits** 3

**VSGP 827 : Diseases of North American Wildlife, Part 1**
**Core Course**
**Credits** 1

**VSGP 828 : Diseases of North American Wildlife, Part 2**
**Core Course**
**Credits** 1

**VSGP 829 : Special Topics in Fish Medicine and Surgery**
**Core Course**
**Credits** 2

**VSGP 830 : Large Animal Clinical Parasitology**
**Core Course**
**Credits** 2

**VSGP 831 : Histopathology of Fish**
**Core Course**
**Credits** 1

**VSGP 832 : Systemic Pathology of Fish**
**Core Course**
**Credits** 1

**VSGP 834 : Advanced Veterinary Neuroanatomy**
**Core Course**
**Credits** 2

**VSGP 835 : Advanced Veterinary Anatomy**
**Core Course**
**Credits** 4

**VSGP 836 : Advanced Avian Morphology**
**Core Course**
**Credits** 2

**VSGP 837 : Histochemistry and Quantitative Enzyme Assays**
**Core Course**
**Credits** 2

**VSGP 838 : Wildlife Casualties**
**Core Course**
**Credits** 1

**VSGP 841 : Advanced Histology, Cytology & Molecular Biology**
**Core Course**
**Credits** 2

**VSGP 842 : Advanced Necropsy Training**
**Core Course**
**Credits** 2

**VSGP 843 : Pathology of Important Emerging and Exotic Diseases of Livestock and Poultry**
**Core Course**
**Credits** 3

**VSGP 844 : Advanced Molecular Techniques**
This course focuses on the advanced molecular biology and cell culture techniques used in diagnostic pathology and research.
**Core Course**
**Credits** 3

**VSGP 845 : Special Topics in Veterinary Pathology**
**Core Course**
**Credits** 1

**VSGP 846 : Veterinary Neuropathology**
**Core Course**
**Credits** 2

**VSGP 847 : Pathology of Laboratory Animal Diseases**
**Core Course**
**Credits** 2

**VSGP 848 : Cellular Response to Injury/Stimuli**
**Core Course**
**Credits** 2

**VSGP 848 : Cellular Response to Injury/Stimuli**
**Core Course**
**Credits** 2

**VSGP 849 : Special Projects in Veterinary Pharmacology**
**Core Course**
**Credits** 2

**VSGP 850 : Molecular and Cellular Pharmacology**
**Core Course**
**Credits** 1

**VSGP 851 : Advanced Pharmacology of Autonomic Nervous System**
**Core Course**
**Credits** 1

**VSGP 857 : Host and Pathogenic Bacteria Interrelationship**
**Core Course**
**Credits** 1

**VSGP 860 : Diagnostic Cytology of Solid Masses**
**Core Course**
**Credits** 2

**VSGP 866 : Special Topics in Large Animal Surgery**
**Core Course**
**Credits** 1

**VSGP 867 : Special Topics in Large Animal Reproduction**
**Core Course**
**Credits** 1

**VSGP XXX : Clinical Pathology of Endocrine Disorders in Dogs and Cats**
**Core Course**
**Credits** 1

**VSGP XXX : Bone Marrow Evaluation and Hematologic Oncology**
**Core Course**
**Credits** 1

**VSGP XXX : Hematology of Pisces (Fish Hematology)**
**Core Course**
**Credits** 1

**VSGP XXX : Special Topics in Large Animal Medicine**
**Core Course**
**Credits** 2

**VSGP XXX : Advanced Small Animal Internal Medicine**
**Core Course**
**Credits** 2

**VSGP XXX : Advanced Veterinary Anesthesiology**
**Core Course**
**Credits** 3

**VSGP XXX : Advanced Topics in Veterinary Virology**
**Core Course**
**Credits** 1

**VSGP XXX : Diagnostic Virology**
**Core Course**
**Credits** 2