

# SCHOOL OF MEDICINE

2021-2022



St. George's University  
SCHOOL OF MEDICINE

Grenada West Indies

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# Course Archives

## Anatomical Sciences

### **ANAT 801 : Educational Development**

This course will give graduate students the opportunity to enhance their general anatomical knowledge and explore in greater detail areas of the body that were covered only superficially in previous coursework. This course will enable students to enter their fields of interest prepared to effectively teach pertinent concepts and applied anatomy in that field, as well as allow students to prepare a body of work with educational value for future students by developing educational materials through dissection or other media forms, such as computer or medical imaging. Students will learn various techniques involved in the preparation of cadaveric material for display and teaching, including dry bone/ligamentous preps, plastic embedding, and various plastination procedures.

#### **Core Course**

### **ANAT 802 : Graduate Anatomy Special Regional Dissection**

This course allows students to hone their dissection expertise, as well as their academic and three-dimensional understanding of a particular body area through detailed cadaveric dissection.

Students will produce prosections for the department while gaining a chance to learn a particular region of the body in great and professional-level detail, well beyond that covered in the standard anatomy course. Project topics focus on four regions: head and neck; back and thorax; extremities; and abdomen, pelvis, and perineum. Each regional dissection will be limited to the appropriate area and will be a complete dissection of all the structures within the topic area, either through one or a series of dissections. Each project will be researched, dissected, and presented to the faculty and peers of students involved.

#### **Core Course**

### **ANAT 803/ANAT 813 : Instructional Development I/ Instructional Development II**

Instructional Development is an elective or selective to assist students with the development of their teaching skills and topic proficiency by providing teaching opportunities in the core anatomical science courses (Human Gross and Developmental Anatomy, Embryology, Histology and Cell Biology, or Neuroanatomy). This course is designed to provide students with practical teaching experience as a teaching assistant. They must either pass the course that they wish to teach with a minimum passing grade of B, or they must have permission from the course director to waive this prerequisite. As graduate teaching assistants, they will be required to attend and teach in the relevant labs, in addition to the preparation and delivery of two lectures throughout the term to faculty and, upon approval of faculty, to students of the course. This practical experience is a crucial part of any educator's training. Students are eligible to take this course twice. The first is Instructional Development I ([ANAT 803](#)) and the second is Instructional Development II ([ANAT 813](#)).

Students cannot apply these to the same core subject. If they elect to take both courses, they must select two of the four core anatomy courses (Human Gross and Developmental Anatomy, Embryology, Histology and Cell Biology, or Neuroanatomy). Letter grades will be based on the course director's evaluation and the delivered lectures to colleagues and other course instructors, as well as to students of the course. The subjective evaluation of attendance and work effort in relevant labs, as well as the quality of oral presentations will be considered as a component of the grade. It is intended that students will be formally evaluated at the end of the term by the students of the course, but it is up to the course director as to whether or not to use this feedback in their evaluation.

#### **Core Course**

**ANAT 804 : Seminar in Anatomical Sciences**

A core course requirement for the MSc and PhD, this course aims to provide an awareness of important current issues in clinical anatomy education and improve student understanding of both the educational issues confronting the profession and the ethical issues associated with the use of human tissue. Members of the department will meet with graduate students to discuss topics, to be determined by the course director, that are issues in the field of clinical anatomy education. The seminar will be held three times each term and graduate students will participate in the seminar for a minimum of four terms. The course is graded as satisfactory/unsatisfactory and performance will be determined by the level of student participation in the discussions over the four terms.

**Core Course****Credits 1****ANAT 805 : Biomedical Research Methods**

The students will explore basic and modern methods for the study of cells and tissues, including biotechnology of laboratory animals and use and care of laboratory animals to be discussed. The course will foster the understanding of the principles and practice of tissue culture and tissue processing for insitu localization of cellular and subcellular molecules by chemical and immunological reactions, as well as dye staining techniques. The researcher idea will be examined to identify the role of critical thinking in problem solving. Critical review of biomedical literature as well as the capacity to develop high quality research proposals will form a major focus of the course.

**Core Course****ANAT 806 : Fundamentals of Microscopy and Imaging**

The course consist of lectures, laboratory exercises, demonstrations and discussions that will enable students to obtain and interpret microscope images of high quality, to perform quantitative optical measurements and to produce video and digital records for documentation and analysis. Principles of image formation and microscope design will be discussed, alongside clarification and types of Light microscopy. Types of cameras, analog and digital image processing and analysis, as well as an introduction to fluorescence microscopy and application of optical methods to live cells will be explored.

**Core Course****ANAT 816 : Cardiovascular, Respiratory & Urinary Systems**

The course examines the histology, cell biology, gross and developmental anatomy of the interrelated Cardiovascular, Respiratory & Urinary systems. The course consists of lectures; laboratory activities for histology, anatomy and medical imaging; training in physical examination skills. Graduate students participate in specific lecture and laboratory components of the Cardiovascular, Pulmonary and Renal module of the year one medical curriculum with additional laboratory activities unique to the graduate program.

**Core Course****ANAT 817 : Endocrine & Reproductive Systems**

The course examines the histology, cell biology, gross and developmental anatomy of the Endocrine, Male Reproductive & Female Reproductive systems. The course consists of lectures; laboratory activities for histology, anatomy and medical imaging; and additional training in physical examination skills. Graduate students participate in specific lecture and laboratory components of the Endocrine and Reproductive module of the year one medical curriculum with additional laboratory activities unique to the graduate program.

**Core Course****ANAT 818 : Digestive System**

The course examines the histology, cell biology, gross and developmental anatomy of the digestive system. The course consists of lectures; laboratory activities for histology, anatomy and medical imaging; and additional training in physical examination skills. Graduate students participate in specific lecture and laboratory components of the digestion & Metabolism module of the year one medical curriculum with additional laboratory activities unique to the graduate program.

**Core Course**

### **ANAT 819 : Head & Neck**

By presenting clinical case studies the graduate student will learn to interpret the patient's history and linking the information to anatomical, embryological and physiological basic science knowledge, while further questioning the 'patient' in each case study by following the acronym VINDICATES developing concept maps. The goal is not necessarily to establish a correct diagnosis. The thought process behind the various differential diagnoses, the manner in how they can be verified or refuted, and ultimately what possible basic medical/surgical therapeutic action(s) and their explanation is important. The graduate student will apply their gross human and developmental anatomy knowledge in a practical clinical manner facilitating their ability to teach anatomy of the head and neck based on understanding clinical principles and surgical approaches. This experience will assist the graduate student in writing MCQs with a clinical stem and valid distractors. This approach is then applicable to other regions in the body.

#### **Core Course**

### **ANAT 820 : Graduate Gross Anatomy**

An independent study course that aims to provide graduate students with the knowledge of gross anatomy necessary for postgraduate teaching, Graduate Gross Anatomy goes beyond the level attained in the Human Gross and Developmental Anatomy (ANAT 550) course and includes historical perspectives and anatomical variation. Students will be responsible for preparing full-body prosection following the same sequence as the dissection in Human Gross and Developmental Anatomy. The prosection will be used as a teaching specimen for current ANAT 550 students. Students will work under the supervision of a full-time member of the department. Students will be responsible for assigned readings for the area prosected and will be evaluated by oral examination periodically. The course will be taken the term immediately following the completion of Human Gross and Developmental Anatomy.

#### **Core Course**

### **ANAT 831 : Anatomy Prosection and Preservation**

The goals of this course are to improve students' understanding of a region or regions, improve their dissection and presentation skills, develop a body of high-quality teaching materials with anatomical purpose, and develop the ability to discuss and educate others on a particular region of the body. Graduate students are provided the opportunity to enhance their general anatomical knowledge and explore in far greater detail areas of the body that were covered only superficially in their previous coursework. They will learn the finer anatomical points of the body, as well as be exposed to and trained in the various means of specimen preparation, preservation, and display available today. They will be able to revisit anatomical areas of interest to obtain a deeper understanding of those areas, in addition to the production and study of detailed anatomical preparations for future application in their teaching careers. This one- or two-term course will give participants the opportunity to undertake detailed, professional-quality dissections of the human body. The various techniques involved in the preparation of cadaveric material for display and teaching include dry bone/ligamentous preps, plastic embedding, and various plastination procedures. This course gives a letter grade and involves 24 lecture hours and 70 lab hours. A formal 50-minute seminar/presentation must be presented to departmental faculty and invited guests a minimum of twice per term, as well as a formal presentation of the students' finished program projects will be given to peers and faculty.

#### **Core Course**

### **ANAT 890 : Capstone Anatomical Sciences**

Students are required to meet or follow-up with their Faculty Advisor to discuss their ideas for the paper as needed. A final paper and its presentation must be completed before a grade will be awarded.

Proposal: Significance of Problem/Question

Students will write a persuasive argument (two to three pages), supported by published literature, describing/ defending the significance of their chosen question or topic.

Preliminary Review of Literature: Relevance Screening

Students are required to review a minimum of 50 abstracts to determine their relevance to their chosen question or topic. These abstracts must be of peer-reviewed articles and submitted to the program supervisor and GAC.

Quality Assessment and Data Extraction

Students are required to select the 15 most relevant articles from the 50 reviewed abstracts of peer-reviewed articles that are relevant to their topic. They must submit a summary of each of the 15 most relevant articles, including the statistical and/or scientific merit of each.

Findings

The final paper will be a report on the synthesis of these articles, emphasizing their usefulness to the student's question or topic. This report cannot be more than 10 pages and must be organized according to the following outline:

- Title
- Abstract
- Introduction: Describes the selected topic and summarizes the significance
- Body: Summarizes the designs, outcomes, and data analyses of the articles reviewed
- Discussion: Synthesis of the reviewed articles, including the student's interpretation of their relationship to the initial question
- Conclusion
- References

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

### **ANAT 980 : Research for the PhD**

**Core Course**  
**Credits 10**

### **ANAT 991 : Doctoral Dissertation in the PhD**

**Core Course**  
**Credits 9**

# Basic Principles of Medicine

## **BPM 500 : Basic Principles of Medicine I (BPM1)**

The course Basic Principles of Medicine 1 (BPM1) is a 17-credit course taught over 17 weeks in Term 1 of the Doctor of Medicine (MD) program of St George's University School of Medicine, Grenada, and within the St. George's University of Grenada School of Medicine/Northumbria University Program (SGUSOM/NU), in collaboration with Northumbria University, Newcastle upon Tyne, UK. It is part one of an organ system-based curriculum for the first academic year of the Basic Sciences program and is taught in three consecutive modules:

- Foundation to Medicine: 6 weeks
- Musculoskeletal System: 4 weeks
- Cardiovascular, Pulmonary and Renal Systems: 7 weeks

Total: 17 weeks

### Foundations to Medicine

In this first module, students will learn about the biological molecules associated with cells, tissues and organs from biochemical and cellular discussions towards a molecular understanding of human disease and pathology. Students will learn about normal and abnormal physiological states including homeostasis and how it is controlled via biochemical and genetic means. Cellular control of proliferation, senescence, apoptosis and necrosis will be explored. Histological, biochemical, physiological, and genetic aspects of cancer will be synthesized to develop a comprehensive analysis of the principles of this disease state. Students will increase their knowledge of human patterns of genetic inheritance beyond Mendelian concepts with the objective of seeing patients through a genetic lens. Genetic and genomic tests for diagnosis and characterization will be taught so that students will have a broad understanding of the advantages and limitations of these technologies. An overarching theme of this module is to introduce students to the language embedded in pathology tests and to provide an understanding and interpretation of the results. To this end, biochemical, physiological and genetic aspects of pharmacology will also be introduced.

## Musculoskeletal System

The Musculoskeletal System module is an interdisciplinary study of the anatomical, histological, physiological and pharmacological principles of this organ system. The overall goal of this module is to provide a comprehensive knowledge base for understanding the normal gross anatomical and microscopic structures as well as the development and functioning of the musculoskeletal system. Case studies, practical laboratory sessions and small group discussions are an integral component throughout the entire module. The module also exposes students to cadaveric prosections and ultrasound simulation sessions with standardized patients to aide in their understanding of key anatomical concepts and allows them to apply this knowledge to a clinical setting.

## Cardiovascular, Pulmonary and Renal Systems

The Cardiovascular, Pulmonary, and Renal Systems module is an interdisciplinary study of the anatomical, histological, physiological, biochemical, and pharmacological principles of these organ systems. The overall goal of this module is to provide a sound comprehensive knowledge base for understanding the normal anatomical and microscopic structures, biochemical processes, and functioning of the cardiovascular, pulmonary and renal organs. Case studies and practical laboratory sessions are also presented as an integral component throughout the entire module. An introduction to inflammation, various cardiovascular, pulmonary and renal acid-base disorders will be explored to aid with the application and integration of the normal basic science principles into pathological disease process.

**Core Course**  
**Credits 17**

## **BPM 501 : Basic Principles of Medicine II (BPM2)**

The Basic Principles of Medicine 2 (BPM2) course is a 17-credit course delivered over 18 weeks in Term 2 of the Doctor of Medicine (MD) program of St George's University School of Medicine, Grenada, and within the St. George's University of Grenada School of Medicine/Northumbria University Program (SGU/NU), in collaboration with Northumbria University, Newcastle upon Tyne, UK.

It is part one of an organ system-based curriculum for the first academic year of the Basic Sciences program and is taught in three consecutive modules:

- Endocrine and Reproductive Systems (ER) — 3 weeks
- Digestive System and Metabolism (DM) — 4.3 weeks
- Nervous System and Behavioral Science (NB) — 10.7 weeks

Total: 18 weeks

### Endocrine and Reproductive (ER) Module

This module provides the knowledge and understanding of the gross and microscopic structure, physiology, biochemical processes and metabolic disorders in relation to the endocrine organs. This includes the study of gross and developmental anatomy, physiology, microscopic anatomy and cell biology of the male and female reproductive systems. Students will learn to integrate and apply this knowledge through examination of cadavers at wet lab sessions and, micrographs and radiological images in small group sessions. At the end of each system, pathological conditions are explained through micrographs and imaging relevant to the specific organ systems. Students will also cover developmental genetics, genetic screening techniques and facts about nutrition in relation to neonates, infants and the elderly. Students will be able to appreciate the normal structure and functions of these organ systems and will be able to correlate pathological outcome due to abnormal changes within the respective tissue.



Digestive System and Metabolism (DM) Module  
In this module students learn about the anatomy and histology of the digestive system and actively integrate it with the biochemistry and physiological function of this organ system. Students will familiarize themselves with the digestion and metabolism of the macromolecules: carbohydrates, lipids and proteins and their nutritional significance. Special emphasis is placed on the inborn errors of metabolism associated with each of these metabolic pathways and the lab tests and the molecular basis for the clinical signs and symptoms of these disorders. The module will be interspersed with clinical cases and study of imaging and histology of the gastrointestinal tract. Clinical cases on inborn errors of intermediary metabolism and metabolic disorders enhances students' understanding of the importance of these aspects of metabolism.

#### Nervous System and Behavioral Sciences (NB) Module

This module is an interdisciplinary study of the structure and function of the head, neck and the peripheral and central nervous system, simultaneously addressing the anatomy, histology, physiology, biochemistry and some pharmacology and pathophysiology. Behavioral science (psychopathology), life span development and learning theory are covered, as well as the behavioral aspects of medicine. Neurological and psychiatric case studies will be presented as integral components. The overall goal is to provide students with knowledge and understanding of the effects of damage to the head, neck, spinal cord, and brain, as well as the behavioral disorders of cognition as presented in general clinical medicine and the specialties of Neurology, Neurosurgery, Psychiatry and Ophthalmology.

**Core Course Credits 17**

#### **BPM 502 : Basic Principles of Medicine III (BPM3)**

The Basic Principles of Medicine (BPM3) course is an 8-credit course taught over 6 weeks in Term 3 of the Doctor of Medicine (MD) program of St George's University School of Medicine, Grenada. The core aim of this course is to equip physicians with: the knowledge and skills to understand fundamental principles inherent to a future understanding and diagnosis of microbial infections; devise and utilize strategies that improve the health of entire communities and populations and help reduce health inequities among population groups; and to uphold standards of ethics and professionalism expected across North America.

The BPM3 course is sub-structured into four thematic areas:

1. Ethics, Professionalism and Medical Jurisprudence: A survey of bioethics introduces research ethics, public health ethics, medical and clinical ethics, professional ethics, and the professional responsibilities of today's physicians. These responsibilities derive from professional knowledge, attitudes, and practices involved in clinical medicine, medical research, and disease prevention, surveillance, and control. They stem from the medical profession itself, and from fundamental concepts of law and ethics related to the medical profession and doctor-patient relationships. Specific topics addressed include environmental health ethics, physician impairment, social and community ethics, patient autonomy and informed consent, beginning of life issues and termination of pregnancy, and end-of-life decisions. Fundamental concepts of law and ethics that relate to the medical profession are discussed, along with issues bearing on physician professionalism and boundary crossings. Societal trust and related concerns involving the regulation of medical practice are emphasized along with basic principles of patient privacy, confidentiality, medical malpractice and liability
2. Basics of Immunology and Microbiology: Microorganisms are the single most

significant contributor to human health and disease worldwide. The Basics of Immunology and Microbiology component focuses on presenting the fundamental principles of microorganisms in the context of their interaction with humans as the core knowledge necessary for effective and efficient diagnosis and treatment of infectious diseases. The course begins with an overview of microbial groups, introduction of some common pathogens, their features, replication strategies and basic mechanisms of pathogenesis. In parallel the key immunological principles will be discussed. This will facilitate cross-linkage and a more in-depth understanding of the body's natural defense mechanisms against infectious agents. Examples of immune system failure will be presented in the context of diversity of the infectious disorders and some primary immunodeficiency syndromes. This compound knowledge will allow students to understand how microbial growth and pathogenicity could be controlled through the use of therapeutic compounds combined with physical and chemical control methods. The detail as to the specific microbial infections that result from human-microbial interactions will be covered in **MICR672** Introduction to Infectious Disease (Term 4).

3. Public Health Assessment Tools: Basic biostatistics concepts and tools are introduced, which will enable physicians to understand and critically examine the medical literature. Core concepts in clinical epidemiology, preventive medicine and evidence based medicine that are most relevant to physicians are taught. Emphasis is on recognizing patterns of disease occurrence and disease outcomes in human populations and using such information to 1) inform diagnosis and treatment strategy in patient care; and to 2) foster application of ethically and scientifically sound principles in community intervention. Quantitative topics are enhanced with clinical examples from the medical literature, providing a transition from research findings to care of individual patients. The ways in which human behavior, the environment, and politics influences health in different societies are also considered. An international comparison of health systems

is provided, and factors underlying existing disparities in healthcare is explored. Current issues in healthcare financing and delivery are discussed, along with insurance systems, cost containment, different types of medical practice, and medical practice economics.

4. Culture and Societal Issues/Physician-Patient Relationship: The biopsychosocial approach to patient care is introduced, and the role of cultural factors within the doctor-patient encounter is discussed. Emphasis is placed on development of cultural sensitivity and competence in the provision of care. The role of the family and the patient's social network are explored, and life-disrupting conditions such as substance abuse, domestic violence, child/elder abuse, and self-harm behavior are discussed with reference to the physician's role in detection and intervention.

**Core Course**  
**Credits 8**

## Biochemistry and Genetics

**BCHM 816 : Advanced Techniques in Biochemistry**

The course is primarily comprised of a series of lab experiments (five to six) aimed at introducing graduate students to modern techniques in biochemistry and cell biology. In addition, students will be trained in the basic principles of designing and conducting scientific experiments.

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

### **BCHM 817 : Biochemistry for Graduate Students**

This course is a comprehensive course in biochemistry which will cover the following:

- Structure and function of biological molecules
- Enzymes regulations and kinetics;
- Intermediary metabolism
- Replication, transcription and translation
- Mechanisms of hormone action and signal transduction
- Role of vitamins in normal and aberrant conditions
- Inherited errors of metabolism
- Integration of metabolism and organ function.

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

## Bioethics

### **BIOE 805 : Clinical, Ethical, and Neuroscience Aspects of Pain**

This course introduces pain as a public health problem. Topics covered include the definition of pain; the different qualities of acute and chronic pain; the neuroanatomy and neurophysiology of pain; and psychological, sociological, and anthropological aspects of pain. Students will be taught to take a pain history, perform a physical examination, and assess pain and pain relief. The course introduces treatment options and discusses ethical issues related to pain management. The laboratory hours involve visits to the General Hospital and geriatric homes, and rounds with community nurses.

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

### **BIOE 808 : Bioethics Around the World**

This course orients students to the MSc in Bioethics (MScB) programme and introduces foundational content and skills. Course activities nurture critical thinking about fundamental topics (scientific integrity, the responsible conduct of research, and the bioethics principles and theories) while facilitating student-student and student-faculty communication that builds relationships that will support student learning throughout the programme. Instructional activities using the online learning platform provide experience using technologies and software essential to the programme and that are unfamiliar to students. During the course students strengthen their communication and critical thinking skills through intensive discussion of the responsible conduct of research (RCR) and the technology, methodology and history of bioethics and research ethics. Students apply methods of bioethical analysis to cases and articulate regional, national, international concerns involving bioethics. The course provides foundational knowledge, skills, relationships, and opportunities to enhance critical thinking; and initiates the programs' spiral curriculum which reinforces and strengthens students' knowledge and skills by distance learning.

**Core Course**

### **BIOE 809 : Responsible Conduct of Research**

This 3 credit course is unique in focusing exclusively on the responsible conduct of research (commonly referred to by the acronym RCR). Through asynchronous interactive online sessions, videos lectures, and case studies, students explore the roles and responsibilities of researchers, IRBs, LACUCs, and institutions, governments, and regulatory bodies involved in research. Topics addressed include scientific integrity and the ethics of research design, data management, peer review, scientific misconduct, and others. RCR involves education about all aspects of the research endeavor and all fields of research as well as the promotion and adjudication of misconduct. Knowledge and understanding of these issues, and skills with which to critically analysis cases from the perspective of different guidelines and frameworks, are essential to develop expertise in bioethics. The critical thinking and communication skills obtained in this course will be useful to students in any discipline or profession.

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

## Clinical Skills

### **CLSK 820 : Alcohol and Drug Addiction**

The objective of this course is to provide participants with an overview of prevalence, etiology, clinical presentations, treatment modalities, and preventive strategies of drug use in Grenada, with particular reference to alcohol.

**Core Course**

## Educational Services

### **EDUC 811 : Educational Assessment**

This core course is designed to provide a foundation whereby students will gain an understanding and appreciation for the field of research in education as well as the major issues in contemporary education. This course will address various methods of formative and summative assessment, considering how assessments are planned, constructed, and interpreted in relation to the curriculum. The various methods will be critically evaluated in terms of their validity, reliability, and utility

**Core Course**

### **EDUC 812 : Educational Leadership & Management**

This course focuses on strategic leadership and how it can be a power influence in bringing about and managing change in an educational institution. It will serve to prepare students with the knowledge, vision, and skills to become ethical and socially conscious leaders in the field of Education. Participants will pursue theory and research focusing on the complex historical, cultural, sociological, philosophical, and theoretical aspects of the leadership process. Students interested in undertaking a research project or thesis related to educational leadership are encouraged to take this course.

**Core Course**

### **EDUC 813 : Reflective Practice & Practicum**

In this course students will study how the development of teaching is closely associated with both metacognitive self-evaluation and critical reflection of the literature of teaching/learning (both generally and in their respective subjects). Reflective practice is a process of continual experiential learning (Schon, D. 1983. *The Reflective Practitioner*. Basic Books). In this course students will learn to engage in critical self-evaluation while responding appropriately to peer/student evaluations and taking into consideration practical theory.

Students who register for this course may be exempted from the practicum section if they have:

- A current teaching responsibility which lasts for the duration of the course, and/or
- Substantial prior teaching experience on which to reflect.
- Create, explain, and justify a plan for how they might improve their practice. Students are responsible for securing their own practicum, but faculty will do what they can to help. The practicum may be completed through lecturing, teaching, and/or small group facilitation (such as D ES Groups). Unless the student is exempted, the practicum will be undertaken concurrently with the course.

**Core Course**

### **EDUC 814 : Practical Approaches for Statistical Analysis**

Practical Approaches for Research Analysis is designed to extend beyond the content of the Research Methodology course and more fully equip students interested in conducting quantitative, qualitative, or mixed-methods studies. It will build on students' understanding of the basic concepts and methods related to descriptive, parametric, and non-parametric analysis and provide the opportunity to run analyses and report findings using basic statistical software. Emphasis will be placed on the practical application of research methods including statistical analysis. Students will develop the necessary skills to interpret empirical findings in published research as well as in their own applied research.

**Core Course**

**EDUC 815 : Critical Appraisal of Educational Research**

The purpose of this course is to familiarize students with the literature review as they appraise educational research literature. Students will learn about the process of conducting a literature search for the purpose of constructing a literature review. A balance of class meetings and independent work will enable students to learn basic skills and strategies and then apply them to their own work. Students are encouraged to focus their reviews on their research interests. The final project for this course will be a literature review, which may serve as the basis for a research project or thesis. Students who have limited experience conducting literature reviews are urged to take this course.

**Core Course****EDUC 819 : Practitioner Research**

This foundational research methods course is designed to support students in understanding the goals, approaches and foundations of applied, practitioner-orientated action research. Students will be exposed to qualitative, quantitative and mixed-methods methodologies. At the end of the course, students will produce a research proposal for their practitioner research project, which will serve as the foundation for their master's thesis. Students will take this course concurrently with their practicum, so that their research proposal is deeply connected to their practice. This is a pass/fail course.

**Core Course****EDUC 824 : Historical, Social & Cultural Foundation**

In this course, students will engage with seminal texts in the field of education as they consider the historical, social and cultural aspects of education. Specifically, students will explore the influence of the program's six 'big ideas' (power, equity, agency, collaboration and inquiry) on the evolution of the field of education across time and place.

**Core Course****EDUC 825 : Educational Statistics**

Educational Statistics is a 1-credit selective course on statistics on the Masters of Education Program. The main goals of the course are to help students understand basic educational statistics and analyses real-world data for the purposes of making real-world decisions. The course complements student's other coursework, helps students analyze their own data, is student-centered, and can be comodified with students.

**Core Course  
Credits 1****EDUC 837 : Research Seminar**

In this course, students will conduct practitioner research for their master's Thesis. Students will be taking this course concurrently with their practicum, which will be the site of their research. Through coursework, students will be supported with refining data collection tools, collecting and analyzing qualitative and/or quantitative data. Students learning will be guided by a series of research memos that students will write in this course. In keeping with the rich tradition of practitioner research (often a deeply collaborative process), students will work in small inquiry groups throughout this course.

**Core Course****EDUC 838 : Capstone Seminar**

In this course, you will be supported through the process of completing and presenting your capstone project. You will be supported by a faculty advisor and an external mentor, as well as a the peers in your capstone group, as you complete significant independent work for your capstone project. Your capstone will be a direct extension of the practitioner research you conducted the previous semester and will be an illustration of what you have learned over the two years in relation to each of the program learning outcomes. You will present your capstone at the end-of-program conference. This course serves as the culminating course for the entire programme.

**Core Course****EDUC 840 : Collaborative Learning & Leadership**

In this course, students will explore collaborative approaches to teaching, learning and leadership. Students will think about collaboration in their own contexts, from the perspectives of students, faculty, and administration, as they explore the challenges and opportunities of collaborative learning and leadership.

**Core Course**

# Interdepartmental Courses

## **IDGS 805 : Community Health**

This course is designed to provide an understanding of the basic sciences in relation to the practice of medicine. The course will allow students to apply clinical skills developed in their preclinical studies to real-life situations, and thus provide a smooth transition from preclinical to clinical studies. The program allows students to improve their abilities in patient interviews, history taking, and physical and laboratory diagnosis, as well as therapeutics.

**Core Course**

**Credits 1**

## **IDGS 806 : Critical Appraisal of Research Methods**

By the end of the course, students will be able to critically appraise observational and interventional studies in humans, and describe the principles of research synthesis using examples from human parasitic infections. This course includes preparatory reading, lectures, group/ individual work, seminars, discussions, and preparation of a four-page policy brief.

**Core Course**

## **IDGS 821 : Perinatal Epidemiology—International Perspectives**

This course is designed to expand students' understanding of basic concepts and research strategies of epidemiology, and by way of context, introduce major maternal and child health issues in Grenada and worldwide.

**Core Course**

## **IDGS 907 : PhD Project Proposal**

This course involves the preparation of a report that outlines the proposed research project for completion of the degree of PhD in the graduate studies programme.

**Core Course**

## **IDGS 908 : PhD Proposal Seminar**

This course involves the preparation of a seminar that outlines the proposed research project for completion of the degree of PhD in the graduate studies program.

**Core Course**

## **IDGS 909 : PhD Progress Seminar**

This course involves the preparation of a seminar that outlines the progress that students have made towards the aims and objectives of their research project.

**Core Course**

## **IDGS 910 : PhD Final Thesis Defense**

The PhD thesis defense panel interview.

**Core Course**

## **IDGS 911 : PhD Research & Thesis**

The research and thesis component of the PhD is the core component for the degree of PhD. This is a student devised and driven research project that is expected to provide original input into an area chosen by the candidate.

**Core Course**

## **IDGS 912 : MD-MSc Research & Thesis**

The research and thesis component of the MSc is a large component of the degree of MSc. This is a student devised and driven research project that is expected to provide original input, or confirm established data, in an area chosen by the candidate.

**Core Course**

## **IDGS 913 : MSc Research and Thesis**

The research and thesis component of the MSc is a substantial component of the MSc degree. This is a student devised and driven research project that is expected to provide original input, or confirm established data, in an area chosen by the candidate.

**Core Course**

**Credits 10**

# Microbiology

## **MICR 810 : Bacterial Physiology, Growth, and Development**

This course provides students with an overview of how microbes function, including their nutritional requirements and metabolic activities. Prerequisite: General Microbiology (

BIOL 401

)

**Core Course**

**MICR 813 : Medical Microbiology**

This is a general course in medical microbiology that looks at bacterial structure, function, growth, nutrition, metabolism, genetics, and control of microorganisms. Medical Microbiology also includes a survey of pathogenic bacteria and fungi, as well as an introduction to viral structure replication, pathogenesis, and control of common viral agents that cause disease in humans. A laboratory component is attached to the course and an extensive paper is to be submitted on an assigned topic. Prerequisite: General Microbiology (BIOL 401)

**Core Course****Credits 5****MICR 816 : Tropical Medical Parasitology I**

This course examines parasites causing diarrheal episodes in humans. This course covers life cycles, diagnosis, treatment, clinical manifestations, epidemiology, and control, in addition to socioeconomic and human behavioral considerations in relation to these disease organisms.

**Core Course****MICR 817 : Tropical Medical Parasitology II**

This course is designed to provide participants with laboratory, field, and clinical experience dealing with *Wuchereria bancrofti*, *Plasmodium falciparum*, *Plasmodium vivax*, *Leishmania*, and *Echinococcus granulosus*, all of which are common parasites that are the cause of considerable mortality and morbidity throughout the tropics. Complementing Tropical Medical Parasitology I (

MICR 816

), this course looks in greater detail at the epidemiology and public health importance of two or three major tropical medical parasites. This course is accompanied by a visit to a region where these parasitic diseases are endemic.

**Core Course****MICR 818 : History of Microbiology**

History of Microbiology studies the origins and development of the science of microbiology using a historical approach from the Renaissance to the postantibiotic era. The course will involve lectures, discussions, guided readings, and the preparation of a term paper. Prerequisite: General Microbiology (BIOL 401) or Biology (BIOL 301)

**Core Course****MICR 819 : Medicinal Plants**

This course examines the influence of medicinal plants (herbal remedies) in 20th century medicine. The advantages and disadvantages of medicinal plant usage are examined, as is the evaluation of the use of certain medicinal plants.

**Core Course****Credits 1****MICR 820 : Marine Microbiology**

Marine Microbiology studies microorganisms found in oceanic littoral, pelagic, and benthic environments. This course covers microbial ecology, including microbial loops, evolutionary trees, sediment, deep seas, and the sunindependent ecosystem.

**Core Course****MICR 822 : Medical Biofilms**

This course will discuss the relevance of the biofilm mode of growth with regard to infectious diseases and disease processes (enhanced microbial survival, evasion of immune response components, etc.), focus on infections of indwelling medical devices (heart valves, catheters, artificial joints), and examine the relevance of biofilm formation with regard to treatment strategies and failures.

**Core Course****Credits 1****MICR 823 : Microbial Effects on Climate and Geosphere**

This course covers geomicrobiology, the role of microorganisms in geochemical reactions, oil and gas origins, the production of methane and carbon dioxide, and how life in deep subsurface is similar to life on Mars.

**Core Course****MICR 824 : Advanced Biochemical Methods in Microbiology**

This course examines strict anaerobe maintenance, DNA extraction, DNA-DNA reassociation, sequencing, electrophoresis of proteins, indirect immunofluorescence, chemical analysis of cell walls, G+C content in DNA, gas chromatography, radioisotope techniques, microbial physiology, light-scanning electron microscopy, PCR primer design, detection of specific microorganisms, gene cloning, plotting and reference programs, and 16S rRNA database interaction.

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

**MICR 828 : General Immunology**

This two-credit course has been designed to provide students with an understanding of the major principles and mechanisms underlying the various aspects of the immune system, including tissues, cells, and soluble molecules. There is an emphasis on the interaction between innate and acquired immunity in response to inflammation and infection by different groups of pathogens. Clinically relevant topics are also emphasized. In addition to classroom instruction, students must do extensive literature research on a particular topic and submit a 20-page essay on this topic. Classroom instruction is completed with medical students enrolled in Medical Immunology.

**Core Course****Credits 2****MICR 829 : Current Topics in Immunology**

This is a one-credit course that includes extensive literature research with the option of either two 10-page essays on two different topics or one 20-page essay on one topic based on researched material. Regardless of the option selected, students must present one 45-minute PowerPoint presentation (followed by an oral question-and-answer session) on one of the selected research topics. Evaluation will be based on the essays, the PowerPoint presentation, and the ability to answer oral questions after the PowerPoint presentation.

**Core Course****Credits 1****MICR 832 : Current Topics in Medical Virology**

This research selective "Current Topics in Medical Virology" will be conducted in a journal-club type format, 7 hours of direct contact (1 hour/week for 7 weeks), 18 hours other. Direct contact will include 1 hour of instruction on how to select current research papers of interest, how to present research articles. Other hours include critical assessment and question preparation of 11 scientific research journal articles within the topic of Medical Virology, and preparation of one or two presentations [depends on the number of students enrolled] to the entire group. This selective will offer medical and graduate students an opportunity to review and critically evaluate current, scientific research in the area of Medical Virology.

**Core Course****MICR 920 : Research in Microbiology for MSc**

Students shall conduct research on a topic approved by their graduate supervisory committee for the MSc thesis.

**Core Course****Credits 6****MICR 990 : Master's Thesis in Microbiology**

Students shall prepare and submit an original thesis, which must be defended before the microbiology faculty and invited guests. This course cannot be repeated for credit. This course may be offered by different instructors and/or faculty members engaged in research and willing to supervise students.

**Core Course****MICR 991 : Doctoral Dissertation in Microbiology**

Students shall prepare and submit an original dissertation, which must be defended before the microbiology faculty and invited guests. This course cannot be repeated for credit.

**Core Course**



# PATH

## **PATH 500 : Basic Sciences Foundation for Clinical Reasoning (BSFCR)**

The BSFCR course is delivered using Small Group case based sessions only. These small group sessions are student driven, group discussion sessions that are organized in 50-minute case based session starting from presenting symptoms only. The course is not organized by system, but contains a random assortment of typical presenting symptoms for a variety of cases for all of the organ systems, and multi-systems cases. The sequence of the systems is not matched with the PCM2 course intentionally as the student development of the cases is meant to proceed by clinical reasoning skills alone and not by place in curriculum.

The objectives of basic sciences are discussed using multiple clinical vignettes, in a student led session with a training facilitator. For each case students receive a presenting symptom, equivalent to the first line of an NBME test item; through group discussion the students will form a hypothesis for the presenting problem and then work through

1. What further questions would be asked to differentiate between hypotheses (history)
2. What physical examination findings would be expected and how would they help to refine the hypothesis
3. What investigations would be helpful and how they would corroborate or refute hypothesis
4. What do the laboratory findings indicate and how do they apply to the hypothesis
5. Integrate all of the elements and summarize the final hypothesis with a summary statement of supporting elements using appropriate semantic qualifiers.

The clinical tutors monitor, guide, emphasize and correct the facts being discussed. In every small group session, the students are expected to demonstrate Professional behavior (PB), effective communication and interpersonal skills (CS) and demonstrate focused and analytical approach to the case. At the end of the session, all students

should have differential diagnosis and a summary of the main elements of the case with supporting and refuting evidence.

Each week will contain a formative assessment at the end of the week comprised of UWorld MCQs.

- 5 DLA stylelectures on summary statements and semantic qualifiers
- Uworld access 3 hours per week contributed to quizzes
- 11 case based small group sessions- 33 clinical cases
- 12 DLA based case reviews- guided case summaries
- 4 h comprehensive written assessment at the end of the course

A make-up examination will be offered 5 times per year: March, May, July, October, December.

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

## Physiology and Neuroscience

### **PHNS 800 : Physiology for Graduate Students**

The course will cover the basic physiology of all major organ systems as didactic lectures and clinical cases are presented in a small group learning environment. In addition, a chosen specialist subject will also be researched and presented both as a review paper and as a seminar.

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

### **PHNS 801 : Neuroscience for Graduate Students**

The major components of the course are didactic lectures, clinical case discussions, small group practical sessions, and online activities, as well as directed self-study and monitored activities.

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

### **PHNS 890 : Capstone Presentation for MSc**

The Capstone Presentation is a 50-minute seminar presented by the student to an audience and their supervisory committee. The presentation will cover the student's chosen specialist field.

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

### **PHNS 891 : Capstone Paper for MSc**

The Capstone Paper is based upon the student's chosen specialist subject. The student, having thoroughly and critically researched the literature, will write a review paper based upon their literature research. The paper is appraised by the supervisory committee and awarded a letter grade based upon the current SOM grading system.

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

## Preclinical

### **PCLN 3xx : Preclinical Project Research**

This course is offered in the final year of the preclinical program. It is a requirement for students in the School of Medicine combined degree program (Bachelor's/ MD). An emphasis of the class is to equip students with the skills needed to assess, understand, and critically evaluate published medical research. The course begins by reviewing standard research design and common pitfalls. It then covers other relevant topics, such as methodology, ethics, online research resources, survey design, and basic data interpretation. Students work together in small groups to produce a research paper and present a poster to the campus community.

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

# Principles of Clinical Medicine

## **PCM 500 : Principles of Clinical Medicine I (PCM1)**

PCM1 is a 21-credit course taught over 18 weeks in Term 4 of the Doctor of Medicine (MD) program of St George's University School of Medicine, Grenada. It is a systemsbased curriculum for the second academic year of the Basic Sciences program and is taught in four consecutive modules:

- Foundation to Clinical Medicine (4 weeks)
- Cardiovascular and Renal Systems (4 weeks)
- Respiratory and Hematopoietic Systems (4 weeks)
- Digestive, Endocrine and Reproductive Systems (6 weeks).

TOTAL: 18 Weeks

**Foundation to Clinical Medicine Module (FTCM):**  
During this module students are introduced to the four disciplines through general principles. They learn about the basic principles of integrated patient and cliniciancentered medical interviewing, physical examination and formulation of SOAP notes; the general principles of pathology including cellular injury and inflammation, neoplasia and hemodynamic disorders. They also learn about the basic principles of pharmacology including pharmacokinetics, pharmacodynamics, drugs affecting the autonomic system and pharmacology of pain. The module concludes with the study of skin, muscle and bone infections and skin pathology.

**Cardiovascular and Renal Systems Module (CRS):**  
This module introduces the student to study of systemic diseases, utilizing the principles gained in the FTCM Module and their knowledge of normal anatomy, physiology and biochemistry from BPM1, 2 and 3. The module starts off with the Cardiovascular System wherein students learn about the cardiovascular diseases, cardiovascular infections and the drugs that are used to treat cardiovascular diseases. This is integrated with learning about a hypothesis-driven approach for a patient presenting with a cardiovascular and peripheral vascular complaint and performing a comprehensive physical examination of the cardiovascular and peripheral

vascular systems. The next block is the Renal System where they learn about the renal diseases, urinary tract infections and conclude the module with pharmacogenetics and drugs used for coagulation.

#### Respiratory and Hematopoietic Systems Module (RHS):

During this module students' study about the Respiratory System wherein they learn about the pulmonary diseases, respiratory tract infections and the drugs that are used to treat some respiratory and mycobacterial diseases. They also integrate this with a hypothesis-driven approach for a patient presenting with a respiratory, head, eye, ear, neck and throat complaints and performing a comprehensive physical examination of these systems. The next block is the Hematopoietic System where they learn about the red and white blood cell disorders, this block is interspersed with teaching of anticancer pharmacotherapy. We conclude the module by learning about the blood and lymphatic infections and the drugs used to treat malarial infection.

#### Digestive, Endocrine and Reproductive Systems Module (DERS):

During this module teaching commences with the Digestive System wherein students will study gastrointestinal diseases, infections, and the drugs used to treat some gastrointestinal diseases. They will also learn about a hypothesis-driven approach for a patient presenting with an abdominal complaint and performing a comprehensive physical examination of this system. The following block will take them through Endocrine Pathology, where they learn about the disorders affecting endocrine glands; this block also incorporates the teaching of pharmacotherapy of endocrinological conditions. We conclude the module by learning about diseases of the male and female reproductive systems, sexually transmitted infections, and the drugs acting on the uterus and contraceptives. Students will also learn to incorporate focused history and examination of patients with complaints about the endocrinological and reproductive system pathologies.

#### **Core Course**

**Credits** 21

#### **PCM 501 : Principles of Clinical Medicine II (PCM2)**

The Principles of Clinical Medicine II (PCM 501) is a 19-credit course in Term 5 of the Doctor of Medicine (MD) program at the St George's University School of Medicine, Grenada. The first module completes the teaching of the basic science content allowing a smooth transition to the remaining modules that focus on the integration of multidisciplinary approaches to clinical scenarios that aid the students in preparation for their USMLE Step 1 Examination and their clinical years

#### **Core Course**

**Credits** 19

## Psychology

#### **PSYC 302 : Abnormal Psychology**

The course examines the etiology, epidemiology, description/classification, and treatment of disordered behavior. Major mental disorders are systematically examined from several different theoretical viewpoints, including psychodynamic, learning, cognitive, and physiological. A survey of psychological disorders is provided and students are introduced to the DSM-5 classification system. Treatment approaches based upon the major theoretical perspectives are covered.

#### **Core Course**

**Credits** 3

## Public Health and Preventive Medicine

#### **PUBH 814 : Emerging Infectious Disease**

**Core Course**

## School of Medicine

#### **AEP 999 : School of Medicine Academic Enhancement Program**

**Core Course**

## Selectives

### **SCSK 500 : The Prague Experience in Medicine**

This popular two-credit selective takes place in Prague in the Czech Republic during the last three weeks of July. Students are introduced to three teaching hospitals and a private practice clinic with 25 physicians. The students gain exposure to both adult and pediatric settings, and participate in team discussions, teaching rounds, lectures, and direct patient interaction. The thinking process that clinicians use when examining patients is introduced and discussed. Students assess the medical, cultural, and economic forces impacting different medical systems. After this selective, students will have developed an increased awareness of the globalization of medicine, expanding their perspectives and knowledge bases in patient care.

**Core Course**

**Credits 2**

### **SCSK 506 : Integrative Medicine**

This is a one-credit pass/fail selective that introduces students to a number of complementary therapies defined by the National Center for Complementary and Alternative Medicine (NCCAM), a division of the US National Institute of Health (NIH). This selective relies heavily on visiting professors, as well as on local practitioners to deliver material in a cohesive manner based on their area of expertise. The selective consists of eight lecture hours, two quizzes, and 14 workshops to be completed in a minimum of two terms, but a maximum of five terms. Although the lectures are open to everyone, students who wish to participate in the workshops, or receive credit on their transcript, must officially register for this selective.

**Core Course**

**Credits 1**

### **SCSK 507 : Regional Anatomical Dissection**

This one-term, two-credit selective will give participants the opportunity to undertake four detailed regional dissections of the human body. These regions include head and neck; back and thorax; extremities; and abdomen, pelvis, and perineum. Each regional dissection will be limited to the appropriate area but need not be a complete dissection of all the structures within the topic area. The ultimate objectives are to give students the opportunity to dissect regions of the human body of particular interest to obtain a deeper understanding of the anatomy of selected areas and for detailed anatomical preparation to be created for future clinical aspirations.

**Core Course**

**Credits 1**

### **SCSK 509 : Imaging and Anatomy**

This one-credit selective will give participants the opportunity to review the typical anatomical structure of the human body as seen in various radiological films, such as X-rays, MRIs, and CT scans. A major emphasis will be placed on the clinical application of gross anatomy as it relates to the various imaging methods, especially with hands-on experience with ultrasonography. Ultimately, the students' overall knowledge of clinical anatomy will be enhanced.

**Core Course**

**Credits 1**

### **SCSK 512 : Gross Anatomy Special Dissection**

This one-term two-credit course will give participants the opportunity to undertake detailed, professional-quality dissections of the human body. The ultimate objective is to allow students to dissect specific regions and/or organs of the human body in order to create "museum quality" specimens for teaching purposes. In so doing, students will learn the various techniques involved in the preparation of cadaveric material for display and teaching. These include dry bone/ligamentous preps, plastic embedding, and various plastination procedures. Ultimately, the students' overall knowledge of anatomy will be enhanced.

**Core Course**

**Credits 1**

**SCSK 513 : Medical Spanish for Health Care Professionals**

This one-credit selective, which will meet once a week for the entire term, is designed primarily to meet the needs of medical students who anticipate contact with Spanish-speaking patients in their future. In the United States, particularly, it has become an absolute necessity for health care providers to have at least a minimal understanding of the Spanish language in order to reduce frustrations stemming from the lack of ability to communicate with the nation's fastest-growing non-English speaking group. In addition to the significant lack of control that health care providers feel at not being in command of the language of their patients, the predicament of non-English speaking patients in need of medical care is of crucial concern as well. The course, which will be offered at the University's main campus, will provide students with a basic introduction to Spanish grammar and sentence structure, as well as an overview of vocabulary for specific medical purposes. Students will be expected to have had some exposure to Spanish language instruction, as well as be in good academic standing in order for the more specialized medical instruction to be beneficial. The course will cover such topics as emergency medicine, a visit to the family practitioner, basic anatomy, and dealing with sensitive cultural issues.

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

**SCSK 514 : American Sign Language (ASL)**

This one-credit selective is offered once per semester and will fall within the start/stop dates of Term 1. Ten (10) sessions are scheduled per semester. Students are expected to attend and actively participate once a week in a two-hour session where a teacher from the School for the Deaf will teach American Sign Language (ASL) and guest speakers will cover topics like speech training, causes of deafness, prevention of deafness, and knowledge about hearing aids. This will add to each session an element of theory and practical information related to deafness. Students are expected to practice their acquired sign language skills with each other between sessions and demonstrate some of their skills during each session.

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

**SCSK 515 : Clinical, Ethical, and Neuroscience Aspects of Pain**

Pain is an important symptom in medicine but undertreated pain and its management are relatively neglected in medical curricula. This one-credit selective will define pain and introduce it as a public health problem. It will explore the neuroanatomy and neurophysiology of pain, and psychological, sociological, and bioethical aspects of pain. Students will be taught to do pain histories, assess levels of pain and effectiveness of pain relief, and be introduced to treatment options. The course includes visits to Grenada General Hospital and/or geriatric homes and/or rounds with community nurses.

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

**SCSK 522 : International Spanish Experience**

This one-credit selective allows students to build and expand on medical Spanish language skills by participating in hands-on patient interaction in health care settings located in international settings. The course director assists with the identification and selection of a program that best meets student needs from a large variety of approved options available to them. All international programs have some degree of Spanish language immersion and practice opportunities throughout the selective. Settings will primarily focus on students applying those skills to patient interviews and basic medical care in clinics and hospital settings, participating in community health initiatives.

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

**SCSK 523 : Surgery**

In this four-week, one-credit selective, students attend three lectures about history taking, communication skills, and the history and running of the Grenada Health Services. Students attend clinics and surgical operations under guidance of a surgeon. They participate in taking histories from patients and observe the examination of these patients followed by discussions with the attending surgeon. They observe the examinations and surgical procedures in different specialties. They are required to keep a log of their activities and submit detailed case histories. A one-credit version with less time commitment is offered during the school term.

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

**SCSK 524 : Community Health**

In this four-week one-credit selective, students attend three lectures about orientation of the course including health care systems in Grenada, history taking and communication skills. Students attend the clinics under guidance of a Medical Officer. They participate in taking history from patients and observe the examination of these patients followed by discussions with the attending physician. They are required to keep a log of their activities and submit one detailed case history. A one-credit version with less time commitment is offered during the school term.

**Core Course****Credits 1****SCSK 525 : A Practical Experience in Tropical Medicine in Kenya**

This selective provides a practical field based introduction to tropical medicine in an East African cultural context. The annual selective runs for 2 weeks (May — June) and is open to all MD and DVM students. The selective, which has run continuously since 2009, provides opportunities to shadow local consultants, conducting rounds in a wide range of clinical specialties in district and provincial hospital settings. Visits to orphanages, historical sites, animal sanctuaries and cultural and scenic areas make for a comprehensive experience in East Africa. Time is spent in remote rural areas with the nomadic pastoral Masai people where "One Health" comes into sharp focus. The people live on the milk and blood from their livestock which are heavily dependent on the environment. All aspects of medical and veterinary medicine, public health, and climate change can be debated in this fast disappearing and unique way of life. The selective culminates with a flight to the world famous Masai Mara game reserve where the greatest concentrations of African wildlife are to be found. Here two nights are spent in a luxury tented camp and one can learn about wildlife, domestic animal, and human interface. The selective is run by Cal Macpherson who spent more than 30 years in East Africa including 10 years with the Flying Doctors (AMREF), which is today one of the largest NGOs in Africa. He has spent over 10 years working with nomadic populations in East Africa and in many other parts of the world.

**Core Course****SCSK 528 : Clinical Professionalism in Sweden**

This intensive selective is hosted by a neurologist at Uppsala University in Sweden for one week. Students build upon their professional competencies and skills while learning about conflict resolution, cultural competence, the Swedish health care system, and other topics. Students interact with patients, doctors, and other medical students in clinical and classroom settings. They are assessed through team projects on the topics of their choice and presented conference style on the last day. Uppsala's medical school is among the oldest in the world.

**Core Course****SCSK 529 : Bioethics Today**

The selective is designed for students with an interest in bioethics who want to further develop their knowledge. It uses a seminar format to examine aspects of medicine, public health, research, environment, and other topics. Fifteen contact hours can be spread over several semesters in Grenada. These are led by faculty, visiting professors, and students. Students in the Keith B. Taylor Global Scholars Program are encouraged to enroll and options for written assignments, sonic foundry, and/or teleconferencing will be provided. Students are required to lead one seminar or journal club discussion during their last year in Grenada. Most sessions are held at noon as part of the Bioethics Grand Rounds Series.

**Core Course****Credits 1****SCSK 534 : India Medical Experience**

The students spend 15 days at the Krishna Institute of Medical Sciences University (KIMS), Karad, Maharashtra, India, usually in the last two weeks of July or December. They get hands-on clinical exposure under dedicated clinical professors in medicine, surgery, OB/GYN, pediatrics, ICU, radiology, radiotherapy, clinical anatomy, pathology, alternative systems of medicine, community outreach projects in breast cancer, oral cancer, etc. They assist in surgeries, childbirth, and management in out-patient departments (OPDs), wards, and casualties. Students interact with other medical students and residents from India, Malaysia, Sri Lanka, Indonesia, and United States. They also get exposed to health practices in a rural community teaching hospital. The cultural exposure has been very rewarding to students.

**Core Course**

**SCSK 536 : Current Topics in Medical Mycology**

This selective is conducted in a journal club format; 7 hours of direct contact (1 hour/week for 7 weeks), and 18 other hours. Direct contact will include instruction on selection of topics and presentation skills. Other hours include preparation of one or two presentations to the entire group and critical assessment question preparation of peerpresented articles. The selective will offer both medical and graduate students an opportunity to review and evaluate current scientific research in medical mycology.

**Core Course****SCSK 537 : Dive Emergency and Rescue**

This one-credit scuba diving selective involves completion of two modules. Module I provides theoretical and practical training in avoiding, recognizing, and managing dive-related emergencies underwater, at the surface, and on land. Module I, which is taught by professional dive instructors, takes two days and leads to PADI Rescue Diver certification. Module II provides an introduction to hyperbaric oxygen treatment for dive-related injuries and includes training in conducting a neurological exam in persons suspected of having decompression illness. Module II involves seven hours of classroom sessions scheduled across multiple days. Prerequisites for this selective are Advanced Open-Water Diver certification and Basic Life Support certification.

**Core Course****Credits 1****SCSK 538 : Current Topics in Neuroscience and Neurology**

This course follows a journal club format and will lean toward learning critical reading and appraisal of an article, keeping up to date with current medical literature relevant to neurology and neuroscience, identifying research areas of interest in neuroscience, and improving the background basic knowledge for future interactions in a clinical setting. In the beginning of the course, an introduction is given on how to conduct literature searches. At the end, students will attend a critical summary lecture of the course. The other hours include student-driven presentations or optional presentations given by persons not enrolled in the course (not for credit), as well as preparation of presentations. Each student must give one presentation as well as serve as an audience member during other students' presentations and ask at least one question of each article, which they also have read. The course director will choose the level of complexity of the articles, to fit the level of the individual student to reflect his/her level of education.

**Core Course****SCSK 540 : Global Touch of Medicine**

Students in Term 1 can register for this selective. It runs over three terms, two in Newcastle (Terms 1 and 2) as part of the KBTGSP and one (Term 3) in Grenada. At completion of this selective, students will understand why different systems have evolved and exist over time and interpret the pros and cons of each. While in the KBTGSP in Newcastle you will learn about the UK National Health System (NHS), then go on to learn about the Grenada health care system during your final year of basic sciences on the True Blue campus. The elements of this selective consist of: public lectures, seminars, active participation in research days, participation in health fairs and/or activities linked to charity organizations, and other activities by discretion of the course directors. Lectures and seminars usually are a onehour activity and count toward one hour for the selective. Activities such as research days and health fairs add to half an hour for every two hours of active participation in the event. A logbook must be kept by each student and should be signed off at every event. A total of 15 hours is sufficient to be eligible for obtaining one credit for this selective. In closing the selective there will be a session where all participants give a short presentation of their experience to peers, faculty, and interested parties.

**Core Course**



**SCSK 543 : Observation in Medical Settings in UK and Grenada**

This selective is offered to expose students early to the life as a physician on both sides of the Atlantic. Students will be able to apply basic science knowledge to cases seen in the physician's everyday practice and present these to their peers and faculty. They will have a unique experience of two different health systems. A number of lectures/seminars will cover the history and management of health systems.

**Core Course****SCSK 545 : Microbiology Selective I**

This course consists of laboratory and/or field research on an ongoing problem under the direction of one of the three above-named principal investigators. Thirty-two hours of active research participation must be documented in order to obtain credit.

**Core Course****SCSK 546 : Microbiology Selective II**

This course consists of laboratory and/or field research on an ongoing problem under the direction of one of the three above-named principal investigators. Thirty-two hours of active research participation must be documented in order to obtain credit.

**Core Course****SCSK 551 : Examination Skills in EENT**

Over an eight week period, in 10 sessions, the participants will learn and do several examination techniques related to the eye, ear, hearing and balance. History taking skills and empathy are further aspects the participant will be engaged in.

**Core Course****SCSK 555 : Stress & Resilience**

This course investigates the physiological and psychological effects of stress, especially chronic stress, and orient students to lifestyle choices-their own and that of their patients. It provides an overview of literature concerning stress, resilience, and lifestyle choices and interventions, and teaches a number of stress management tools which have been demonstrated to be clinically effective and/or efficacious. the course is expected to be personally as well as professionally relevant for the future physician.

**Core Course****SCSK 556 : One Health, One Medicine**

The course will explore veterinary, environmental, management and legal applications to human health through multi-disciplinary education, research and practice experiences.

**Core Course****SCSK 557 : Intro to Medical Animation**

Introduction to fundamental techniques of animation involving medical and biological subject matter.

**Core Course****SCSK 559 : Ultrasound Selective**

A multi-faceted selective building on Term 1 ultrasound training through the provision of supplementary "hands-on" experience, a research project in an area of interest with the goal to prepare interested students for further experience in a clinical setting.

**Core Course****SCSK 561 : Facilitation in Medical Education**

The overall intent for the course is for participants to gain an understanding of collaborative learning pedagogy, to demonstrate proficiency in apply these concepts themselves within a small group, and be able to relay their understanding and experience to other, more novice, facilitators.

**Core Course****SCSK 562 : Principles of Aerospace Medicine**

Aerospace medicine will expose students to the medical applications for aviation and factors of altitude, acceleration and flight deck/cabin conditions on human health towards examination and certification of aircrew and managing passengers.

**Core Course**

**SCSK 563 : Basic Hyperbaric Medicine**

Basic Hyperbaric Medical Theory and Practice will involve lectures covering major fundamental topics relevant to hyperbaric medicine. Successful completion of the course will reflect dutiful participation of students in the didactic and practical sessions and achievement of a passing grade on a final examination. The course will be delivered once annually in late Spring/early Summer, after then end of the SOM academic term. In elaboration of Course Pre-Requisites, successful completion (with passing grade(s)) of Term 1 SOM is required (either BPM 1 or Term 1 Disciplinebased Curricula). Successful completion of this course and another selective (Advanced Hyperbaric Medicine) will collectively facilitate sitting for the examination for certified Hyperbaric Technologists through National Board of Diving and Hyperbaric Medical Technology (NBDHMT).

**Core Course****SCSK 564 : Advanced Hyperbaric Medicine**

Basic Hyperbaric Medical Theory and Practice will involve lectures covering major topics relevant to applied hyperbaric medicine with a special focus on safety. Successful completion of the course will reflect dutiful participation of students in the didactic and practical sessions and achievement of a passing grade on a final examination. The course will be delivered once annually in late Spring/early Summer, after then end of the SOM academic term. The course will be immediately preceded by its pre-requisite, Basic Hyperbaric Medicine (with passing grade). Successful completion of this course will facilitate sitting for the examination for certified Hyperbaric Technologists through National Board of Diving and Hyperbaric Medical Technology (NBDHMT).

**Core Course****SCSK 565 : Well-Being**

Extracurricular activities add to well-being. Intrinsically or extrinsically motivated or by both, these activities need to be acknowledged as an encouragement to continue and portray a diverse lifestyle. The selective is one credit (16 points) and participants need to accumulate 16 points (by participating in a wide range of in- and outdoor activities) over at least two terms to receive one credit on their transcript. Recognition is given to honor students who have acquired more points. Recognition takes place two weeks before completion of Term 5. In each term a maximum of 8 points will count towards the 16 points this selective requires. Extra points accumulated during the term will be transferred and recognized towards the end of term five.

**Core Course****Credits 1****SCSK 567 : Critical Care**

Introduction to Critical Care and Anesthesia is a (1) credit course that presents aspects of intensive care and anesthesiology relevant to medical students interested in this field. This course has been developed to provide students from terms two through five, a basic foundation to the disciplines. This course will start with an introduction to laboratory values and ventilator strategies pertinent to the intensive care environment. The course then continues into basic knowledge of critical care pharmacology, pediatric and neonatal critical care, intracranial pressure, and hemodynamic pressure waveform monitoring in conjunction with central line placement, intra-aortic balloon pump and ECMO therapy, invasive cardiac pacing and defibrillation, and finally fluid therapy and massive transfusion in the intensive care unit. The course will be composed of lectures, online activities, and small group sessions to further instill practicality to learned material in the course.

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

**SCSK 568 : Romania Selective**

Dermatology and rehabilitation medicine are two of three aspects students will be exposed to in this selective. The third aspect is the nursing home experience where chronic disease, be it of physical or mental nature, is a challenge. Interprofessionalism and interdisciplinary care play a major role here. Emphasis is placed on communication and collaboration with other healthcare providers. Details will be available in the course syllabus

**Core Course****SCSK 569 : Naturopathic Medicine Selective**

In this selective, students become familiar with the six principles of naturopathic medicine and recognize the benefits of a holistic approach to care.

**Core Course****SCSK 570 : Medical Animation Techniques For Patient Education**

Medical professionals must interpret and relate the process of disease and treatment to their patients on a daily basis. Many patients will have difficulty understanding even the most basic concepts that have a serious impact to their health. Using storytelling and moving visuals, along with accessible technology such as dry erase markers, a whiteboard, a camera phone and Microsoft PowerPoint, an otherwise complex condition can be interpreted and made simple for patient comprehension. In this course you will become aware of and practice fundamental principles of making visuals move on screen in a way that tells an engaging story. Although the focus is on patient education, these skills may prove useful to you in any situation, where you must present difficult information to a varied audience.

**Core Course****SCSK 571 : Honors Selective I**

In one way or another, most practicing physicians are involved in assessing the competence of trainees, peers, and other health professionals. However, they may not be as comfortable using educational presentation and assessment tools as they are using more clinically focused diagnostic tests. This one credit selective is aimed at introducing students to the educational practices of teaching/facilitation and assessments in medical education.

**Core Course****Credits 1****SCSK 572 : Introduction to Wilderness Medicine**

Introduction to wilderness medicine is a one (1) credit course that presents a comprehensive medical guide for student physicians who venture into remote and often austere environments. This course has been designed to introduce students in terms two through five the differences between medical care in the hospital and in the wilderness when definitive care is often days away. The course will begin by defining the field of wilderness medicine to include the pathway to fellowships in wilderness medicine as well as the role of a physician on an expeditionary team. The course then continues discussing the patient assessment system in wilderness medicine, common medical emergencies, trauma emergencies, environmental exposure injuries, dive medicine, altitude medicine, environmental toxicology, as well as management of mental health crisis in the wilderness. The course culminates with a discussion on expedition planning to include a trip to Grand Etang National Park to demonstrate the skills discussed and practiced during lecture in a wilderness setting. Note: Students must complete the practical skills portion of the course for a pass mark. Participation will require the ability to complete a two mile moderately strenuous hike.

**Core Course****Credits 1****SCSK 573 : General Neurology**

During the selective students gain exposure to conditions commonly treated by neurologists. This may include neurooncology, multiple sclerosis, movement disorders, headache, epilepsy, general neurology, aging and dementia, neuroophthalmology, autonomic disorders, sleep disorders, neuropathology, and neuromuscular diseases. Students may opt for a day in the operating room with the neurosurgery team, a day in the neuroimaging suite with CT and MRI equipment, an evening with sleep studies. There will be opportunity to conduct a thorough neurological exam; and provide recommendations for diagnostic tests, imaging, and possible therapeutics under guidance. Students will have a unique opportunity to read the primary literature on these patients and quickly develop expertise on patients who present with neurological disorders.

**Core Course**

**SCSK 575 : Honors Selective II**

The course covers the writing, and delivery of NBME style questions to either sell group or large group audiences. The selective is PASS/FAIL

**Core Course****SCSK 578 : Yoga & Meditation-Medicine Therapy**

This selective is largely experiential. It consists of 10 hours of ZOOM workshops; 1 hour/day from Monday-Friday over a period of 2 weeks. There will also be 6 hours of self-study which includes additional resources and lectures students can access online.

**Core Course****SCSK 580 : Neuroanatomical Correlates Of Medical Neuroimaging**

Giving participants in this course the opportunity to practice correlating CNS and PNS dissected specimens with medical imaging by CT and MRI is expected to increase their visuospatial and image interpretation skills. It is expected that the development of skills in correlating anatomical images with routine medical imaging will improve their basic science and clinical performances on all competitive exams. This selective is designed to solve the complex nature of medical imaging. Knowledge gains will be measured by the pretestposttest model. At the beginning and end of the selective, participants will be given quizzes requiring them to correlate brain and spinal cord specimens with CT and MRI.

**Core Course****SCSK 581 : Arts & Medicine**

The arts (e.g., literature, films) can contribute to whole person understanding (i.e., a particular individual) by insight into common patterns of response (common or shared human experience), into individual difference or uniqueness and/ or enrichment of language and thought (Anne Scott, 2000). The tools to our disposal are reading, observation, description, perception, discussion, critical thinking, communication skills and creative expression. Through literature, observation of artworks aided by visual thinking strategy (VTS), watching films, involvement with improv, modalities in NLP, and reflection the student will explore their inner self compare, share, and communicate.

**Core Course****SCSK 582 : Leadership**

Each student will face leadership challenges in life either as a formal leader or a member of a team which can have a major impact on one's career. It is therefore necessary to become familiar with different ways of exercising leadership, to recognize one's own strengths and weaknesses, and how to collaborate in a leadership context. This selective offers a close look on leadership. Topics include leadership theories, personal assessment and development, values and ethics, motivation, power, communication, group dynamics, multiculturalism in leadership, conflict resolution, performance excellence, and change and innovation. Through a process of readings, case studies, self-discovery, and group dynamics the student will observe identify, analyze, and apply leadership behaviors.

**Core Course**

### **SCSK 583 : Culinary Medicine**

The Standard American Diet (SAD) includes high consumption of ultra-processed foods, refined flours, added sugars, and sodium along with low consumption of vegetables, fruits, whole grains, and legumes. Nearly 80% of the chronic diseases faced by those in the U.S. are preventable through lifestyle changes. Poor diet has been identified as the top contributor to early death and lost healthy life years in the U.S.

On average 20 hours is spent on nutrition content in US medical schools and much of the content focuses on biochemistry and micronutrient deficiency states. Very little, if any, time is dedicated to helping students learn the components of a healthy diet, how to make a healthy diet enjoyable and practical, or how to effectively counsel patients on making healthy dietary changes.

This course does not include comprehensive nutrition information but does highlight resources and key points. Because students come from a variety of backgrounds and food traditions, the course presents a predominantly whole food, plant-based (WFPB) diet through the lenses of different world flavors and culinary traditions.

Given that any level of behavior change can potentially yield improved health and well-being, every effort should be made to meet individuals where they are, assess readiness for change, provide assistance, and partner with them to support moving along a spectrum as far and as fast (or slow) as they are willing and able to go from a SAD (or less healthy diet) toward a WFPB diet. Motivational interviewing to tailor assessment, recommendations, and interventions according to a patient's personal goals and readiness for change is suggested.

Student time commitment includes 10 sessions where the flipped classroom model may be used in which much of the didactic content and reading materials are viewed online or read ahead of class in order to allow class time to be spent doing interactive activities--in this case, hands-on cooking and interactive dinner discussions. Sessions may have 10-30 minutes of video content, plus recipes and other handouts to be watched/read/reviewed prior to each session. Other sessions involve activities such as

an interactive visit to Laura Land spice garden in St. David/SGU on campus garden/Or Hage garden, visit to the market in St. George's/Grenville, and Marketing Board and cooking/preparing a dish and eat/share it. Finally, a report stating the main message of each session, and a reflective essay of two pages completes the selective.

#### **Core Course**

### **SCSK 584 : Narrative Medicine**

Narrative medicine can shape our understanding of disease and treatment, normality, and disability as well as our culture's attitude towards these issues. This narrative medicine selective is a one credit extracurricular course using the following components:

- Close readings of various types of fiction (novels, films, short stories, poems) and news media
- Presentation of clinical case studies and practice of patient interviews (narrative medicine history taking)
- Research papers to investigate health and disease
- Exploration of neurolinguistic programming, storytelling, and metaphor
- Reflective essays
- Group discussions

#### **Core Course**

**Credits 1**

### **SCSK 585 : Yoga & Meditation as Integrated Medicine—Advanced Level**

This selective has 10 hours of workshop trainings on ZOOM (1 hour/week for 10 weeks), 10 hours of study and practice (1 hour/week for 10 weeks)

#### **Core Course**

### **SCSK 586 : Visual Storytelling for Research Communication**

Medical professionals must interpret and relate the process of disease and treatment to both patients and the scientific community on a regular basis. Learning to relay this information in a captivating and informative way using design thinking and a popular software such as Microsoft PowerPoint is the goal of this selective. In this course the participant will learn how to create engaging, informative and well-rounded presentations that will build a base for any future science communication engagements such as conference presentations, lectures or professional evaluations. It can also be useful for public health awareness campaigns. The participants will learn the tools that help with their visual storytelling, including but not limited to: layout, images labeling, animation and rhetoric/verbiage.

#### **Core Course**

### **SCSK 587 : 3D Visualization with DICOM**

Clinicians and Medical Illustrators collaborate to create visualizations that help others understand medical conditions. We all know that imagery has the power to help us conceptualize and understand the complexities of the human body, but how are these images made? During this course, you will learn the basics of creating 3D visualizations using accessible technology such as an open source OJ COM Viewer and a web-based 3D model viewer. Together, we will explore the use of CT/MRI data to teach others about the location of their pathology in three dimensions. Creating a 3D model from CT/MRI data and adding simple annotations will enhance your ability to engage and educate your audience through virtual dissection and interactivity. Upon successful completion of this course, you will demonstrate DICOM visualization techniques and publish a 3D model online.

#### **Core Course**

### **SCSK 588 : Tai Chi and Qigong for Prevention and Treatment of Chronic conditions- Advanced Level**

By the end of the selective, students will be able to:

1. Create a treatment plan for case patients suffering from a chronic ailment utilizing Tai Chi and Qigong.
2. Explain the scientific basis for how Tai Chi and Qigong are effective as prevention to rehabilitation.
3. Describe the philosophical and historical foundation of Tai Chi and Qigong.

The selective is 10 hours of workshop training on Zoom (1 hour per week over a 10 week period) and 10 hours of self-study and practice (1 hour/week)

#### **Core Course**

### **SCSK 589 : Eastern Arts For Step 1**

20 hours of workshop training on ZOOM: 2 sessions of one hour each/week over a 10 week period. An additional 20-30 minutes/day of personal practice is highly recommended. The sessions will run in the same manner as the other 3 selectives by Mr. Weitzman. Each session begins with a bit of theory, then about 40 minutes of practice and a wrap-up.

This program is very practical. It is offering PRACTICES for dealing with stress and anxiety during test prep and during the test itself. It is not set-up for therapy and discussions about people's emotional states. Any questions (this happens either by people talking or through writing messages on ZOOM) will refer to the practices.

Participants are expected to practice the exercises on their own during the week. Thus, it is a largely experiential learning based program. Participants are not asked to do any theoretical research (this would not be the best idea while studying for STEP 1).

There is research about meditation and health. A diverse range of meditative exercises from the Eastern arts may help alleviate students' stress and anxiety while preparing for the STEPS. This may lead to two outcomes:

1. Improved state of health and well-being
2. Improved test scores.

### **Core Course**

### **SCSK 700 : Netter's Clinical Procedures Course**

To Introduce medical students interested in surgical specialties, into surgical simulation with the aid of fresh cadavers in an operating room setting. The exposure with fresh cadavers is typically offered only to attendings and fellows, however recent literature suggests that early exposure of medical students into fresh cadaver surgical simulation increases their core competences during rotations and residency.

### **Core Course**