



St George's University

School of Medicine

Course Code & Title: BIOL 321-Summer Molecular Biology
Number of Credits: 2 Credits
Days and Times: Mondays to Fridays, 11.00 a.m. – 12.15 p.m. (Grenada time)
Semester and Year: Summer, 2021
Pre-requisite(s): Gen Chemistry, Organic Chemistry, General Biology & Genetics
Co-requisite (s): Biochemistry
Classroom Location: Virtual (online).
Course Director: Dr. Felicia Ikolo

Course Lecturer Name(s): Dr. Felicia Ikolo
Dr. Mary Maj & Mr Teddy Ikolo

Course Director Contact Information: X3425 fikolo@sgu.edu
Course Lecturer(s) Contact Information: X3169 mmaj@sgu.edu
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Course Director Office Hours: M - F 10:00 a.m.-11:00 a.m. or by appointment
Course Lecturer(s) Office Hours: By appointment

Course Management tool: Learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

Course Description: BIOL 321 Molecular Biology
This upper-division course is designed to help students develop an understanding of the molecular mechanisms that biological organisms use to store and preserve genetic information, the means by which they use that information to create functional biological structures, and the techniques that are commonly used to manipulate and study these processes in the laboratory in health and disease. A basic understanding of chemistry, biology, genetics and biochemistry will be assumed.

Course Goals: To provide students with information to enable them have a clear understanding of the basic concepts and core principles of molecular biology. Students will gain knowledge on the applications of molecular biology in the basic sciences, biotechnology and medicine.

Course Objectives:

- 1) Apply knowledge of the basic structures and fundamental processes of life at the molecular, cellular and organismal levels.
- 2) Apply knowledge of the structure and function of the human body to health issues.
- 3) Apply knowledge of the interaction of subatomic particles and biochemical processes that define organic and inorganic matter.

Student Learning Outcomes: At the end of this course, students should be able to:

- 1) Describe the transmission of hereditary information for DNA, RNA and protein as a result of the processes of DNA replication, transcription and translation.
- 2) Explain how proteins and enzymes regulate the biological processes of DNA replication, transcription and translation.
- 3) Describe how DNA can be manipulated to facilitate the understanding of gene function, analyze gene sequence and to genetically modify organisms.
- 4) Describe how DNA is analyzed to determine genotype as it relates to human disease.

Program Outcomes Met By This Course: Chartered Foundation Program (CFP), MCAT, SAS Biology, Pre-Med & Pre-Vet.

Grading Scale - Grades will be assigned as follows:

A = 89.5% or better

B+ = 84.5- 89.4%

B = 79.5 – 84.4%

C+ = 74.5 - 79.4%

C = 69.5 - 74.4%

D = 64.5 - 69.4%

F = 1.0 - 64.4%

Course Materials:

Powerpoint or PDF notes, videos and textbooks:

Textbooks for this course are not mandatory. You may find the following textbooks under reserve in the library:

1) T.A. Brown 2017. Genomes 4. Garland Science.

This textbook is currently available in the library for one week loan and 3 are held on reserve. Page numbers are included on the lecture schedule.

2) Klug, Cummings, Spencer and Palladino 2015, Concepts of Genetics, 11th Edition, Pearson Education Inc. This textbook is currently available in the library for one week loan and 3 are held on reserve. Page numbers are included on the lecture schedule.

3) Alberts, Johnson et al. 2014, Molecular Biology of the Cell, 6th Edition, Garland Science

Important pages and chapters to accompany the lectures can be found in the lecture schedule.

Supplementary Readings/Resources:

Course Requirements and Percent of Grade:

All quizzes and exams will be computer based using the ExamSoft software. Please read the document "Computer Requirements for ExamSoft Document.pdf" found in Mycourses in the Resource folder. There will be two online quizzes (online quiz 1 and online quiz 2), each worth 2% of your final grade. There will be two exams, (Exam 1, worth 40% of your final grade) and Exam 2 (final exam, worth 56% of your final grade). The **questions distribution for quizzes and exam is as follows:**

Online Quiz 1: Covers L1 – 7, plus DLA 1, 2, 3 & 4

Exam 1: Covers L1 - 7, plus DLA 1, 2, 3 & 4.

Online Quiz 2: Covers 20% from L1-7, plus DLA 1, 2, 3 & 4 and
80% L9 - 12, plus DLA 5, 6, 7 & 8.

Exam 2 (Final Exam): Covers 20% from L1 - 7, plus DLA 1, 2, 3 & 4 and
80% from L9 - 12, plus DLA 5, 6, 7 & 8

Percentage of grade

4% Online Quizzes (Two online quizzes, 2% each)

40% Exam 1

56% Exam 2 (Final exam)

*****Marks are earned through your performance on quizzes and examinations and will not be negotiated.**

PLAGIARISM POLICY: ACADEMIC INTEGRITY

The St. George's University Student Manual (2016/2017, page 24) states as follows:

“Plagiarism is regarded as a cardinal offence in academia because it constitutes theft of the work of someone, else which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated.”

Plagiarism also includes the unintentional copying or false accreditation of work—so double check your assignments BEFORE you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

Students with Disabilities and Special Challenges

A student who has a disability or a special challenge that requires some modification of the seating or other class requirements must contact the course director so that appropriate arrangements can be made.

Attendance Policy

Assignment Submission policy

Classroom Etiquette

The sound on cell phones and computers must be switched off during lecture time.

Online Etiquette

Students of St. Georges University, Molecular Biology BIOL321, who create/contribute to social networks, blogs, wikis, or any other type of social media both on and off the sgu.edu domain for school/work/personal purposes WILL NOT post or release proprietary (including all information found on or within databases of any official SGU websites such as SAKAI), confidential, sensitive or personally identifiable information about SGU faculty, administration or employees as well as any faculty intellectual property, to ANY social media websites. Failure to abide by this will be considered a violation of professionalism as indicated in the SGU Student Handbook.

Disclaimer: It is your responsibility to read and understand the policies, laws, rules and procedures that, while they could affect your grade for a course, have not been specifically outlined in the course syllabus. These are contained in the St. George's University Student Manual.



St. George's University

Grenada, West Indies

DEPARTMENT OF PRECLINICAL SCIENCES

BIOL441 – HUMAN PHYSIOLOGY

COURSE SYLLABUS

Version of June 2021, approved by the Dean of Basic Sciences

This version will supersede any previous editions of this document.

**The university reserves the right to change or amend the rules and regulations at any time.
The new rules and regulations will be applicable to all students registered.**

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SECTION A: COURSE INFORMATION

BIOL441 HUMAN PHYSIOLOGY – GENERAL DESCRIPTION

Course Code and Title: BIOL 441 - Human Physiology

Number of Credits: 4

Days and Times: June 30, 2021 – 2nd August 2021

Semester and Year: Summer 2021

Classroom Location: Online Delivery

Course Email Address: physiology441@sgu.edu (to be used for all course related matters)

Course Director/s Name: Dr. Kesava Mandalaneni & Dr. Gabrielle Walcott-Bedeau

Course Director Contact Information: kmandalaneni@sgu.edu

Course Lecturer(s) Office Hours: varies according to faculty

Course Director Office Hours: varies weekly

Course Director Office Location: Lower Charter Hall,

Course Support: Ms. Shennel Boca, sboca@sgu.edu

Course Management tool: Sakai, To learn to use the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

BIOL441 HUMAN PHYSIOLOGY – COURSE DESCRIPTION

Human Physiology (BIOL 441) is a 4-credit course presented over 4 weeks as part of the discipline-based Premedical Science curriculum of St George's University School of Medicine. It is designed to provide a fundamental basis for understanding human physiology pertinent to clinical medicine based on the Medical Physiology Learning Objectives published by the American Physiological Society (APS). It is one of the final prerequisite courses for the third-year Premedical Sciences and Biology students, and a central component of the Charter Foundations to Medicine program. Course topics teaching the essential elements, concepts and organ systems in human physiology are delivered across four consecutive blocks:

Module Name	Duration (weeks)
Block 1- (CTP) Cell and Tissue Physiology: Homeostasis, Excitable tissue, & Intro to Nervous System	
Block 2- (S1) Systems: Neurophysiology, Autonomic Nervous, & Cardiovascular Systems	
Block 3- (S2) Systems: Pulmonary, Gastrointestinal Systems	
Block 4- (S3) Systems: Renal, Endocrine Systems	
Total:	4

(CTP) CELL AND TISSUE PHYSIOLOGY: HOMEOSTASIS, EXCITABLE TISSUES, & INTRO TO NEUROPHYSIOLOGY

The theme of this block is to provide a solid foundation with the basic concepts of physiology and their application to the organ systems subsequently encountered in this course and throughout undergraduate medical education. Students will be introduced to the language embedded in physiology, the biological molecules associated with cells, tissues and organs and their roles in physiological processes. This block includes homeostasis and its control, properties of excitable tissues, and an introduction to neurophysiology. This will lead the students towards functional of understanding normal and abnormal human physiology, interpretation of clinical data, and eventual recognition of pathophysiological conditions. Group-based interactive sessions are introduced early in the block to facilitate both student learning and the development of collaborative interpersonal skills in accordance with the Association of Medical Colleges (AAMC) guidelines on professional competencies^{1,2}.

(S1) SYSTEM: NEUROPHYSIOLOGY, AUTONOMICS, & CARDIOVASCULAR SYSTEM

The goal of this block is to provide students with a comprehensive knowledge base for understanding the Nervous and Cardiovascular systems. Building upon the concepts from block 1, the normal gross and microscopic anatomy, molecular mechanisms, physiologic

functions will be presented. Particular attention is given to the interrelation of these two systems via the autonomic nervous system (ANS), and provides the foundation upon which all of the body's homeostatic responses are further considered. Collaborative group sessions are an integral component for mastering the content explored in this module.

(S2) SYSTEMS: RESPIRATORY & GASTROINTESTINAL SYSTEMS

Systems 2 expands students' knowledge base with the Pulmonary and Gastrointestinal systems. Again, lectures introduce the normal gross and microscopic anatomy, molecular mechanisms, physiologic functions of these systems, and integration with content from previous blocks continues to be emphasized. Diseases such as Asthma and COPD are used to illustrate key principles. Additionally, significant attention is given to the dynamic physiologic relationship between the Nervous, Cardiovascular, and Pulmonary systems underlying the body's capacity to preserve homeostasis and adapt to life's everchanging conditions. The GI system provides several examples of how its structure and function compare and contrast to processes covered previously. Group sessions remain essential for student understanding of the complex interactions between these systems.

(S3) SYSTEMS: ENDOCRINE & RENAL SYSTEMS

This block culminates with the Endocrine and Renal systems. Normal gross and microscopic anatomy, molecular mechanisms, and physiologic functions are presented. The vital role that these systems play in regulation of fluid balance, electrolytes, nutrients, and energy are incorporated with previous systems to explain the body's ability to maintain the homeostatic environment necessary for sustained health and growth over the long-term. The mechanisms of reproduction are discussed, as well as diabetes and the impact of hyperglycemia across multiple organ systems. Group sessions continue to be instrumental as consideration of physiological function throughout the whole human body is discussed and applied to clinical situations.

GOALS AND OBJECTIVES

MISSION

The BIOL441 Human Physiology Course embraces the mission of the Doctor of Medicine Program of St. George's University School of Medicine:

“To provide an international, culturally diverse environment in which students learn the knowledge, skills and attitudes required for postgraduate training in the health profession while being inspired to develop compassion, curiosity, tolerance and commitment to patients and society, dedication to life-long learning and an understanding of the vital role of research in healthcare.”

ENTERING MEDICAL STUDENT EXPECTATIONS

As an integral component of St George's University's Premedical Sciences course offerings, BIOL441 Human Physiology prepares students to meet several of the AAMC's Entering Medical Student Expectations, or Entrance Competencies (**E1.1**, 1.2, 1.3, 1.6, 1.7; **E3.1**, 3.2, 3.4, 3.6; **E4.3**, 4.4, 4.5; **E5.1**, 5.2; **E6.1-6.4**; **E7.1-7.3** below) by providing students with opportunities to:

“Demonstrate both knowledge of and ability to use basic principles of mathematics and statistics, physics, chemistry, biochemistry, and biology needed for the application of the sciences to human health and disease; demonstrate observational and analytical skills and the ability to apply those skills and principles to biological situations.”

FACULTY, STAFF AND CONTACT INFORMATION

ADMINISTRATIVE QUESTIONS

For all administrative questions (including notification of absence from lab or small group activities) contact our departmental secretaries, module coordinators and course directors at:

**SGU Premedical Science Department,
Physiology Department Grenada – physiology441@sgu.edu**

(Please do not send a message to all faculty or to individual faculty members). Faculty and staff will not respond to emails during the weekend. Last email responded to will be Friday at 4:00pm.

CONTENT RELATED QUESTIONS & FAQ

For all content-related questions, the most efficient way of interacting with your peers and faculty is by using the Discussion Form in Sakai, the learning management system. Students can find a more detailed [description of the Discussion Forum](#) in the student support section below.

Frequently asked questions can be found in a supplemental document on Sakai resources folder.

COURSE LEADERSHIP TEAM

SGU BIOL441, Grenada	Department	Email Address
Dr. Gabrielle Walcott-Bedeau & Dr. Kesava Mandalaneni Course Directors	Physiology/Neuroscience	gwalcott@sgu.edu kmandalaneni@sgu.edu
Dr. Janine Paul Dr. Esther Johnson Lab directors	Physiology/Neuroscience	jpaul@sgu.edu ejohnso3@sgu.edu

TEACHING FACULTY

SGU BIOL441, Grenada	Department	Email Address
Dr Duncan Kirkby	Physiology/Neuroscience	DKirkby@sgu.edu
Dr. Noah Leton	Physiology/Neuroscience	nleton@sgu.edu
Dr Vijaya Chellapilla	Physiology/Neuroscience	chrhao@sgu.edu
Dr Nilo Alvarez Toledo	Physiology/Neuroscience	Nalvare1@sgu.edu
Dr Juanette McKenzie	Physiology/Neuroscience	JMckenzi@sgu.edu
Dr Earlan Charles	Physiology/Neuroscience	echrle3@sgu.edu
Dr. Janine Paul	Physiology/Neuroscience	jpaul@sgu.edu
Dr. Esther Johnson	Physiology/Neuroscience	ejohnso3@sgu.edu

SUPPORT STAFF

SGU BIOL441, Grenada	Department	Email Address
Ms. Shennel Boca Executive Secretary	Physiology and Neuroscience	sboca@sgu.edu

COURSE MATERIAL

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All course material, whether in print or online, is protected by copyright. Course materials, in part or in their entirety, may not be copied, distributed or published in any form, printed, electronic or otherwise.

As an exception, students enrolled in the course are permitted to make electronic or print copies of all downloadable files for personal and classroom use only, provided that no alterations to the documents are made and that the copyright statement is maintained in all copies.

Lecture recordings are explicitly excluded from download and creating copies of these recordings by students and other users is strictly prohibited.

COURSE WEBSITE

The BIOL441 Human Physiology course offers a website through Sakai, our learning management system. This site is used for COMMUNICATION (including Announcements, Calendar and Discussion Forums), COURSE TOOLS (including Syllabus, Resources, Tests & Quizzes, Gradebook, a web link to the student resources of the Required Books, and a link to Lecture Recordings).

To login, go to <https://mycourses.sgu.edu/portal>, type in your user ID and password.

ELECTRONIC RESOURCES

Distribution of course material will be in electronic format, with a table of contents hyperlinked to the different sections within each document. Links to external websites are included, where appropriate. In accordance with Committee for Technology based Teaching and Learning (CTTL) recommendation, students are provided with unlocked PDF files, which may be annotated for personal use. This format facilitates active learning, as it allows highlighting and annotations, using a variety of platforms, operating systems

and annotation software. Copyright restrictions regarding the duplication of materials apply (see copyright statement above).

Resources folder contains multiple subfolders in which you will be able to find the course material provided.

Please note: electronic versions of course materials posted on the course website are the most up-to-date versions. Due to reproduction deadlines, distributed paper versions may vary somewhat from posted electronic versions. It is the responsibility of each student to check on the latest available electronic versions for possible updates and corrections.

REQUIRED TEXTBOOKS

Medical Physiology: Principles for Clinical Medicine; 5th ed, Rhoades and Bell

This textbook is also available for free online through the SGU library via this link: <https://meded-wwhealthlibrary-com.periodicals.sgu.edu/book.aspx?bookid=2188>

Optional additional resources for self-study:

List of all online medical textbooks available through SGU library:

<https://mycampus.sgu.edu/group/library/ebooks>

Free online access for SGU students (requires log-in with SGU credentials)

AccessMedicine

<https://accessmedicine.mhmedical.com.periodicals.sgu.edu/>

Searchable medical textbooks. Highly recommended with search function to look up concepts relevant to pre-medical student education.

REQUIRED ELECTRONIC EQUIPMENT

Laptop

Students need a personal laptop as specified by SGU Examination Services. It is the responsibility of each student to ensure his/her laptop is in full working condition, as

specified by Examination Services, and keep it up to date and equipped for the SGU wireless network at all times.

Clicker /App

An Audience Response System (Clicker/APP) is used to assess student participation and performance in instructional sessions. Its use reflects the participation and performance of the student to whom the device is registered. Students are recommended to respond to questions using the web browser (tpoll.com) or via the turning Point app for smart phones to fully participate in live sessions.

Throughout the term, a student may use only a single Clicker/APP , which has been registered to their name. Clicker/APP devices are not to be shared with any other student, temporarily re-registered under a different name, or used on behalf of any other student. Each student is responsible for the registration of their individual Clicker/APP and is further responsible to keep it in full working condition at all times during the course. Any problems with the device should be reported to the Course Director on the day the problem occurs and adequate steps should be taken to resolve the issue, e.g. battery replacement, or repair or replacement of device. Students are required to bring their Clicker/APP to every scheduled teaching session.

COMPONENTS OF THE COURSE

LECTURES

Lectures are an essential component of the BIOL441 course. They are designed to provide students with an outline of what they are expected to know, to prioritize important aspects of course content, to clarify complex material, and to make relevant connections to clinical contexts. Most lecturers will focus more on difficult concepts than on self-explanatory facts.

Many of the course sessions are delivered through on-line recordings of full-length lectures. The delivery of asynchronous on-line lectures allows students greater flexibility for when and where the lectures are viewed and promotes self-directed

learning. Content from all lectures, synchronous or asynchronous are testable material. The posted lecture slides may not be comprehensive and do not replace the need to read textbooks. It is an important learning exercise for students to read textbooks and glean important information related to course objectives. Lecture slides are not intended to be used in isolation, but rather as a complement to the lecturer's narrative.

Each lecture contains formative assessment, **usually in the format of at least 2 Clicker questions of which the first and last questions must be answered.**

Students must submit a minimum number of these formative lecture assessments in order to pass the course. The minimum number of submissions for this course component is listed in the tables below.

DIRECTED LEARNING ACTIVITIES

Pre-requisite knowledge or simple content may be presented online as short videos. These videos will be available via the course management site and can be viewed at any time. The videos are designed to focus on key topics that are pre-requisite knowledge or where there is benefit to reviewing core knowledge before its application in lecture.

DLAs are exercises developed by Faculty to support, complement, and/or supplement the learning of the class and are available through the course management site in different formats, including PDF handouts, Panopto videos, Research papers etc. These DLAs are mandatory and the content of the DLA's is testable material. The sequence in which the exercises should be completed is important as it coordinates with the lecture(s) they are supporting. The DLAs and the timeline will be available via the course management site and can be viewed at any time.

SMALL GROUP (SG) PRACTICAL SESSIONS

Small Group Practical Sessions (SGs) are an essential component of the BIOL441 course, organized with approximately 8-10 students per group and supervised by Clinical Tutors who facilitate and encourage critical thinking through group discussions. A clinical case will also be provided during every session to allow students the opportunity to apply the basic physiological concepts to real life situations. The key of these sessions is student-student interaction and the success of these sessions largely depends on all members of the team coming prepared and

actively participating in the discussion.

Details on the organization of the Small group discussion sessions are provided in the small group discussion manual, which will be distributed via Sakai the week before the small group session is scheduled to begin.

Each small group practical session contains a formative assessment. These can take the form of Clicker/APP questions, a worksheet or an online prerequisite or post SG assessment. Students must submit a minimum number of these formative practical assessments in order to pass the course. The minimum number of submissions for this course component is listed in the tables below.

Small Group Requirements:

- **white board markers, Clicker/APP**
- Textbooks and small group handout/supplement for the topic being covered
- Dress Code (see below)

SG Regulations:

- Students must wear their SGU Photo ID at all times and place it in such a way that it is clearly visible by faculty.
- The laboratory learning resources such as plastic models, and surface pros are expensive and limited in number. Students should take special care when they handle them.
- Food and drinks are not permitted in the lab at any time (that includes chewing gum and drinking water).
- Taking pictures is not allowed in the lab at any time.
- Use of cell phones is restricted. If at all necessary in the lab, students should use the vibration mode and not answer the phone while in the lab.

DRESS CODE (SMALL GROUP)

Students are expected to dress in a professional manner when attending lectures and small group/ Lab sessions.

Professional Dress includes:

Clean, odor-free, and not overly worn or revealing clothing.

Unprofessional Dress includes:

Tank tops, see through clothing, short shorts, sunglasses, flip flops, heels, etc.

INTERACTIVE MULTIPLE CHOICE QUESTION (IMCQ) SESSIONS OR PROBLEM-BASED LEARNING SESSION

Interactive multiple choice question (IMCQ) sessions aim to enhance a student's test-taking skills and increase their exposure to USMLE style multiple choice single best answer questions, which is the standard style for all electronic examinations at St George's University School of Medicine. These sessions will improve students' approach to answering MCQs and emphasize the link between questions and course objectives. As a learning tool, IMCQs provide students with valuable formative feedback enabling them to modify their approach to learning course content, and to identify weaknesses that require remediation.

There will be several non-graded IMCQ and problem-based learning sessions over the semester,

It is essential to actively participate in the discussions with classmates to train yourself in the critical clinical thinking and reasoning process in order to be able to master IMCQs from these sessions. In order to adequately prepare for the critical thinking and clinical reasoning processes required in IMCQ sessions, students are encouraged to actively participate in discussions with classmates during their study sessions. Questions used during IMCQ sessions will be posted on the course Sakai after delivery.

DIRECTED SELF STUDY / GROUP STUDY

Apart from studying independently, students are encouraged to form their own study groups of 3 to 5 active members. These groups should meet about once a week to discuss difficult course concepts. Active participation in these small group discussions is essential to students' successful understanding, application, and mastery of course material.

ONLINE ACTIVITIES: WEEKLY SAKAI PRACTICE QUIZZES AND EXAMSOFTQUIZZES

Practice quizzes will be provided every week, each comprised of 20 questions delivered via SAKAI within a 30-minute time window. Students earn 1 point for each of the practice quizzes. A minimum number of correct answers is NOT required. Students will earn the point for uploading a completed quiz irrespective of the number of correct answers. Detailed feedback for each question will be provided at the closing time of each quiz. ESoft Quizzes are announced on Sakai each week.

Scoring of E-Soft Quiz: Students must complete the quiz and upload the results **before** the specified deadline to earn the 2 points associated with each quiz (2 points x 4 quizzes = 8 possible points). Accuracy is not considered.

COURSE AND INSTRUCTOR CRITIQUE

Students are expected to attend all classes and other related academic activities as defined for each course by the course director. One such academic activity is participation in the St. George's University (SGU) Course and Instructor Critique Program.

Student Participation in the Evaluation Process is Mandatory

When requested, students enrolled in a course are expected to complete all required faculty and course evaluations. Failure to complete all required course and instructor critiques will mean that students did not fulfill all course requirements. The critiques coordinator will notify students when evaluation periods have begun and send periodic reminders to ensure that critiques are submitted within the allotted time frame.

The Importance of Evaluation

Evaluation is a necessary component of any course. Just as students anticipate a fair and accurate evaluation of their performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves to meet the needs and expectations of students.

Feedback

At the beginning of each term, course directors address the class and summarize the results of the course and instructor critiques from the previous term. In this summary, course directors will report areas that students rated highly and areas that received the lowest ratings. For areas receiving low ratings, the course director details what changes were made to address students' concerns, thus ensuring that course evaluation influences course design and delivery.

LAB EVALUATION

At the end of every SG session for pre-midterm and post-midterm, students are given the opportunity to evaluate the SG experience. The evaluation will be on Sakai and should be completed before the end of the specified deadline. Students will assess the session based on the criteria outlined in the Sakai evaluation form.

COURSE ASSESSMENTS

Course assessments may be summative (counting towards points in the gradebook), formative (giving valuable feedback to students to optimize their learning strategies), or both.

Summative assessments include written (electronic) examinations, and the assessment of professionalism.

Formative assessments are essential components of each scheduled course session. A minimum number of submissions of these formative assessments is required in order to pass the course.

ASSESSMENT POINTS

Course assessments may be summative (counting towards points in the gradebook), formative (giving valuable feedback to students to optimize their learning strategies but do not contribute to the gradebook), or both.

Summative Assessments

Include electronic examinations (ExamSoft), lab examinations and SG/LA assessments. These contribute points to your course grade.

Summative Assessment Points

The total assessment points that can be earned in the course are listed in the table below:

The total assessment points that can be earned in the course are listed in the table below:

Assessment	Points	Points Breakdown	%
Exam 1	100	100 MCQ x 1 point	41.67
Exam 2	100	100 MCQ x 1 point	41.67
Small Group Practical Assessments	20	10 SG x 2 point	8.33
iMCQ sessions	4	2 points per iMCQ	1.67
Weekly Online Quizzes	10	1 quiz x 1 point	4.167
Professionalism	6		2.5
Total:	240		100

Each exam consists of 100 questions from the lecture block preceding the exam date.

These questions can be in first order, second or third order questions. Each exam will have a small percentage of clinical vignettes (approximately 5-10 questions). Exam 2 will contain questions on cumulative material from the contents covered in previous exams. This is geared towards preparation for PMSCE exams and long-term memory.

Each question is allotted an approximate time of 82 seconds.

Electronic examinations are in multiple-choice-single-best-answer format, following the guidelines of the National Board of Medical Examiners (NBME). The NBME provides the United States Medical Licensing Examination (USMLE), a three-step examination for medical licensure in the United States, which is sponsored by the Federation of State Medical Boards (FSMB) and NBME.

The final grade will include scores obtained from the 2 exams and points assigned to lab activities/ quizzes/ IMCQ sessions and discussion forums.

Grades are awarded based on percentage scores (see scoring and grading policy below). The following table is intended to help you to determine your letter grade based on raw points earned in the BIOL441 course:

Raw Points	Percentage %	Letter Grade
240	100	A+
216-238	90-99	A
204 - 213	85-89	B+
192- 202	80-84	B
180-189	75-79	C+
168-177	70-74	C
156- 165	65-69	D
<156	<65	F

In order to pass the course the student will need 156 points or above, and has to meet all participation criteria (group participation and submission of minimum number of formative assessments). **A student fails the course with less than 156 points.**

Disclaimer: To protect against any errors in the calculation of the equivalent raw points above, grades will be determined purely based on the officially published grading scale (in percentage scores) in the Sakai gradebook listed in the scoring and grading policy (see below).

WRITTEN (ELECTRONIC) EXAMINATIONS

Written electronic examinations are in multiple-choice-single-best-answer format, following the guidelines of the National Board of Medical Examiners (NBME). The NBME provides the United States Medical Licensing Examination (USMLE), a three-step examination for medical licensure in the United States, which is sponsored by the Federation of State Medical Boards (FSMB) and NBME.

Question Format

The time allocation per question is 82 seconds. The vast majority of the questions are in Clinical Vignette format, with some in Experimental Vignette format. There may be a few questions in Non-Vignette (first order) format. Most questions, however, are higher order questions.

The figure below shows a model developed by Rex Heer (2012), a revision of Bloom's taxonomy, and illustrates knowledge and cognitive process dimension of learning objectives related to questions. A "first order question", which is in essence factual recall through memorization, represents the lowest level of learning.

"Higher order questions", in contrast, require integration, differentiation and judgment, to list just a few of the learning attributes.



Model created by: Rex Heer, Iowa State University, Center for Excellence in Learning and Teaching, Updated January, 2012.

Retrieved from: <http://www.celt.iastate.edu/wp-content/uploads/2015/09/RevisedBloomsHandout-1.pdf> (2016-08-12)

Axis of Truth

According to NBME guidelines, answer choices are located at any point along an “axis of truth” (see illustration on the right from: <http://download.usmle.org>, retrieved 2014- 08-19). The axis ranges from “unequivocally true” to “absolutely false”.

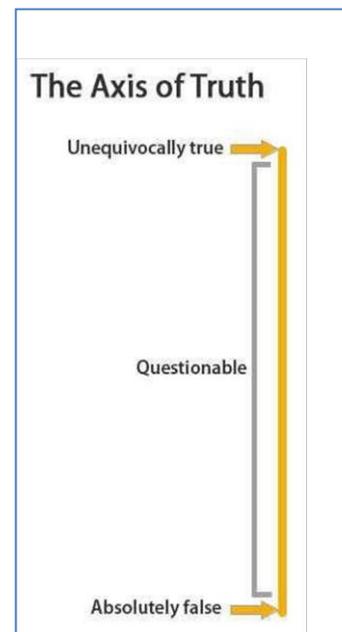
The vast majority of questions has 5 choices, while some may have only 4 choices, others may have 10 choices (A to J) or more, according to the most recent 2016 sample presented on the USMLE website (http://usmle.org/pdfs/step-2016samples_step1.pdf, retrieved 2016-05- 17).

Choices are rarely “unequivocally true” or “absolutely false”. It is a common misunderstanding that a multiple choice question has to have one “unequivocally true” answer choice and a series of “absolutely false” answer choices.

In reality, most answer choices are located between these two extremes and the good student will be able to determine the one best answer that will earn the point.

Experimental Questions

Testing of new, previously untested/ experimental questions is an essential component of question bank development. Such questions may not be used untested to count towards students’ grades. For each written examination, approximately 10 untested questions will be included to determine their validity and reliability. These questions will not count toward a student’s grade. The term “experimental question” does not imply a different format or difficulty



level. These are standard questions. If these questions generate reliable statistics during the testing process, they will become part of the regular question bank for use in future exams as regular exam items. This process ensures that all assessments are set with well performing exam items only.

For quality control across all courses offered by St George's University School of Medicine, the Curriculum Committee regularly monitors and reviews all test items used in School of Medicine examinations.

SMALL GROUP PRACTICAL

In each session there will be an assessment given in the form of a online activity, Clicker/APP questions or a worksheet which will be worth 2 points. Students will be given points based on the accuracy of their answers. **(50% earns your 2 points)**. Make up sessions will not be offered.

PROFESSIONALISM ASSESSMENT

Professional behavior, communication and interpersonal skills will be assessed based on the assessment form shown in Section C. This form has been adapted to the needs of a basic science course from the American Association of Medical Colleges (AAMC) Medical Student Performance Evaluation (MSPE) advisory committee. It addresses timeliness, compliance, accountability, appearance, interactions, teamwork, motivation and respect.

The total number of professionalism points is listed in the table above. It is anticipated that students will demonstrate professional behavior at all times, and therefore, earn their full professionalism points, Should there be documented evidence of students failure to demonstrate expected professional behavior as assessed in the BIOL441 course, he/she may lose one or more professionalism points and/or the incident can be reported to the Dean of Students and may result in disciplinary action. The number of points deducted is at the discretion of the Course Director, which is not negotiable.

FORMATIVE ASSESSMENTS

Formative assessments are an essential component of the BIOL441 course. In addition to the formative character, some of the assessments may in addition have a small summative character (for points contributing to the final course grade). These assessments are delivered during every scheduled course session (see course components above). A student needs to submit/attend a minimum number of 80% of these assessments in each category in order to pass the course.

According to the Student Manual, participation in all scheduled activities is mandatory. Students are not entitled to miss any scheduled activities. The reduced participation requirement provides for any unavoidable circumstances that may occur.

Failure to meet the minimum requirement of formative assessment submissions may result in an F grade for the BIOL441 course irrespective of the reason for non-submission. Medical and non-medical excuses are only accepted for summative assessments. Makeup sessions are not offered for the formative assessment components of the course.

STUDENT SUPPORT DISCUSSION FORUM

The major platform for all content related questions is the Discussion Forum on the course website. Students are encouraged to post their questions on the Discussion Forum and to respond to questions posted by others.

Students are expected to make use of the Discussion Forum rather than emailing questions to individual faculty. Many students have the same questions; therefore, posting on the Discussion Forum allows all students benefit from the posted questions and their timely responses. Course faculty will regularly monitor the Discussion Forum and participate, whenever appropriate.

When posting questions on the discussion forum, you must tag each post with the lecture number, the small group, IMCQ or Exam Soft quiz that the question is referring to. This will ensure that the relevant faculty members will be available to answer your questions.

Students should only use professional language. Discussions should remain relevant to course material. Use of derogatory remarks or inappropriate language is not allowed. All posts must also be accompanied with the full name of the person posting it. Failure to do so will result in deletion of the post. Anonymous messages are considered unprofessional behavior and a violation of the student honor code.

ROUND TABLE MEETINGS

The Course Director may organize Round Table Meetings (either online, or with physical presence), where faculty members representing the different disciplines contributing to the course will be present. Students can come in and ask individual questions, which will be answered by the team of faculty.

OFFICE HOURS

Office hours will be provided by the teaching faculty as open office hours (walk in) or by appointment. The available hours (open or appointments) for the different faculty members will be posted weekly on Sakai. **All appointment requests should be emailed to physiology441@squ.edu . Students should not contact individual faculty members to make appointments (unless otherwise specified).**

SECTION B: SGU SOM POLICIES AND PROCEDURES

Policies applicable to the course are published in the following documents:

1. Course Syllabus
2. [Student Manual](#) (General and School of Medicine sections, including the Honor Code)

If there is a conflict between policies and procedures detailed in Section B of this syllabus and those detailed in the Student Manual, then the policies and procedures in the current Student Manual supersede.

For rules and regulations governing the Charter Foundation Program and the Preclinical (Premed) Program, please refer to the Student Manual:

<https://www.sgu.edu/studentmanual/school-of-medicine/charter-foundation-program/>

<https://www.sgu.edu/studentmanual/school-of-medicine/doctor-of-medicine-preclinical-program/>

Violation of any policy or procedure outlined in this document is reported as an examination irregularity to the Dean of Students and to the Course Director. In the case of NBME examinations, irregularity reports are also sent to the National Board of Medical Examiners, with potential consequences outlined on their website. The Dean of Students decides on subsequent disciplinary action and the Course Director determines the implications for examination scores and course grades.

Policies applicable to the course are published in the following documents:

STUDENT RESPONSIBILITIES

- Attend classes regularly and on time
- Bring fully functional personal Clicker/APP to all scheduled sessions
- Respond to all Clicker/APP questions presented in class and participate in all formative assessments /assignments
- Check SGU email daily; this is the only official email account that is used to relay messages between University and students.

- Check course website daily for announcements and updates
- Submit online assessments and assignments on time
- Check posted results of assessments on time
- Actively participate in all class activities
- Report illness through the medical self-report system on [myCampus Secure Login \(Carenage\)](#) of the SGU website
- Voice commendations and concerns through class representatives
- Ask for help early if struggling
- Participate in course and instructor evaluations

ATTENDANCE POLICIES AND PROCEDURES

As stated in the Student Manual: “Students are expected to attend all classes and clinical rotations for which they have registered. A particular course may define additional policies regarding specific attendance or participation.”

RULES OF CLICKER/APP USAGE

It is the responsibility of each student to bring their own (and only their own) individually assigned Clicker/APP for the Premedical Sciences- SOM program to every class session and respond to questions presented during that session. Students are responsible for ensuring that their Clicker/APP is registered before the start of classes and fully functional; they should request assistance in testing Clicker/APP functionality in case there is any doubt.

Factors that are essential for full Clicker/APP functionality include a fully charged battery and setting the correct channel for transmission of the signal. A student is responsible to check full functionality of their individual Clicker/APP regularly by monitoring the green LED response after successful response transmission.

Students actively or passively (either for their own, or for someone else’s benefit) involved in fraudulent attempts to manipulate examination or participation / submission records maybe dismissed for violation of the honor code.

A student caught in possession of multiple Clicker/APP s inside a class venue may be dismissed for violation of the honor code.

MEDICAL EXCUSES

A student who is medically unfit to take an examination is advised to follow the procedures outlined in the student manual to obtain a valid medical excuse.

POLICIES AND PROCEDURES FOR SMALL GROUP, LECTURE, PRACTICAL AND IMCQ ASSESSMENTS

These assessments may be graded using an audience response system (Clicker/APP). Students are required to take their personal responders (Clicker/APP s) to each of the SG sessions, lectures and IMCQ sessions. The proper functionality of the personal responder is the student's responsibility.

Students must attend only the sessions to which they are assigned. Participation and professional contributions are required and will be assessed.

SCORING AND GRADING POLICIES AND PROCEDURES

Grades are awarded objectively based on the percentage of points earned in the course relative to the maximum number of points available in the course. The total number of points available and a breakdown of how these points can be earned are listed in Section A (Course Specific Information) of this document. No additional points are available. Grades are awarded based on the official grading scale of St George's University School of Medicine (see below).

QUESTION REVIEW

The Course Director will arrange a meeting of faculty teaching in the course (or course module), to review the summary statistics of the examination, statistical item analysis and student review feedback.

Please note: Only student question review requests that have been raised during the examination in the appropriate comment box of ExamSoft will be considered. Question review requests reaching the Course Director or individual faculty members after the examination will not be considered.

If a test item (question) is deleted for any reason, all responses to the question will be accepted as correct.

The final decisions about question flaws and the appropriate adjustments rest with the Course Director.

GRADING

Before the start of the grading process, all decisions about individual questions, which may have been made during the question review process, will be considered as final.

At the end of term, the overall performance of a student will be determined as a percentage score, made available to the Registrar's Office and entered into the official St George's University data base.

This percentage score is the basis for the determination of individual grades to appear in a student's transcript, based on the current grading policy of St George's University School of Medicine.

Completion of the minimum required formative assessments is a requirement for satisfactory completion of a course. Students who do not meet the requirement may receive an overall "F" grade for the course.

In case the assessment score of a student is 69.5% or above, but the student does not meet the formative assessment criteria to pass the course, a failing score of 69.4% will replace the student's original percentage score. This constitutes the highest possible failing score, which will be reported to the Registrar's Office for recording of the student's grade.

GRADING SCALE

The current grading scale of St George's University School of Medicine is based on percentage scores as follows:

Letter grade	From	To
A+	100	100
A	90	99
B+	85	89
B	80	84
C+	75	79
C	70	74
D	65	69
F	<65	

PUBLICATION OF RESULTS

Results of all assessments will be published in the online course management system. The results of all electronic examinations will usually be posted at the end of an examination period.

After the results of an examination, an online assessment, or a grade have been published, it is each student's responsibility to check the published results.

REPORTING OF ERRORS

Errors in published scores for electronic examinations (and other course assessments manually entered into the gradebook) must be reported to the Course Director for validation within 48 hours of their publication.

For Online Assessments, where results are accessible upon submission, errors must be reported before the deadline.

Technical errors reported after the deadline will not be considered.

CHANGE OF PUBLISHED RESULTS

A published result can only be changed if the published score or grade is incorrect and errors have been reported in time.

Competency E1 (E1.1, 1.2, 1.3, 1.6, 1.7)

Apply quantitative reasoning and appropriate mathematics to describe or explain phenomena in the natural world.

1.1. Demonstrate quantitative numeracy and facility with the language of mathematics.

Examples:

- Express and analyze natural phenomena in quantitative terms that include an understanding of the natural prevalence of logarithmic/ exponential relationships (e.g., rates of change, pH).
- Explain dimensional differences using numerical relationships, such as ratios and proportions.
- Use dimensional analysis and unit conversions to compare results expressed in different systems of units.
- Utilize the Internet to find relevant information, synthesize it, and make inferences from the data gathered.

1.2. Interpret data sets and communicate those interpretations using visual and other appropriate tools.

Examples:

- Create and interpret appropriate graphical representations of data, such as a frequency histogram, from discrete data.
- Identify functional relationships from visually represented data, such as a direct or inverse relationship between two variables.
- Use spatial reasoning to interpret multidimensional numerical and visual data (e.g., protein structure or geographic information).

1.3. Make statistical inferences from data sets. Examples:

- Describe and infer relationships between variables using visual or analytical tools (e.g., scatter plots, linear regression, network diagrams, maps).

1.6. Apply algorithmic approaches and principles of logic (including the distinction between cause/effect and association) to problem solving.

Examples:

- Utilize tools and methods for making decisions that take into account multiple factors and their uncertainties (i.e., a decision tree).
- Distinguish correlation from causality.

1.7. Quantify and interpret changes in dynamical systems.

Examples:

- Explain homeostasis in terms of positive or negative feedback.

Competency E3 (E3.1, 3.2, 3.4, 3.6)

Demonstrate knowledge of basic physical principles and their applications to the understanding of living systems.

3.1. Demonstrate understanding of mechanics as applied to human and diagnostic systems.

Examples:

- Apply knowledge of mechanics to movement in biological systems at various scales, from the molecular to the organismal.

3.2. Demonstrate knowledge of the principles of electricity and magnetism (e.g., charge, current flow, resistance, capacitance, electrical potential, and magnetic fields).

Examples:

- Apply concepts of resistance and capacitance to the electrical properties of myelinated and unmyelinated axons and how those properties affect the travel speed of action potentials in those types of neurons.

3.4. Demonstrate knowledge of the principles of thermodynamics and fluid motion.

Examples:

- Explain the thermodynamics of simple diffusion through biological membranes.
- Explain how viscosity affects blood flow.

3.6. Demonstrate knowledge of principles of systems behavior, including input–output relationships and positive and negative feedback.

Examples:

- Use input–output relationships to understand the efficiency of converting food energy into muscular motion.
- Apply negative feedback principles to explain how temperature is regulated in buildings and in the human body.
- Apply positive feedback principles to explain action potentials.

Competency E4 (E4.3, 4.4, 4.5)

Demonstrate knowledge of basic principles of chemistry and some of their applications to the understanding of living systems.

4.3. Demonstrate knowledge of molecular interactions.

Examples:

- Distinguish between ionic interactions, van der Waals interactions, hydrogen bonding, and hydrophobic interactions.
- Apply this knowledge to understanding of the structures of macromolecules, liquids (especially water), and solids.
- Apply this knowledge to understanding of biological macromolecules and biological assemblies, such as membranes.

4.4. Demonstrate knowledge of thermodynamic criteria for spontaneity of physical processes and chemical reactions and the relationship of thermodynamics to chemical equilibrium.

Examples:

- Apply the concepts of acid-base equilibria.
- Apply the concepts of equilibrium electrochemistry and of concentration cells.
- Apply understanding of these concepts to biochemical processes, such as metabolism, photosynthesis, and electrochemical processes in cell membranes.

4.5. Demonstrate knowledge of principles of chemical reactivity to explain chemical kinetics and derive possible reaction mechanisms.

Examples:

- Explain how measurements of reaction rates lead to the determination of rate laws.
- Explain the temperature dependence of reaction rates.
- Apply understanding of these concepts to predict biochemical processes, such as enzyme catalysis.

Competency E5 (E5.1, 5.2)

Demonstrate knowledge of how biomolecules contribute to the structure and function of cells.

5.1. Demonstrate knowledge of the structure, biosynthesis, and degradation of biological macromolecules.

Examples:

- Identify the major macromolecules (proteins, nucleic acids, carbohydrates, and lipids) and explain the way in which their structure affects their properties.
- Explain how hydrophobicity and hydrophilicity drive molecular association and contribute to both specificity and affinity.
- Explain how protein, nucleic acid, carbohydrate, and lipid degradation and recycling are essential to normal cell function.

5.2. Demonstrate knowledge of the principles of chemical thermodynamics and kinetics that drive biological processes in the context of space (i.e., compartmentation) and time: enzyme-catalyzed reactions and metabolic pathways, regulation, integration, and the chemical logic of sequential reaction steps.

Examples:

- Distinguish different types of enzyme control, such as feedback, competitive and noncompetitive inhibition, and allosteric effects.
- Explain how membrane gradients and electron transport act to generate and store energy.
- Explain how glucose transport across epithelia depends on the sodium concentration gradient.
- Describe the role of the Na-K-ATPase in the maintenance of the resting membrane potential of cells.
- Explain how energy stored in ATP is transduced by motor proteins to produce movement.

Competency E6 (E6.1-6.4)

Apply understanding of principles of how molecular and cell assemblies, organs, and organisms develop structure and carry out function.

6.1. Employ knowledge of the general components of prokaryotic and eukaryotic cells, such as molecular, microscopic, macroscopic, and three-dimensional structure, to explain how different components contribute to cellular and organismal function.

Examples:

- Describe how the internal organization of a cell changes as it begins cell division.
- Describe how proteins are targeted to different compartments in eukaryotic cells.
- Describe the role of the cytoskeleton in amoeboid movement of cells.

6.2. Demonstrate knowledge of how cell–cell junctions and the extracellular matrix interact to form tissues with specialized function.

Examples:

- Describe the structure and explain how gap junctions and other forms of cell–cell interfaces facilitate communication between cells.
- Explain how myelinated axons accelerate the conduction of action potentials as compared to unmyelinated axons.
- Explain how variations in cell–cell junctions influence the permeability of epithelial tissues to solutes and water.

6.3. Demonstrate knowledge of the mechanisms governing cell division and development of embryos.

Examples:

- Explain why and how only maternal mitochondria are passed to the embryo.
- Explain how abnormal processes in meiosis gives rise to genetic anomalies, such as trisomy 21, Turner's (X) syndrome, and Klinefelter's (XXY) syndrome.
- Describe the chemical signaling that controls normal cell division and apoptosis.
- Explain the hormonal basis for the menstrual cycle in humans.

6.4. Demonstrate knowledge of the principles of biomechanics and explain structural and functional properties of tissues and organisms.

Examples:

- Apply understanding of force and torque to explain why small differences in muscle insertion make a significant difference in the speed and force created by limb movement.
- Explain the role of motor proteins in contraction and cellular movement.
- Explain the physics of how blood movement and pressure are affected by vessel diameter.

Competency E7 (E7.1-7.3)

Explain how organisms sense and control their internal environment and how they respond to external change.

7.1. Explain maintenance of homeostasis in living organisms by using principles of mass transport, heat transfer, energy balance, and feedback and control systems.

Examples:

- Explain the role of CO₂ in the maintenance of pH homeostasis.
- Explain the mechanisms by which cells maintain cell volume in the face of changing extracellular osmolarity.
- Explain an example of how pumps move substrates and fluids within the body, or between the internal and external environments.
- Explain how the competing needs to exchange gases and retain water are met in terrestrial organisms.

7.2. Explain physical and chemical mechanisms used for transduction and information processing in the sensing and integration of internal and environmental signals.

Examples:

- Explain how altering ion channel permeability contributes to electrical signaling within and

between cells.

- Describe how chemoreceptors sense and transduce various chemical signals from the internal and external environments.
- Explain how organisms sense and adapt to a change in environmental temperature.
- Explain the role of both the nervous system and endocrine system in maintaining blood glucose levels.

7.3. Explain how living organisms use internal and external defense and avoidance mechanisms to protect themselves from threats, spanning the spectrum from behavioral to structural and immunologic responses.

Examples:

- Describe how the immune system differentiates between self and non-self.
- Explain why the digestive tract has the largest amount of immune tissue.
- Explain how adrenal hormones affect behavior in fight-or-flight situations.

FOUR YEAR OUTCOME OBJECTIVES

The BIOL441 Human Physiology Course specifically addresses a number of four-year outcome objectives within the three categories of knowledge (1a, 1b,1c), clinical skills (2a, 2c, 2e, 2f, 2g, 2i, 2l) and professional attitudes (3b, 3c, 3d, 3e, 3g, 3h, 3i) of the Doctor of Medicine Program of St George's University School of Medicine:

1. Medical Knowledge

- a. Apply the multidisciplinary body of basic sciences to clinical analysis and problem solving using:
 - i. The knowledge of normal structure, function, physiology and metabolism at the levels of the whole body, organ systems, cells, organelles and specific biomolecules including embryology, growth and development
 - ii. The principles of normal homeostasis including molecular and cellular mechanisms.
 - iii. The etiology, pathogenesis, structural and molecular alterations as they relate to the signs, symptoms, laboratory results, imaging investigations and causes of

common and important diseases conditions.

- b. Incorporate the impact of factors including psychological, cultural, environmental, genetic, nutritional, social, economic, religious and developmental on health and disease of patients as well as their impact on families and caregivers.
- c. Utilize the important pharmacological and non-pharmacological therapies available for the prevention and treatment of disease based on cellular and molecular mechanisms of action and clinical effects. Identify and explain factors that govern therapeutic interventions such as clinical and legal risks, benefits, cost assessments, age and gender.
- d. Apply the theories and principles that govern ethical decision making in the management of patients.
- e. Evaluate and apply clinical and translational research to the care of patient populations.

2. Clinical Skills

- a. Communicate effectively with patients, their families and members of the health care team.
- b. Obtain a comprehensive and/or focused medical history on patients of all categories.
- c. Perform physical and mental status examinations on patients of all categories appropriate to the patient's condition.
- d. Document pertinent patient health information in a concise, complete and responsible way.
- e. Select appropriate investigations and interpret the results for common and important diseases and conditions.
- f. Recognize and communicate common and important abnormal clinical findings.
- g. Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
- h. Apply effective problem solving strategies to patient care.
- i. Perform routine and basic medical procedures.

- j. Provide patient education with respect to health problems and maintenance.
- k. Identify individuals at risk for disease and select appropriate preventive measures.
- l. Recognize life threatening emergencies and initiate appropriate primary intervention.
- m. Outline the management plan for patients under the following categories of care: preventive, acute, chronic, emergency, end of life, continuing and rehabilitative.
- n. Continually reevaluate management plans based on the progress of the patient's condition and appraisal of current scientific evidence and medical information

3. Professional Attitude

- a. Establish rapport and exhibit compassion for patients and families and respect their privacy, dignity and confidentiality.
- b. Demonstrate honesty, respect and integrity in interacting with patients and their families, colleagues, faculty and other members of the health care team.
- c. Be responsible in tasks dealing with patient care, faculty and colleagues including healthcare documentation.
- d. Demonstrate sensitivity to issues related to culture, race, age, gender, religion, sexual orientation and disability in the delivery of health care.
- e. Demonstrate a commitment to high professional and ethical standards.
- f. React appropriately to difficult situations involving conflicts, nonadherence and ethical dilemmas.
- g. Demonstrate a commitment to independent and lifelong learning including evaluating research in healthcare.
- h. Demonstrate the willingness to be an effective team member and team leader in the delivery of health care.
- i. Recognize one's own limitations in knowledge, skills and attitudes and the need for asking for additional consultation.

BIOL 441 PHYSIOLOGY COURSE OBJECTIVES

Through consistent and proactive participation during the activities and exercises presented in this course, a student should be able to:

- Understand and describe the relationship between the structure and function of the molecules, cells, tissues, organs, and systems underlying normal human

physiology.

- Understand and describe the vital molecules, structures, and conditions necessary for normal physiological function and preservation of homeostasis.
- Understand and describe how vital molecules and energy are stored, transported and utilized in physiological processes.
- Understand and describe the mechanisms through which information is sensed, generated, transferred, and targeted to allow the human body to adapt changing conditions, regulate physiological function, and maintain homeostasis.
- Understand the principles of physiology underlying select clinical and diagnostic tests, interpret their results, and apply this information to analyze normal and abnormal physiologic states.
- Analyze and discuss the physiological elements, conditions, and mechanisms and that distinguish abnormal from normal (i.e. diseased vs healthy) physiological conditions, and apply this analysis to principles of medicine.
- Develop communication techniques to critically evaluate and discuss medical cases effectively.
- Cultivate essential interpersonal skills during collaborative activities.
- Demonstrate professional behavior appropriate for the setting, activity, and audience.

Block 1 – Cell and Tissue Physiology (CTP): Homeostasis, excitable tissues, Muscle & Intro to Nervous system

H O M E O S T A S I S

1. Explain the principles of positive feedback and feed forward control of hormone secretion.
2. Given the body weight and percent body fat,
 - a. total body water
 - b. lean body mass
 - c. extracellular fluid volume
 - d. intracellular fluid volume
 - e. blood volume
 - f. plasma volume.

Identify normal extracellular fluid (plasma) osmolarity and concentrations of Na⁺, K⁺, Cl⁻

, HCO₃⁻, proteins, creatinine, and urea, and contrast these values with those for intracellular fluids.

3. Using the volumes/compartments identified in Homeostasis Objective 2, contrast the movement between intracellular and extracellular compartments caused by increases or decreases in extracellular fluid osmolality

EXCITABLE TISSUES

1. Describe the ionic basis of each of the following local graded potentials: excitatory post synaptic potential (EPSP), inhibitory post synaptic potential (IPSP), end plate potential (EPP) and a receptor (generator) potential.
2. Contrast the generation and conduction of graded potentials (EPSP and IPSP) with those of action potentials.
3. On a diagram of a motor neuron, indicate where you would most likely find IPSP, EPSP, action potential trigger point, and release of neurotransmitter.
4. On a diagram of a sensory neuron, indicate where you would most likely find receptor potential or generator potential, action potential trigger point, and release of neurotransmitter.
5. Describe the cutaneous and proprioceptive mechanoreceptors and their function: Pacinian corpuscles, Meissner's corpuscles, Ruffini endings, Merkel cell, A-delta and C free nerve endings, Golgi tendon organ, muscle spindle.
6. Distinguish between an endplate potential and an action potential in skeletal muscle.

MUSCLE PHYSIOLOGY

FUNCTIONAL MUSCLE HISTOLOGY

1. Draw and label skeletal muscle at all anatomical levels, from the whole muscle to the molecular components of the sarcomere. At the sarcomere level, include at least two different stages of myofilament overlap.

NEUROMUSCULAR JUNCTION

2. Draw the structure of the neuromuscular junction.
3. List in sequence the steps involved in neuromuscular transmission in skeletal muscle and point out the location of each step on a diagram of the neuromuscular junction
4. Distinguish between an endplate potential and an action potential in skeletal muscle.

EXCITATION-CONTRACTION COUPLING

5. List the steps in excitation-contraction coupling in skeletal muscle, and describe the roles of the sarcolemma, transverse tubules, sarcoplasmic reticulum, thin filaments, and calcium ions

SLIDING FILAMENT AND CROSS BRIDGE

6. Diagram the chemical and mechanical steps in the cross-bridge cycle, and explain how the cross bridge cycle results in shortening of the muscle.
7. Explain the relationship of preload, afterload and total load in the time course of an isotonic contraction
8. Distinguish between an isometric and isotonic contraction.
9. Identify the multiple sources, localization, and roles of calcium in muscle contraction and relaxation.
10. Draw the length versus force diagram for muscle and label the three lines that represent passive (resting), active, and total force. Describe the molecular origin of these forces in the three muscle types.
11. Compare the structure and regulation of the contractile units found in smooth vs striated muscle.
12. Explain why smooth muscles can develop and maintain force with a much lower rate of ATP hydrolysis than skeletal muscle

NEUROPHYSIOLOGY

NEUROANATOMY

1. Describe the organization of the nervous system
2. List the general functions of the nervous system
3. Identify the different cell types in the nervous system
4. Define, and identify on a diagram of a motor neuron, the following regions: dendrite axon, axon hillock, soma, and an axodendritic synapse.
5. Describe the production, flow and absorption of CSF (CEREBROSPINAL FLUID)
6. Identify the spinal cord as part of CNS
7. Identify grey and white matter; dorsal, ventral and intermediate regions of the spinal cord and define the major function of each

BLOCK 2 – Systems 1: Neurophysiology, Autonomic Nervous, & Cardiovascular Systems

NEUROPHYSIOLOGY, FUNCTIONAL NEUROPHYSIOLOGY

SOMATOSENSORY SYSTEM

1. Describe the cutaneous and proprioceptive mechanoreceptors and their function: Pacinian corpuscles, Meissner's corpuscles, Ruffini endings, Merkel cell, A-delta and C free nerve endings, Golgi tendon organ, muscle spindle.
2. Define the terms receptor sensitivity, receptor specificity, and receptive field. Correlate these definitions with the types of receptors transmitting information to the Dorsal Column-Medial Lemniscus system and to the spino-thalamic system, respectively.
3. List the receptors and afferent nerve fibers that subserve vibration, discriminative touch, joint position sense, thermoreception and nociception.
4. Define rapidly and slowly adapting sensory reception and correlate these with the types of sensory receptors serving the Dorsal Column-Medial Lemniscus system and the spinothalamic system, respectively.
5. Describe the steps in sensory transduction and action potential generation at a mechanoreceptor and at a nociceptor.
6. Trace the borders of the dermatomes.
7. Define the concept of a somatosensory receptive field and explain how dermatomes and receptive fields are related.
8. Explain how the peripheral innervation density is related to receptive field size.
9. Define two-point discrimination and tell how it is related to peripheral innervation density and receptive field size.
10. Discuss what is meant by the Fine Touch System and be able to trace its connections to the cerebral cortex.
11. Discuss what is meant by the Pain/Temperature/Coarse Touch System and be able to trace its connections to the cerebral cortex.
12. Describe how afferent surround inhibition improves spatial two-point discrimination.

MOTOR

13. Identify motor cortex and motor association cortex and their roles in movement

and speech

14. Identify cerebellum as part of CNS and its roles in regulating movement
15. Describe the functions of the medial and lateral motor pathways. Describe their origins and terminations within the spinal cord.
16. Describe the effects of lesions in the medial and lateral descending motor pathway
17. Describe the various types of reflexes
18. Describe some disorders affecting movement.

AUTONOMIC NERVOUS SYSTEM

19. Define the sympathetic and parasympathetic systems.
20. Differentiate the components of the sympathetic and parasympathetic systems.
21. Contrast the functions of the sympathetic and parasympathetic systems.
22. Compare and contrast terms and concepts related to the sympathetic and parasympathetic systems, including: the central location of cell body of origin, number of synapses between CNS and effector organs, degree of myelination, and general effects on target tissues.
23. Describe the synaptic characteristics, receptors, and neurotransmitters for the parasympathetic and sympathetic division of the ANS.
24. Describe the ANS signaling mechanism and the effects of sympathetic and parasympathetic stimulation of lungs, heart, arteries, and veins; gastrointestinal function; renal function; and sexual function.
25. Understand the pharmacological action of Sympathetic and Parasympathetic drugs, giving examples of each.

AUDITORY AND VESTIBULAR SYSTEM

26. Describe the function of the outer, middle and inner ear, listing in order the mechanical structures over which sound energy is transmitted to auditory receptors
27. Explain how hair cells convert sound energy into an action potential
28. Explain the frequency analysis performed by the basilar membrane with reference to its physical structure
29. Explain how deformations of the basilar membrane relate to the intensity of sound perceived are converted to action potentials in auditory nerve fibers

30. Describe what is bone conduction
31. Explain how vestibular apparatus provides information about movement and position
32. Describe the pathways from ears to auditory cortex and cerebellum

VISION

33. Describe the refraction of light as it passes through the eye to the retina
34. Describe the pathways for vision
35. Describe the process of accommodation, contrasting the refraction of light by the lens in near and far vision
36. Describe the refractive deficits that account for myopia, hyperopia and their correction by glasses or contact lenses
37. Explain the differing light sensitivities of the fovea and optic disc
38. List and compare the functional properties of scotopic and photopic vision
39. Contrast the transduction process for rods and cones
40. Describe the functional properties of ON- and OFF- bipolar cells
41. Describe the functional properties of antagonistic center-surround receptive fields of retinal ganglion cells
42. Predict the visual field deficits resulting from the following lesions in the visual pathway:
43. optic nerve, optic chiasm, optic tract, LGN (in thalamus), primary visual cortex

CARDIOVASCULAR PHYSIOLOGY

CARDIAC CYCLE

1. Draw, in correct temporal relationship, the pressure, volume, heart sound, and ECG changes in the cardiac cycle. Identify the intervals of isovolumetric contraction, rapid ejection, reduced ejection, isovolumetric relaxation, rapid ventricle filling, reduced ventricular filling and atrial contraction.
2. Know the various phases of ventricular systole and ventricular diastole. Contrast the relationship between pressure and flow into and out of the left and right ventricles during each phase of the cardiac cycle.
3. Know the factors that contribute to the formation of turbulent flow.
4. Describe the timing and causes of the four heart sounds.

5. Define arterial systolic, diastolic, mean arterial, and pulse pressure and identify them on a Wigger's diagram

CARDIAC ELECTROPHYSIOLOGY

6. Sketch a typical action potential in a ventricular muscle and a pacemaker cell. Describe how ionic currents contribute to the four phases of the cardiac action potential. Use this information to explain differences in shapes of the action potentials of different cardiac cells.
7. Explain what accounts for the long duration of the cardiac action potential and the resultant long refractory period. What is the advantage of the long plateau of the cardiac action potential and the long refractory period?
8. Beginning in the SA node, diagram the normal sequence of cardiac activation (depolarization).
9. Explain why the AV node is the only normal electrical pathway between the atria and the ventricles, and explain the functional significance of the slow conduction through the AV node. Describe factors that influence conduction velocity through the AV node.
10. Name the parts of a typical bipolar (Lead II) ECG tracing and explain the relationship between each of the waves, intervals, and segments in relation to the electrical state of the heart.

VENTRICULAR FUNCTION

11. State the steps in excitation-contraction coupling in cardiac muscle. Outline the sequence of events that occurs between the initiation of an action potential in a cardiac muscle cell and the resulting contraction and then relaxation of that cell. Provide specific details about the special role of calcium in the control of contraction and relaxation of cardiac muscle.
12. Describe the role of Starling's Law of the Heart in keeping the output of the left and right ventricles equal.
13. Draw a ventricular pressure-volume loop and on it label the phases and events of the cardiac cycle (ECG, valve movement).
14. Define ejection fraction and be able to calculate it from end diastolic volume, end systolic volume, and/or stroke volume. Predict the change in ejection fraction that would result from a change in a) preload, b) afterload, and c)

contractility.

15. Construct a vascular function curve. Predict how changes in total peripheral resistance, blood volume, and venous compliance influence this curve.

PRESSURE REGULATION

16. List the anatomical components of the baroreceptor reflex.
17. Explain the sequence of events in the baroreflex that occur after an acute increase or decrease in arterial blood pressure.
18. Explain the sequence of events mediated by cardiopulmonary (volume) receptors that occur after an acute increase or decrease in arterial blood pressure and in central venous pressure.
19. Contrast the relative contribution of neural and renal mechanisms in blood pressure and blood volume regulation.
20. Describe the release, cardiovascular target organs, and mechanisms of cardiovascular effects for angiotensin, atrial natriuretic factor, bradykinin, and nitric oxide.

MICROCIRCULATION AND HEMODYNAMICS

21. Be able to differentiate between flow and velocity in terms of units and concept.
22. Understand the relationship between pressure, flow, and resistance in the vasculature and be able to calculate for one variable if the other two are known. Apply this relationship to the arteries, arterioles, capillaries, venules, and veins. Explain how blood flow to any organ is altered by changes in resistance to that organ.
23. Define autoregulation of blood flow. Distinguish between short-term and long-term autoregulatory responses and the mechanisms responsible for each.
24. Identify the role of PO₂, PCO₂, pH, adenosine, and K⁺ in the metabolic control of blood flow to specific tissues.
25. Understand the relationship between flow, velocity, and cross-sectional area and the influence vascular compliance has on these variables.
26. Differentiate the following terms: osmotic pressure, oncotic pressure, and hydrostatic pressure, as they pertain to movement across the endothelium of the capillaries.

27. Define the Starling equation and discuss how each component influences fluid movement across the capillary wall

SPECIAL CIRCULATIONS

28. Discuss the interaction of a) intrinsic (local), b) neural, and c) humoral control mechanisms and contrast their relative dominance in the CNS, coronary, splanchnic, renal, cutaneous, and skeletal muscle vascular beds.
29. Describe the phasic flow of blood to the ventricular myocardium through an entire cardiac cycle.
30. Contrast the local and neural control of the splanchnic circulation.
31. Contrast the local and neural control of cerebral blood flow. Discuss the relative importance of O₂, CO₂, and pH in regulating cerebral blood flow.

Block 3 – Systems 2: Pulmonary & Gastrointestinal

RESPIRATORY PHYSIOLOGY

THE BREATHING CYCLE

1. Diagram how pleural pressure, alveolar pressure, airflow, and lung volume change during a normal quiet breathing cycle or a deep breathing cycle with forced expiration. Identify on the figure the onset of inspiration, cessation of inspiration, and cessation of expiration. Describe how differences in pressure between the atmosphere and alveoli cause air to move in and out of the lungs.
2. Identify the forces that generate the negative intrapleural pressure when the lung is at functional residual capacity, and predict the direction that the lung and chest wall will move if air is introduced into the pleural cavity (pneumothorax).

MECHANICS

3. Draw a normal pulmonary pressure-volume (compliance) curve (starting from residual volume to total lung capacity and back to residual volume), labeling the inflation and deflation limbs. Explain the cause and significance of the hysteresis in the curves.
4. Define compliance and identify two common clinical conditions in which lung compliance is higher or lower than normal. Explain how compliance changes

- observed with an obstructive or restrictive disease alter the work of breathing.
5. Identify the forces that generate the negative intrapleural pressure when the lung is at functional residual capacity, and predict the direction that the lung and chest wall will move if air is introduced into the pleural cavity (pneumothorax).

MEASUREMENT OF LUNG VOLUMES AND CAPACITIES

6. Define the factors that determine total lung capacity, functional residual capacity, and residual volume. Describe the mechanisms responsible for the changes in those volumes that occur in patients with emphysema and pulmonary fibrosis.
7. Describe the effects of airway diameter and turbulent flow on airway resistance.
8. Draw a spirogram resulting from a maximal expiratory effort. Label the forced vital capacity (FVC), timed forced expiratory volumes (FEVs), and the maximal expiratory flow rate between 25-75% of FVC (FEF_{25-75%}). Describe the mechanical forces that contribute to these pulmonary function indexes (also RV, FRC and TLC) and how they change with obstructive or restrictive disease.
9. Differentiate between the two broad categories of restrictive and obstructive lung disease, including the spirometric abnormalities associated with each category.

VENTILATION AND GAS DIFFUSION

10. Define partial pressure and fractional concentration as they apply to gases in air. List the normal fractional concentrations and sea level partial pressures for O₂, CO₂ and N₂.
11. List the normal airway, alveolar, arterial, and mixed venous PO₂ and PCO₂ values. List the normal arterial and mixed venous values for O₂ saturation, [HCO₃⁻], and pH.
12. Describe in quantitative terms the effect of ventilation on PCO₂ according to the alveolar ventilation equation.
13. Name the factors that affect diffusive transport of a gas between alveolar gas and pulmonary capillary blood.

OXYGEN AND CARBON DIOXIDE TRANSPORT

14. Define oxygen partial pressure (tension), oxygen content, and percent hemoglobin saturation as they pertain to blood.
15. Draw an oxyhemoglobin dissociation curve (hemoglobin oxygen equilibrium curve) showing the relationships between oxygen partial pressure, hemoglobin saturation, and blood oxygen content. On the same axes, draw the relationship between PO₂ and dissolved plasma O₂ content (Henry's Law). Compare the relative amounts of O₂ carried bound to hemoglobin with that carried in the dissolved form.
16. Describe how the shape of the oxyhemoglobin dissociation curve influences the uptake and delivery of oxygen.
17. Define P₅₀.
18. Show how the oxyhemoglobin dissociation curve is affected by changes in blood temperature, pH, PCO₂, and 2,3-DPG, and describe a situation where such changes have important physiological consequences.

CONTROL OF BREATHING

19. Identify the regions in the central nervous system that play important roles in the generation and control of cyclic breathing.
20. List the anatomical locations of chemoreceptors sensitive to changes in arterial PO₂, PCO₂, and pH that participate in the control of ventilation. Identify the relative importance of each in sensing alterations in blood gases.
21. Describe how changes in arterial PO₂ and PCO₂ alter alveolar ventilation, including the synergistic effects when PO₂ and PCO₂ both change.
22. Describe the mechanisms for the shift in alveolar ventilation that occur immediately upon ascent to high altitude, after remaining at altitude for two weeks, and immediately upon return to sea level.

ENDOCRINE PHYSIOLOGY

GENERAL CONCEPTS

1. Define the endocrine system
2. Compare hormones to neurotransmitters and neurohormones
3. Compare and contrast the three major chemical classes of hormones in terms

of their a) storage and release; b) transport in blood; and c) action at the cell

4. Discuss how hormone release is controlled
5. Describe hormonal breakdown
6. Describe endocrine disorders

PITUITARY

7. List the hormones released from the Posterior Pituitary
8. Discuss the control of hormonal release
9. Discuss the actions of the hormones in the body
10. List the hormones released from the Anterior Pituitary
11. Discuss the control of hormonal release
12. Discuss the actions of the hormones in the body
13. Describe the hypothalamic pituitary axis

ADRENAL GLAND

14. List the regions of the adrenal gland and the hormones released
15. Discuss the stimulus for release, cellular actions, body actions and regulation of aldosterone, cortisol and the sex hormones
16. Describe the renin-angiotensin system

THYROID HORMONE

17. List the two thyroid hormones
18. Discuss thyroid hormone synthesis
19. Discuss the stimulus for release, cellular actions, body actions and regulation of the thyroid hormones

PARATHYROID HORMONE

20. Discuss the function of calcium in the body
21. Describe how PTH and Vitamin D3 maintain calcium homeostasis
22. Discuss the stimulus for release, cellular actions, body actions and regulation of PTH and Vitamin D3

ENDOCRINE PANCREAS

23. Discuss the importance of the anatomy of the pancreas to hormone release
24. Discuss the control of hormonal release

25. Discuss the cellular actions of the hormones
26. Discuss the actions of the hormones in the body
27. Describe the relationship between insulin and glucagon and glucose homeostasis
28. Describe the pathophysiology of Type 1 Diabetes mellitus

MALE REPRODUCTIVE

29. Describe spermatogenesis
30. Hormonal control of male reproductive physiology
31. Functions of testosterone
32. The role of the accessory organs

FEMALE REPRODUCTIVE

33. Changes in the follicle over the ovarian cycle
34. Changes in hormone levels throughout the ovarian cycle
35. The uterine cycle
36. Puberty and menopause
37. Birth

PARTURITION AND LACTATION

38. Understand how labor is initiated
39. Discuss the hormonal control of childbirth
40. Discuss the hormonal control of lactation

Block 4 – Systems 3: Renal & Endocrine Systems

RENAL PHYSIOLOGY

THE KIDNEY: STRUCTURE, FUNCTION, & REGULATION

1. List the basic functions of the kidneys
2. List and identify the structures of the nephron and associated vasculature
3. Discuss filtration and the factors that affect filtration
4. Discuss reabsorption, secretion and the different mechanisms involved in both processes giving examples
5. Discuss the tubuloglomerular feedback mechanism and the renin-angiotensin

II- aldosterone system

6. Discuss the various hormones involved in concentrating and diluting urine

ACID-BASE STATUS AND PH REGULATION

7. Define acidosis and alkalosis
8. Discuss how chemical buffers regulate pH
9. Discuss how the pulmonary system regulates pH
10. Discuss how the kidney regulates pH
11. Be able to diagnose an acid-base imbalance
12. Describe processes that lead to acid base disturbances and list common cause
13. Define base excess (or deficit) and anion gap
14. Explain what is meant by primary and secondary acid base disturbances using the concept of “compensation”
15. From blood values, identify simple and mixed metabolic and respiratory acid base disturbances

GASTROENTEROLOGY PHYSIOLOGY

FUNCTIONS AND REGULATION OF GI TRACT

1. Identify the sources and typical amounts of fluid and nutrients entering and leaving the gastrointestinal tract daily
2. For major classes of nutrients (carbohydrates, proteins, fats), differentiate the processes of ingestion, digestion, absorption, secretion, and excretion; include the location in the GI tract where each process occurs.
3. Describe the functions of splanchnic blood flow in sustaining intestinal viability and as a source/sink for material transported across the GI tract epithelium.
4. Know how afferent and efferent extrinsic nerves (sympathetic and parasympathetic) interact with the enteric nervous system and regulate the functions of the GI track.
5. Understand the neural circuitry driving major GI reflexes and the neural pathways and neurotransmitters that accomplish reflex control of GI functions.
6. Compare and contrast the regulation of gut function by nerves, hormones, and paracrine regulators.

SALIVARY GLANDS

7. Describe the volume and composition of salivary fluid coming from major salivary glands
8. Describe the physiological function of the components of saliva.
9. State the components of the saliva important in oral hygiene

ESOPHAGUS

10. Describe the afferent neuro-muscular pathways activated to initiate swallowing, the motor pathways and general targets for innervation that accomplish the swallowing reflex, and major nuclei of in the brain stem that integrate these afferent inputs.
11. Understand the differences in the neural and muscular composition and function in the upper versus lower esophagus. Explicitly consider the upper and lower esophageal sphincters.
12. Describe the dynamic pressure changes that occur in the regions of the esophagus after initiation of the swallowing reflex and how these pressure changes would propel a bolus of food from the mouth to the stomach.

STOMACH

13. Describe the storage, digestion, and motility roles of the stomach
14. Identify the proteins secreted into the gastric lumen by chief cells, parietal cells, and mucous cells. Contrast the functions and regulation of these secretions.
15. Identify the gastric cell types secreting gastrin, somatostatin, histamine, and gastrin releasing peptide. Describe the stimuli that promote and inhibit release of these peptides, and their cellular targets.
16. Describe the role of HCl in the gastric digestion of carbohydrates and protein, and how pepsinogen is activated
17. List the stomach cell types and secreted substances that contribute to regulation of gastric acid secretion via paracrine, hormonal, and neuroendocrine pathways. Understand the integrated feedback regulation of acid secretion via these pathways during a meal
18. List the mechanisms contributing to gastric mucosal defense and how they can be compromised by drugs or pathogens.

HEPATOBIILIARY

19. Describe the mechanisms whereby the gall bladder concentrates bile, and the endocrine mechanism stimulating gall bladder contraction and the secretion of bile through the sphincter of Oddi into the small intestine.
20. Describe the amphipathic structure of bile salts, and describe how this property assists the solubilization and digestion of fats.

SMALL INTESTINE

21. Describe the sequential digestion of ingested proteins by gastric pepsin, pancreatic enzymes, and enzymes at the intestinal apical membrane. Make sure to include the role of duodenal enteropeptidase.
22. Compare the membrane transport mechanisms responsible for uptake of sugars, aminoacids and di-peptides by intestinal epithelial cells.
23. Describe the mechanisms and molecules mediating the solubilization and digestion of lipids in the small intestine.
24. Describe the location and the mechanisms that mediate the intestinal trans-epithelial movement of water, the major electrolytes, iron and calcium.

LARGE INTESTINE

25. Describe the mechanisms, localization and regulation of colonic sodium absorption.
26. Describe the mechanisms mediating colonic bicarbonate and potassium transport.
27. Describe the role of dietary fiber in promoting colonic motility.

GASTROINTESTINAL MOTILITY AND ENTERIC NERVOUS SYSTEM

28. Describe the characteristics of the spontaneous and stimulated electrical activity of GI smooth muscles
(electrical slow waves, action potentials, and contraction).
29. Describe the anatomical locations and role of interstitial cells of Cajal as slow wave pacemakers and mediators of inputs from the enteric nervous system.
30. Describe major motor patterns in the GI tract and their functions during fasting (migrating motor complex or MMC) and during digestion
31. Describe the role of colonic motility in facilitating the recovery of water and electrolytes.

32. Describe the function of colonic motility, in mediating formation of haustra and haustral shuttling, mass movements through the transverse and distal colon, and defecation.
33. Describe the sequence of events in the colon and anal sphincters occurring during reflexive defecation, differentiating those movements under voluntary control and those under autonomic control.

SECTION C: APENDICES

	Inappropriate -j Too Little	O	D	D	Inappropriate -j Too Much
Trustworthiness	Displays inappropriate position/status; misuses resources; talks inappropriately; plugs unneeded services, obscures, lies D	D	Displays honestly, forthrightly, and truthfully	D	Displays insensitively and tactlessness D
Adherence to Ethical Principles	Engages in unethical behavior (e.g., accepts inappropriate gifts, violates professional boundaries, stows, engages in fraudulent behavior) overlooks inappropriate behavior in colleagues D	D	Models ethical behavior; reports inappropriate behavior in colleagues	D	Appears self-righteous; displays intolerance; always finds fault; appears overly critical D
RESPONSIBILITY/RELIABILITY/ACCOUNTABILITY					
Punctuality	Is late; misses deadlines D	D	Is punctual; meets deadlines D	D	Emphasizes timeliness at the expense of thoroughness D
Compliance	Ignores policies, procedures, rules, and regulations; misses required sessions D	D	Follows policies, procedures, rules, and regulations; attends required sessions D	D	Displays inflexibility; rigidly adheres to the letter of the rules D
Accountability	Avoids responsibility and work D	D	Appropriately assumes responsibility; asks for help when necessary D	D	Assumes too much responsibility; displays inability/ unwillingness to delegate D
Feedback	Makes excuses; displaces blame; resists feedback; appeals reflexively D	D	Admits errors; seeks and incorporates feedback D	D	Appears afraid to act for fear of making errors; blames others inappropriately; requires constant reassurance and feedback D
IMAGE/PERSONALITY (e.g., "Vile guests, literally, and administrative staff")					
Appearance	Displays poor hygiene; wears dirty/sloppy clothes D	D	Maintains neat personal appearance D	D	Appears to dress to attract attention to himself, although neat, clean, and appropriate for the occasion D
Interactions	Appears insecure and unable to act independently D	D	Respects authority and other professionals; appears appropriately confident in presence of others D	D	Appears arrogant, overconfident, and demurring D

Advisory Committee : Professionalism Assessment Form

Teamwork	Does not participate		Works well with others		Appears dominant, authoritarian, uncooperative, and overbearing
ALTRUISM					
Concern for others	Concern for self appears to supercede concern for others; appears unwilling to extend		Shows appropriate concern for others; goes "the extra mile" without thought of reward		Appears selfless to point of taking needless risks; over- extends self to own detriment
EMPATHY					
Compassion	Exhibits little compassion for others; at times, appears cold, indifferent		Can put self "in others' shoes," but still maintains objectivity		Appears emotionally over-responsive and unduly empathic, resulting in an inability to be objective
COMMITMENT TO EXCELLENCE					
Goal-setting	Appears aimless and educationally adrift		Sets and achieves realistic goals		Sets unachievable goals
Motivation	Sets low standards of achievement; appears complacent		Seeks additional knowledge and skills; strives for		Appears overly competitive and perfectionistic
RESPECT FOR PATIENTS					
Relationships	Appears disrespectful and insensitive to patients (beliefs, opinions, gender, race, culture,		Demonstrates respect for, and sensitivity to, patients (beliefs, opinions, gender, race, culture, religion, sexual		Enables inappropriate/ unhealthy patient behavior
Confidentiality	Disregards patient confidentiality		Demonstrates and maintains sensitivity to confidential patient information		Inappropriately upholds patients* or others' right to confidentiality, putting them

* Requires written comment

For additional information, contact Robert F. Sabalis, PhD, rsabalis@aamc.org

REFERENCES

1. Medical School Objectives Project. *Report I Learning Objectives for Medical Student Education- Guidelines for Medical Schools*. Association of American Medical Colleges (AAMC), 1998.
2. Association of American Medical Colleges–Howard Hughes Medical Institute (AAMC–HHMI) *Scientific foundations for future physicians*. (AAMC–HHMI report). Association of American Medical Colleges (AAMC), 2009.
3. Robert G. Carroll, L. Gabriel Navar, & Mordecai P. Blaustein. *Medical Student Learning Objectives*. American Physiological Society (APS) and Association of Chairs of Departments of Physiology, 2012



St. George's University
School of Arts & Sciences
Department of Biology, Ecology & Conservation

BIOL460: Human Anatomy (4cr.)

SUMMER 2021

Course Syllabus

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1. Course Description

BIOL460: Human Anatomy

BIOL460 is a four (4) credit course that presents a systematic approach to the study of the human body. The course has been developed to provide students from the biology, pre-allied health, pre-medicine and foundation to medicine (FTM) programs with a basic foundation in the anatomical sciences. The anatomical sciences include human gross anatomy, developmental anatomy, histology and cell biology. BIOL460 begins with an introduction to anatomical terminology and imaging, cellular organization and the basic tissues. The course continues with an extensive study of the eleven major systems of the human body: Integumentary System, Skeletal System, Muscular System, Cardiovascular System, Lymphatic System, Respiratory System, Digestive System, Urinary System, Male & Female Reproductive Systems, Nervous System and Endocrine System. The course is composed of lecture, laboratory, small group and online activities.

2. Faculty and Staff

Course Director: Ramesh Rao, MD Instructor Department of Anatomical Sciences rrao@sgu.edu	Associate Course Director: Elio Plevneshi, MD Instructor Department of Anatomical Sciences Eplevne1@sgu.edu	Office Staff: Ms. Maisha Archibald Department of Anatomical Sciences MYArchibald@sgu.edu
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Faculty: All teaching faculty are from the Department of Anatomical Sciences.

Ahmed Mahgoub amahgoub@sgu.edu	Alena Wade, MD awade@sgu.edu	Deon Forrester, MD dforrester@sgu.edu
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Georbrina Hargrove, MD ghargrov@sgu.edu	Feimatta Sowa, MD fsowa@sgu.edu	Elio Plevneshi, MD eplevne1@sgu.edu

3. Contact Information

Ms. Maisha Archibald

- Appointments
 - All appointments must be made **in person** at the Anatomy office
- Notification of lecture or lab absence
- My Courses and Sonic Foundry issues
- Gradebook2 questions

Dr. Ramesh Rao, Dr. Elio Plevneshi

- Administrative issues
- Notification of exam or quiz absence
- Course performance
- Questions about lecture or laboratory material
- Emergency problems related to the course

Faculty Appointments:

All faculty appointments are to be made in person with Ms. Maisha Archibald at the main anatomy office between the hours of 08:30-12:00 and 13:00 – 15:30 only. The department is open from 08:00 – 17:00 during week days and is closed over the weekend and on public holidays.

Content Related Questions:

The most efficient way to address all content-related questions is through the use of the general forums on MyCourses. It is an ideal place to interact with peers and it is moderated by faculty.

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Lecture recordings are explicitly excluded from download and creating copies of these recordings by students and other users is strictly prohibited.

Course Website

The BIOL460 Human Anatomy course offers a website through Sakai, our learning management system. This site is used for COMMUNICATION (including Announcements, Calendar and Discussion Forums), COURSE TOOLS (including Syllabus, Resources, Tests & Quizzes, Gradebook, a web link to the student resources of the Required Books, and a link to Lecture Recordings).

To login, go to [myCampus Secure Login \(Carenage\)](#), type in your user ID and password, and click on

My Courses.

The MyCourses site contains multiple folders:

Announcements

Contains notifications and information about events relative to the course and should be checked on a regular basis.

Syllabus

This folder contains the course syllabus and learning objectives.

Resources

This folder contains the theoretical and administrative information about BIOL460

- **Course Information:** Schedules, protocols, exam and other course information.
- **Lab:** Lab image banks and structure lists.
- **Lecture:** Course lectures in .pdf format.
- **Mediasite Catalog:** Lectures recorded and uploaded in Sonic Foundry.
- **Online Resource:** Supplemental material for histology tissue preparation and embryology lectures.

Test and Quizzes

This folder contains the online assignments and virtual quizzes.

Gradebook2:

This folder contains all course assessment scores.

Required Electronic equipment

Laptop

Students need a personal laptop as specified by SGU Examination Services. It is the responsibility of each student to ensure his/her laptop is in full working condition, as specified by Examination Services, and keep it up to date and equipped for the SGU wireless network at all times.

Announcements:

Announcements regarding course activities such as exam/lab venues, program and schedules changes will be posted on MyCourses.

Your SGU e-mail account is the only official e-mail address the Department and the University will use to communicate with you.

4. Attendance Policy

Attendance records will be maintained for this class. Students will be asked to sign the attendance sheet at the beginning of lab and buzz group activities. Signing the attendance sheet on behalf of another student is considered a breach of the SGU honor code. Your attendance and active participation in lab is required as an essential component for your success. Students who arrive late for the lab or buzz will be marked absent on the attendance register. Students are advised to manage their time wisely to ensure that they are on time for lecture, lab, and buzz activities.

(St. George's University Student Manual) "Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be taken at every academic activity, attendance may be taken randomly. Student's absence may adversely affect their academic status as specified in the grading policy. If an absence from individual classes, examinations, activities or from the University itself is anticipated or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. A particular course may define additional policies regarding specific attendance or participation."

5. Course Materials

Textbook:

- **Principles of Human Anatomy, 15th Edition**

Tortora & Nielsen

ISBN-10:1118344995

ISBN-13: 978-1118344996

Lecture Handouts:

- Pre-midterm and post-midterm lecture handouts.

Supplemental Resources on MyCourses:

- Embryology resources
- Laboratory image banks and structure lists

The text, lecture handouts, and supplemental resources serve as the primary resources for all required content and knowledge in this course. Successful students are those who become familiar with the textbook and: read and review required sections in order to have an adequate working knowledge of the course material.

6. Components of the Course

I. Lectures

A large part of the course content will be presented in the form of lectures. Each lecture will last 50 minutes and will take place at the **Bourne Lecture Hall (BLH)** unless otherwise indicated. The lecture schedule is available on MyCourses. The objective of the lectures is to give an outline of what students are expected to know and explain difficult concepts. Previewing the text, lecture notes and objectives is highly recommended. **The lecture handouts in no way replace the need to read the textbook.** It is an important learning exercise for the students to learn to read textbooks and glean out important information. Lectures are recorded and uploaded to the Mediasite.

Lecture Etiquette:

The use of cell phones is not allowed. No pictures or recordings are allowed at any time in the lectures or labs.

II. Anatomy Laboratory Sessions

Laboratory sessions are held at the Anatomy dissection lab. The laboratory activities parallel and reinforce lecture content through the use of models, prosected cadaveric material and histological slides. Students will attend two (2) hours of lab per week. Faculty will facilitate and be available for questions and guidance.

Lab open hours

Students will have access to lab open hours as per the official lab schedule these hours are for self study and no faculty will be present in open hour sessions, lab rules must be fully observed during open hour sessions.

Anatomy Lab Rules:

- **Attire: Full set of scrubs (top & bottom) and closed toe shoes.**
- You are required to bring your own gloves to lab activities.
- It is a privilege to have access to donated cadaveric materials.
 - All materials in the lab should be handled with care and respect at all times.
- Food and drink are not permitted in the lab at any time.
 - Includes chewing gum and drinking water.
- No pictures or recordings are allowed at any time in the lecture or lab.

- Use of cell phones is not allowed.
 - Students should use vibration mode and not answer the phone while in the lab.

Lab Material:

The laboratory learning resources such as plastic models, plastinated specimens and cadaveric materials are expensive and often fragile. Students should take special care while handling them. Images representative of what will be reviewed during the lab sessions can be found in the lab folder on MyCourses. Students are encouraged to review them with the aid of the text book before each lab activity. Content from the labs will be evaluated in the virtual component of all exams. Students enrolled in BIOL460 will be assigned to predetermined lab groups which can be found on MyCourses. As a general rule, students may only attend the lab session to which they have been assigned. However if there is a conflict with the lab on a particular day, please inform the course director in advance.

Lab Quiz:

A five question lab practical quiz will take place at the end of every Anatomy laboratory session based on the specimen reviewed in the lab. Each quiz will contribute a maximum of **(3.8)** points towards the final grade (0.76 points per question) for a total of **thirty eight (38)** points for the lab component of the course. **There will be no remediation for missed lab quizzes.**

III. Buzz Group Sessions

Buzz (small) group sessions run simultaneously with the Anatomy laboratory activities. Buzz group sessions involve discussions of anatomically relevant details of clinical cases among the small groups of students. Students will be assigned to predetermined buzz groups.

Buzz Quiz:

A five question Turning Point clicker quiz will take place at the end of every buzz group session. Each quiz will contribute a maximum of **(0.66)** points towards the final grade (0.132 points per

question) for a total of **six(6)** points for the buzz component of the course. **There will be no remediation for missed buzz quizzes.**

IV. Virtual Quiz

There are **four (4)** virtual quizzes posted on MyCourses. Each virtual quiz contains ten (10) multiple choice questions based on the laboratory component of the course and includes images from the laboratory image bank. All students are strongly advised to take the virtual quiz soon after they are made available and not to wait until the closing date. **Virtual quizzes will not be re-opened once closed.** Each virtual quiz counts for **one (1)** point (0.1 points per question) towards the final grade with a total of **four (4)** points for the virtual lab component of the course.

Instructions:

1. There is a time limit of 30 minutes to complete each quiz. The quiz will automatically submit after 30 minutes regardless of state of completion. Accesses to these quizzes are recorded.
2. After submission the score and answers are saved and can be reviewed until the closing date of the assignment.
3. Any problems encountered should be reported to the prior to the closing date of the assignment.
4. Each virtual quiz remains open for **seven (7) days**.
5. There are only **three (3)** opportunities to submit.
6. The highest score is recorded and it is each student's responsibility to ensure that his/her score is recorded by checking the feedback and milestones.

7. Course Learning Objectives

The course learning objectives are a list of detailed objectives covering all content to be reviewed throughout the course. This list can be found in **Appendix I** on page 27 of the syllabus and the MyCourses resources folder.

Medical Excuses

A student who is medically unfit to take an examination is advised to follow the procedures outlined in the student manual to obtain a valid medical excuse.

General Rules of electronic examination

All SOM examinations will be offered in computer-based format only. There will be no paper alternatives. Students must bring a computer with the appropriate specifications to these examinations.

Examinations are governed by the Examination Policies and Procedures of St George's University and the Electronic Examination Policies and Procedures (Student Manual and below). All students are responsible for knowing and complying with the University's Code of Conduct.

According to the Student Manual, "students must be above suspicion in all testing situations. When cheating is suspected, it is not the obligation of the University to prove violation of this Code beyond a shadow of a doubt, but rather by a preponderance of the credible evidence submitted."

In case of a suspicion indicating that the integrity of an examination might have been compromised, the Course Director, in consultation with the faculty and the administration, may nullify the examination and announce a new date for a replacement examination within a period of seven working days after the original.

An examination announcement will be posted on the course website prior to each examination. It will outline the specific policies and procedures governing this examination and will indicate, when the last student will be allowed into the examination venue. After this time, no late-comers will be admitted.

Students who fail to appear in time for an examination without a validated and approved reason (medical, catastrophic event or emergency), as stipulated by the Student Manual, will receive a grade of zero ("0") for the examination.

All electronic examinations are sequestered and are not available subsequently for individual

review.

To get feedback on their strengths and weaknesses in the electronic examinations, students will receive an Examination Report, available through their Exam Soft account.

Electronic examination procedures and policies

The following examination policies and procedures have been submitted for implementation in the Student Manual and are the examination policies for the BIOL 441 course. Once published, the syllabus may simply refer to the Student Manual:

Policies and Procedures for Computer Based Examinations

The following policies and procedures supplement the general guidelines outlined in the University Examination Policies and Procedures in the SGU Student Manual. Each examinee is responsible for reviewing and adhering to these policies.

Prior to Examination Day:

1. Each student is required to have a laptop for the purpose of taking computer-based examinations at SGU. Examinees must ensure that their laptops meet the current system requirements, as published by Examination Services at the Office of Institutional Advancement (OIA).

Caveat: Some of the latest operating system updates may jeopardize the compatibility with electronic examinations. Examinees are encouraged to seek guidance from Examination Services at OIA, prior to installing updates.

2. Examinees have to ensure that they meet the requirements to access the university network at any time, and should confirm access prior to examinations.
3. Examinees must set the clock on their laptops to the correct local time and time zone (Grenada: Atlantic Standard Time AST = UTC-4; UK: Greenwich Mean Time GMT = UTC, or British Summer Time BST = UTC+1).
4. For examinations using ExamSoft, examinees are responsible for downloading and registering the required version of SofTest on their laptop prior to examination day.

5. Examinees are notified via the electronic course management system of all examination related information, including venue assignments, time sequence of examinations (including the download window, time when students enter the assigned venue, and when the doors are closed), and examination specifications (e.g. number of questions, duration etc.).
7. For examinations using Exam Soft, examinees are required to download the examination during the allocated time window (see time sequence in the examination notification above).
8. Examinees who are not eligible to take an examination (e.g. students who have withdrawn from course work, or students on an approved leave of absence) are not permitted to download the examination.
9. Examinees experiencing technical difficulties are encouraged to visit Examination Services at OIA for assistance prior to the examination day. An examinee who needs a loaner laptop must adhere to the loaner laptop policy provided by OIA.

On Examination Day:

1. Examinees are expected to assemble outside their assigned venue and ready to enter by the time stated in the examination announcement (see notification prior to examination day above).
2. Examinees must adhere to the instructions given by the Chief Proctor, or the proctors acting under his/her supervision.
3. Examinees are required to enter their assigned venue only (see notification prior to examination day above) and must take their assigned seat.
4. All examinees scheduled to sit a computer-based examination are required to bring their laptops and all necessary accessories (mouse, Ethernet cable and power cord/battery charger), for use on examination day.
5. All examinees who present themselves to sit a University examination are required to display a current SGU student identification card in order to access the examination

venue. The SGU ID is the only acceptable form of ID. Any examinee who fails to present this ID will be required to complete a Missing/Lost Identification Form and to present a government-issued photo ID in order to access the examination venue.

6. Once seated, examinees have to place their ID clearly visible on the left side of the desk they are seated at.
7. Permitted items - only the following items are allowed in the examination venue:
 - Laptop and accessories
 - SGU ID
 - Completely clear (see-through) bottle of plain water, **which has to be placed outside the examination venue for all examinations**
 - Items explicitly permitted for a specific examination (see announcement), or approved by the Dean of Students (DOS) office
8. Items that are explicitly NOT permitted inside the examination venues include:
 - Cell phones
 - iPods/iPads
 - Wrist watches
 - Calculators
 - Paging devices
 - Recording/filming devices
 - Reference materials (book, notes, papers)
 - Backpacks, briefcases, or luggage
 - Beverages or food of any type
 - Coats, outer jackets, headwear

Please note: When choosing layers for warmth, students should avoid jackets with pockets or hooded items, as they may be considered outer jackets.

9. Examinees need to be prepared to turn their pockets inside out for inspection.

10. Any prohibited items found inside the examination venue will be confiscated.
11. Examinees are assigned a seat (either by posting of individual seat assignments outside the venue, on the website, or by the Chief Proctor or an authorized representative at the venue).
12. Examination conditions are in effect at all times inside the examination venue, from the time the first examinee has entered, until the last examinee has left the examination venue. During examination conditions, no communication of any kind is permitted between examinees. Access to any files or programs other than those explicitly specified by the Chief Proctor is not permitted.
13. No examinee is permitted to enter the examination venue after the doors have been closed (in preparation of the password announcement; see notification prior to examination day above).
14. White boards, dry erase markers and erasers are provided. Examinees are not allowed to write on the white boards prior to starting the examination.
15. Examinees' eyes must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back.
16. An examinee who is experiencing problems should seek immediate attention from a proctor.
17. Some problems may be solved immediately and on site, but more severe problems may require relocation of an examinee or even termination of the examination.
18. A bathroom break is the only allowed break during an examination. Examinees may not eat, smoke or communicate with anyone other than an assigned proctor during a bathroom break. Examinees must get the attention of a proctor, get permission, sign out and back in and be accompanied by a proctor.
19. No bathroom breaks are permitted for 30 minutes after the assessment password has been provided and no examinee may leave the examination during this time period.

20. Once an examinee leaves the examination area without signing out and back in as stipulated, he/she is considered to have concluded the examination. He/she will not be allowed back into the examination venue to resume the examination.
21. To start the examination, the Chief Proctor will provide examinees with the assessment password and give the start signal "START NOW" (or "BEGIN NOW").
22. Once the start signal has been announced, examinees are required to proceed with their exam without delay.
23. Examinees are allowed to exit the examination venue when they have completed their examination and displayed the upload confirmation screen (in case of Exam Soft examinations), or whatever procedure has been specified by the Chief Proctor. During the last 10 minutes of an examination, examinees may be instructed to remain seated until dismissed.
24. It is the responsibility of every examinee who downloaded an ExamSoft examination, but is unable to take the examination on examination day, to contact Examination Services at the OIA immediately, to facilitate the process of removal of the examination from their personal computer.
25. All examination activity is logged and any log file demonstrating irregular activity, such as attempting to disable or tamper with security features, is subject to academic disciplinary action.

After the Examination:

1. A student may not attempt to reproduce a test or a test item by any means, including but not limited to reconstruction through memorization and/or dissemination of examination materials by any means.
2. Communications about specific test items, cases, and/or answers with another examinee, potential examinee, or any other person at anytime before, during, or after an examination, are strictly prohibited.

3. Every examinee is required to fully cooperate in investigations regarding any examination irregularities, whether committed or observed by themselves or others.

Violation of any policy or procedure outlined in this document is reported as an examination irregularity to the Dean of Students and to the Course Director. In the case of NBME examinations, irregularity reports are also sent to the National Board of Medical Examiners, with potential consequences outlined on their website. The Dean of Students decides on subsequent disciplinary action and the Course Director determines the implications for examination scores and course grades.

I. Course Assessments and Percentage of Grade:

Course assessments may be summative (counting towards points in the gradebook), formative (giving valuable feedback to students to optimize their learning strategies), or both.

Summative assessments include written (electronic) examinations, and the assessment of professionalism.

Formative assessments are essential component of each scheduled course session

Each exam consists of 50 questions from the block covered until the exam date. These questions can be in first order, second or third order questions. Each exam will have a small percentage of clinical vignettes (approximately 5-10 questions). Exams 2- 4 will contain questions on cumulative material from the contents covered in previous exams. This is geared towards preparation for PMSCE exams and long term memory. Each question is allotted an approximate time of 82 seconds (one hour and 15 minutes per exam).

Electronic examinations are in multiple-choice-single-best-answer format, following the guidelines of the National Board of Medical Examiners (NBME). The NBME provides the United

States Medical Licensing Examination (USMLE), a three-step examination for medical licensure in the United States, which is sponsored by the Federation of State Medical Boards (FSMB) and NBME.

The final grade will include scores obtained from the 2 exams and points assigned to lab activities, virtual quizzes, and professionalism exhibited throughout the course.

Assessment	Points	%
Mid-term	50	20
Final	50	20
Virtual Quizzes	40	5.6
Lab Quizzes	60	14.4
Total	200	100

II. Final Letter Grade:

Grades are awarded based on percentage scores (see scoring and grading policy below). The following table helps you determine your letter grade based on raw points earned in the course

Points	Letter Grade	%
223.75 - 250	A	89.5 - 100
211.25 - 223.50	B+	84.5 - 89.4
198.75 - 211	B	79.5 - 84.4
186.25 - 198.5	C+	74.5 - 79.4
173.75 - 186	C	69.5 - 74.4
161.25 - 173.5	D	64.5 - 69.4
≤ 161	F	≤ 64.4%

Final letter grades are based only on the final point total. Unfortunately, students can miss a higher letter grade by a tenth of a point. The course director cannot change that situation. Please do not send emails or seek appointments to discuss this issue. All assessment scores are confirmed for accuracy before the release of final letter grades. **There are no options for extra credit.**

III. Exam Question Review

- **All SGU examinations are sequestered and are not available for individual review.** Students having queries regarding examination questions should make an appointment to discuss them with the Course Director within seven days after the exam.
- **Question Review Procedure**

The scoring process for written examinations, include consideration of student question review requests and statistical item analysis. If a test item (question) in the exam is deleted for any reason from any examination, all responses to that question will be accepted as correct for all students.

IV. Release of Examination Grades

All assessment scores are posted on the My Courses Gradebook. Errors in posted scores must be reported to the course director for validation within a period of two weeks. **Any errors reported after the deadline will not be considered.**

V. Exam Content

Exam questions will be written based on the following resources:

- Textbook
- Lecture handouts
- Embryology supplements
- Lab
- Lab image bank

- Buzz
- Clinical case discussions

VI. Completion Exams

If a student misses a lecture exam or quiz due to a **medical excuse or excused absence**, they may be eligible for a completion or make-up exam. The format of the completion exam may differ from the previous exam or quiz format at the discretion of the course director. **Note: Completion exams may include a combination of multiple choice questions, essay questions and oral examination.**

10. IT Issues

Throughout the term, the internet, MyCourses or Sonic Foundry may occasionally be down. Please make an effort to submit online assignments ahead of the deadline and not at the last minute. For any internet, MyCourses or Sonic Foundry problems, please contact the IT department directly. The Department of Anatomical Sciences is not responsible for the maintenance of the internet, MyCourses or Sonic Foundry.

11. Student Responsibilities

- Attend lectures, laboratory and buzz sessions regularly and on time.
- Actively participate in lecture, laboratory and buzz group activities.
- Check SGU email daily.
- Submit online assessments on time.
- Post in clinical case discussion forum.
- Respond to colleagues in the general forum.
- Confirm posted assessment scores.

- Notify course director of missed lecture exam or quiz due to medical excuse or other excused absence.
- Seek assistance if experiencing difficulties for any reason.
- Read the student handbook and adhere to the SGU policies.
- Provide course feedback via completion of Course Evaluation questionnaire at end of term.
- Participate in research leading to the development of learning activities at SGU.
- Treat faculty, staff and colleagues with professionalism and respect.

How to manage your studies:

- Practice good study habits.
- Practice good time management.
- Communicate effectively with peers and faculty.
- Form a review group with colleagues.
- Utilize the Department of Educational Services (DES).
- Seek advice from your course director, program director and student advisor.
- Respond promptly to all SGU correspondence.
- Preview lectures, laboratories and buzz groups – come prepared!
- Active participation in all lecture, lab and buzz group activities.
- Study material soon after lectures and review regularly.
- Ask and post questions on the general forum.
- Utilize all course resources and material.
- **Use course learning objectives to guide your study.**

Students with Disabilities and Special Challenges:

A student who has a disability or a special challenge, that requires some modification of the seating or other class requirements, must contact the course director so that appropriate arrangements can be made.

Plagiarism Policy

The St. George's University Student Manual states as follows:

“Plagiarism is regarded as a cardinal offence in academia because it constitutes theft of the work of someone else which is then purported as the original work of the plagiarist”

Plagiarism also includes the unintentional copying or false accreditation of work—so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

Course and Instructor Evaluation

Students are expected to attend all classes and other related academic activities as defined for each course by the course director. One such academic activity is participation in the St. George's University (SGU) Course and Instructor Critique Program.

Student Participation in the Evaluation Process is Mandatory

When requested, students enrolled in a course are expected to complete all required faculty and course evaluations. Failure to complete all required course and instructor critiques will mean that students did not fulfill all course requirements. The critiques coordinator will notify students when evaluation periods have begun and send periodic reminders to ensure that

critiques are submitted within the allotted time frame.

The Importance of Evaluation

Evaluation is a necessary component of any course. Just as students anticipate a fair and accurate evaluation of their performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves to meet the needs and expectations of students.

12. School of Arts & Sciences Biology Program Outcomes

1. Apply the scientific process for conducting laboratory and diagnostic experiments, testing hypothesis, interpreting data and communicating results.
- 2. Apply knowledge of the basic structures and fundamental processes of life at the molecular, cellular and organism levels.**
- 3. Apply knowledge of the structure and function of the human body to health issues.**
4. Apply knowledge of the interaction of subatomic particles and biochemical processes that define organic and inorganic matter.
5. Demonstrate effective communication of scientific knowledge.
6. Demonstrate problem solving and critical thinking skills.

13. Student Learning Outcomes

1. Develop a vocabulary of anatomical terminology.
2. Explain the interrelationships between cells, tissues, organs and systems.
3. Recognize anatomical structures and explain functions.
4. Recognize histological structures and explain functions.
5. Recognize the interrelationship between anatomy and physiology.
6. Explain the developmental processes associated with anatomical structures.
7. Discuss the interrelationships of anatomy and physiology with health and disease.

14. Appendix I: Course Learning Objectives

1. Anatomical Terminology & Imaging

- 1.1. Define anatomy and describe the sub disciplines of anatomy.
- 1.2. Describe the orientation of the human body in the anatomical position.
- 1.3. Describe the anatomical terms for the various regions of the human body.
- 1.4. Define the anatomical planes and sections.
- 1.5. Define the directional terms used to describe the human body.
- 1.6. Describe the major body cavities.
- 1.7. Name and describe the abdominopelvic regions and quadrants.
- 1.8. Describe the principles of common medical imaging procedures including: radiography/X-ray, magnetic resonance imaging (MRI), computed tomography (CT), ultrasound and endoscopy.
- 1.9. Recognize the different planes and sections used in imaging.
- 1.10. Recognize anatomical structures using medical imaging.

2. Cellular Organization

- 2.1. Name and describe the principal parts of a cell.
- 2.2. Describe the structure and function of the plasma membrane.
- 2.3. Explain the role of cell membrane as a selective barrier.
- 2.4. Describe the types of movement permissible across the cell membrane.
- 2.5. Explain the basic principles of diffusion and osmosis.
- 2.6. Explain active and passive membrane transport.
- 2.7. List the two major types of vesicular transport.
- 2.8. List and describe the three different mechanisms of endocytosis.
- 2.9. Describe the structure and function of the cytoplasm, cytosol and organelles.
- 2.10. List and describe the structure & function of the ribosomes, endoplasmic reticulum (rER & sER), Golgi apparatus, lysosome, peroxisome and mitochondria.
- 2.11. List the three major types of protein filaments that form the cytoskeleton.
- 2.12. Describe the structure and function of microvilli and stereocilia.
- 2.13. Describe the structure and function of the centrosome.
- 2.14. Describe the structure and function of the cilia and flagella.
- 2.15. Describe the structure and functions of the nucleus.
- 2.16. Identify the nucleus and nucleolus.
- 2.17. Describe the function of the nucleolus.
- 2.18. Describe the structure and function of the nuclear envelope.

- 2.19. Describe the structure and function of the nuclear pore complex.
- 2.20. Describe the organization of chromatin structure.
- 2.21. Distinguish euchromatin and heterochromatin in a nucleus.
- 2.22. Discuss the stages, events and significance of somatic cell division.
- 2.23. List and describe the sequence of events occurring in interphase.
- 2.24. List and describe the sequence of events occurring in mitosis.
- 2.25. Describe the function of the centromere.
- 2.26. Describe the function of the kinetochore.
- 2.27. Describe the function of the mitotic spindle.
- 2.28. Discuss the stages, events and significance of reproductive cell division.
- 2.29. Describe the sequence of events occurring in meiosis.
- 2.30. Describe the two events in meiosis that increase genetic diversity.
- 2.31. Define benign, malignant & metastasis.
- 2.32. Describe the classification of cancer cells including carcinoma & sarcoma.
- 2.33. Define proto-oncogene, oncogene and tumor-suppressor gene.

3. Epithelial Tissue

- 3.1. Describe the general features of epithelial tissue.
- 3.2. Describe the classification of epithelial tissues.
- 3.3. List the location, structure and function of each type of epithelial tissue.
- 3.4. Discuss relationship between epithelial tissue function and morphology
- 3.5. Compare endocrine and exocrine glands.
- 3.6. Describe the structural and functional classification of exocrine glands.
- 3.7. Describe the structure and functions of the five main types of cell junctions.
- 3.8. Describe the different apical modifications of epithelial cells and typical locations.
- 3.9. Describe the types of epithelial membranes.

4. Connective Tissue

- 4.1. Describe the general features of connective tissue.
- 4.2. Describe the structure, functions and locations of the types of connective tissue.
- 4.3. Identify and describe the function of the types of connective tissue cells.
- 4.4. Describe the major components of the extracellular matrix.
- 4.5. Describe the components and characteristics of the ground substance.
- 4.6. Describe the characteristics of the types of fibers found in the extracellular matrix.
- 4.7. Describe the classification of connective tissues.
- 4.8. Identify the different types of connective tissues.
- 4.9. Discuss Marfan syndrome, scurvy, Ehlers-Danlos syndrome and keloids.

5. Integumentary System

- 5.1. Describe the components of the integumentary system.
- 5.2. Identify the two layers of the skin.
- 5.3. Identify and describe the layers of the epidermis.
- 5.4. Describe the location and functions of the principal cell types of the epidermis.
- 5.5. Describe the functional role of cell junctions in the epidermis including desmosomes and hemidesmosomes.
- 5.6. Identify and describe the layers of the dermis.
- 5.7. Discuss the basis of skin color.
- 5.8. Identify and describe the structure, functions and locations of hair.
- 5.9. Identify and describe the structure, functions and locations of the glands of the skin.
- 5.10. Identify and describe the structure, functions and location of nails.
- 5.11. Compare the structural and functional characteristics of thick and thin skin.
- 5.12. Describe the functions of the skin.
- 5.13. Discuss basal cell carcinoma, squamous cell carcinoma, melanoma, burns, albinism, vitiligo and acne.

6. Cartilage & Bone

- 6.1. Describe the general features of cartilage.
- 6.2. Identify and describe the structure, functions and locations of the types of cartilage.
- 6.3. Describe the types of growth, repair and maintenance of cartilage.
- 6.4. Describe the general features of bone.
- 6.5. Describe the classification of bones and list examples.
- 6.6. Describe the parts of a long bone.
- 6.7. Identify and describe the principal surface markings of bones.
- 6.8. Define the following terms: fissure, foramen, fossa, sulcus, meatus, condyle, facet, head, crest, epicondyle, spinous process, trochanter, tubercle and tuberosity.
- 6.9. Identify and describe the structure and functions of compact bone.
- 6.10. Identify and describe the components of an osteon or haversian system.
- 6.11. Identify and describe the structure and functions of spongy bone.
- 6.12. Describe the histological features of bone.
- 6.13. Compare the microscopic structure and function of compact and spongy bone.
- 6.14. Identify and describe the functions of the cells found in bone.
- 6.15. Describe the types of fibers found in bone.
- 6.16. Describe the extracellular matrix of bone.
- 6.17. Describe the blood and nerve supply of bone.

- 6.18. Describe the types of growth, repair and maintenance of bone.
- 6.19. Discuss the common types of fractures.
- 6.20. Describe the process involved in the repair of bone fractures.
- 6.21. Discuss rickets, osteomalacia, osteoporosis and treatments for fractures.

7. Skeletal System

- 7.1. Describe how the skeleton is organized into axial and appendicular divisions.
- 7.2. Identify and describe the features of the cranial bones and facial bones of the skull.
- 7.3. Identify and describe the features of the skull including: sutures, paranasal sinuses, fissures, foramen, meatuses and processes.
- 7.4. Identify the regions and curvatures of the vertebral column.
- 7.5. Describe the structural and functional features of the vertebrae of each region of the vertebral column.
- 7.6. Describe the parts of a typical vertebra.
- 7.7. Identify and describe the features of the sternum & ribs.
- 7.8. Identify and describe the features of the bones of the upper limb.
- 7.9. Identify and describe the features of the bones of the lower limb.
- 7.10. Compare & contrast the characteristic features of male and female pelvis.

8. Joints

- 8.1. Describe the structural and functional classification of joints.
- 8.2. Explain the functional importance of ligaments at joints.
- 8.3. Describes the structure and functions of fibrous joints.
- 8.4. Describes the structure and functions of cartilaginous joints.
- 8.5. Describe the structure of synovial joints.
- 8.6. Describe the six types of synovial joints.
- 8.7. Discuss the major joints of the upper limb (glenohumeral, acromio-clavicular, elbow and wrist) with emphasis on classification, articulating surfaces, movements, and clinical correlates.
- 8.8. Discuss the major joints of the lower limb (hip, knee and ankle) with emphasis on: classification, articulating surfaces, movements, clinical correlates.
- 8.9. Describe the structure and functions of the major joints of the axial skeleton (atlanto-axial, atlanto-occipital, intervertebral, costovertebral, costochondral, temporomandibular) with emphasis on classification, articulating surfaces, movements, and clinical correlates.

9. Muscular Tissue

- 9.1. Compare the three types of muscle tissue based structure, function, location and special features.
- 9.2. Describe the organization of skeletal muscle and its connective tissue coverings.
- 9.3. Explain the relationship between muscle fascicles, muscle fibers, myofibrils and myofilaments.
- 9.4. Describe the histology of skeletal muscle.
- 9.5. Describe the functions of skeletal muscle proteins.
- 9.6. Discuss the process of skeletal muscle stimulation, contraction and relaxation at molecular, cellular and tissue levels.
- 9.7. Compare the three types of skeletal muscle fibers.
- 9.8. Describe the histology of cardiac muscle.
- 9.9. Describe the histology of smooth muscle.

10. Muscular System

- 10.1. Describe the relationship between bones and skeletal muscles in producing body movement.
- 10.2. Explain the characteristics used to name skeletal muscles.
- 10.3. Describe the action and innervation of the muscles of facial expression.
- 10.4. Describe the action and innervation of the muscles that move the mandible and assist in mastication & speech.
- 10.5. Describe the action and innervation of the muscles that move the head.
- 10.6. Describe the action and innervation of the muscles that move the vertebral column.
- 10.7. Describe the action and innervation of the muscles that protect the abdominal viscera and move the vertebral column.
- 10.8. Describe the action and innervation of the muscles of the thorax that assist in breathing.
- 10.9. Describe the action and innervation of the muscles of the thorax that move the pectoral girdle.
- 10.10. Describe the action and innervation of the muscles of the thorax and shoulder that move the humerus.
- 10.11. Describe the action and innervation of the muscles of the arm that move the radius and ulna.
- 10.12. Describe the action and innervation of the muscles of the forearm that move the wrist, hand and digits.
- 10.13. Describe the action and innervation of the intrinsic muscles of the hand.
- 10.14. Categorize the muscles of the upper limb into functional compartments and identify the nerve that supplies each unit.

- 10.15. Describe the action and innervation of the muscles of the gluteal region that move the femur.
- 10.16. Describe the action and innervation of the muscles of the thigh that move the femur, tibia and fibula.
- 10.17. Describe the action and innervation of the muscles of the leg that move the foot and toes.
- 10.18. Describe the action and innervation of the intrinsic muscles of the foot that move the toes.
- 10.19. Categorize the muscles of the lower limb into functional compartments and identify the nerves that supply each unit.
- 10.20. Identify and predict the signs characteristic of loss of muscle function in basic clinical situations.

11. Early Embryology

- 11.1. Differentiate between embryological development and fetal development.
- 11.2. Describe the major events that occur during the first week of development.
- 11.3. Describe the events occurring during fertilization.
- 11.4. Describe the events occurring during cleavage.
- 11.5. Describe the events occurring during blastocyst formation.
- 11.6. Identify the inner cell mass and trophoblast cell populations.
- 11.7. Describe the events occurring during implantation.
- 11.8. Describe stem cell research and therapeutic cloning.
- 11.9. Define totipotent, pluripotent and multipotent stem cells.
- 11.10. Describe ectopic pregnancy.
- 11.11. Describe the major events that occur during the second week of development.
- 11.12. Identify syncytiotrophoblast and cytotrophoblast cells and describe their functions.
- 11.13. Describe the development of the bilaminar disc.
- 11.14. Describe the development and function of the amnion.
- 11.15. Describe the development and function of the yolk sac and extraembryonic coelom.
- 11.16. Describe the development and function of the chorion.
- 11.17. Describe the major events that occur during the third week of development.
- 11.18. Describe gastrulation and the formation of the three primary germ layers.
- 11.19. List the three primary germ layers and structures or tissues produced by the each.
- 11.20. Describe the notochord and its function.
- 11.21. Describe the process of neurulation.
- 11.22. Describe the development and function of somites.
- 11.23. Describe the development of the intraembryonic coelom.

- 11.24. Describe the development of the chorionic villi, placenta and umbilical cord.
- 11.25. Describe the structure and functions of the placenta.
- 11.26. Describe the structure and functions of the umbilical cord.
- 11.27. Describe the major events that occur during the fourth week of development.
- 11.28. Define the term organogenesis.
- 11.29. Describe the head and tail folding of the embryo.
- 11.30. Describe the lateral folding of the embryo.
- 11.31. Discuss development of the embryo from the fifth week through eighth week.
- 11.32. Describe the major events of the fetal period.

12. Embryology of the Musculoskeletal System

- 12.1. Describe the development and differentiation of somites.
- 12.2. Describe the musculoskeletal derivatives of the dermatome, myotome and sclerotome.
- 12.3. Describe the development of cartilage.
- 12.4. Describe intramembranous ossification.
- 12.5. Describe endochondral ossification.
- 12.6. Describe the role of the epiphyseal plate in bone growth.
- 12.7. Identify the four zones of the epiphyseal plate.
- 12.8. Describe the development of the vertebral column, ribs and sternum.
- 12.9. Describe the development of the cranium.
- 12.10. Describe the stages of limb development.
- 12.11. Describe the role of the apical ectodermal ridge (AER) in limb development.
- 12.12. Describe the development of skeletal muscle.

13. Cardiovascular System

13.1. Blood

- 13.1.1. Describe the functions of blood.
- 13.1.2. Describe physical characteristics of blood.
- 13.1.3. Describe the principal components of blood.
- 13.1.4. List the components of plasma and their functions.
- 13.1.5. List the components of formed elements.
- 13.1.6. Define hematocrit and list the normal values for adult men and women.
- 13.1.7. Discuss the procedure and common sites for venipuncture.
- 13.1.8. Describe the origin and development of blood cells.

- 13.1.9. Describe the process of hemopoiesis (hematopoiesis).
- 13.1.10. Describe the hormones associated with the regulation of hematopoiesis.
- 13.1.11. Describe the structure and functions of red blood cells (RBCs).
- 13.1.12. Describe the structure and function of hemoglobin.
- 13.1.13. Describe the life cycle of the RBCs.
- 13.1.14. Describe erythropoiesis.
- 13.1.15. Describe the main stimulus and regulation of erythropoiesis.
- 13.1.16. Describe the basis for ABO and Rh blood groups.
- 13.1.17. Define hypoxia and list possible causes.
- 13.1.18. Define & discuss the possible causes and different types of anemia.
- 13.1.19. Define & discuss the possible causes of polycythemia.
- 13.1.20. Discuss sickle cell disease.
- 13.1.21. Discuss hemolytic disease of the newborn.
- 13.1.22. Describe the structure and function of white blood cells (WBCs).
- 13.1.23. List and identify the three types of granular leukocytes.
- 13.1.24. List and identify the two types of agranular leukocytes.
- 13.1.25. Define a differential white blood cells count, list the normal percentages for WBCs and discuss the significance of high or low cell counts.
- 13.1.26. Define and discuss the possible causes of leukocytosis.
- 13.1.27. Define and discuss the possible causes of leukopenia.
- 13.1.28. Define and discuss the four types of leukemia.
- 13.1.29. Describe the structure, functions, origin and hormonal regulation of platelets.
- 13.1.30. Discuss stem cell transplants.

13.2. Heart

- 13.2.1. Describe the location and position of the heart.
- 13.2.2. Describe the structure of the pericardium.
- 13.2.3. Describe the layers of the heart wall.
- 13.2.4. Describe the histology of cardiac muscle and the heart.
- 13.2.5. Describe the anatomy of the heart chambers and their interrelationships.
- 13.2.6. Describe the location, structure and functions of the heart valves.
- 13.2.7. Describe the auscultation sites of the heart valves.
- 13.2.8. Describe the flow of blood through the chambers of the heart.
- 13.2.9. Describe systemic and pulmonary circulation.
- 13.2.10. Describe the coronary circulation.
- 13.2.11. Describe the structure and functions of the cardiac conduction system.
- 13.2.12. Describe the innervation of the heart.

- 13.2.13. Describe the phases of the cardiac cycle.
- 13.2.14. Describe how heart sounds are produced.
- 13.2.15. Discuss coronary artery disease, myocardial ischemia and myocardial infarction.

13.3. Blood Vessels

- 13.3.1. Describe the basic structure of a blood vessel.
- 13.3.2. Compare & contrast the structure and functions of arteries, arterioles, capillaries, venules and veins.
- 13.3.3. Compare & contrast elastic and muscular arteries.
- 13.3.4. Describe the location, structure and functions of the three types of capillaries.
- 13.3.5. Describe the structural and functional differences between arteries and veins.
- 13.3.6. Describe systemic & pulmonary circulation.
- 13.3.7. Describe coronary, cerebral and hepatic portal circulation.
- 13.3.8. Identify the four divisions of the aorta.
- 13.3.9. Identify the major arteries arising from the ascending aorta.
- 13.3.10. Identify the major arteries arising from the aortic arch.
- 13.3.11. Identify the major arteries that supply the head, neck and upper limb.
- 13.3.12. Identify the major arteries arising from the thoracic aorta.
- 13.3.13. Identify the major arteries arising from the abdominal aorta.
- 13.3.14. Identify the major arteries that supply the head, neck and upper limb.
- 13.3.15. Identify the major arteries that supply the pelvis and lower limb.
- 13.3.16. Identify the three veins that return deoxygenated blood to the heart.
- 13.3.17. Identify the major veins that drain the head, neck and upper limb.
- 13.3.18. Identify the components of the azygous system of veins.
- 13.3.19. Identify the major veins that drain the abdomen and pelvis.
- 13.3.20. Identify the major veins that drain the lower limb.
- 13.3.21. Identify the major veins of the hepatic portal circulation.
- 13.3.22. Discuss varicose veins, hypertension, aneurysms, hemorrhoids, stroke and thrombosis.

13.4. Embryology of the Cardiovascular System

- 13.4.1. Describe major events that take place in the development of the heart from the cardiogenic mesoderm to the formation of the four chambered heart.
- 13.4.2. Describe the subdivisions of the tubular heart and their adult derivatives.
- 13.4.3. Describe partitioning of the heart into four chambers.
- 13.4.4. Describe the formation of the atrioventricular canal.
- 13.4.5. Describe the major events in the partitioning and development of the atria.

- 13.4.6. Discuss atrial septal defects.
- 13.4.7. Describe the changes in the sinus venosus.
- 13.4.8. Describe the major events in the partitioning and development of the ventricles.
- 13.4.9. Describe the major events in the partitioning of the bulbus cordis and truncus arteriosus.
- 13.4.10. Describe the development of the valves of the heart.
- 13.4.11. Describe fetal circulation and the changes at birth.
- 13.4.12. Describe the development of lymphatic tissues and vessels.

14. Lymphatic System

- 14.1. Describe the components and major functions of the lymphatic system
- 14.2. Describe the formation and flow of lymph.
- 14.3. Describe the organization of lymphatic vessels and circulation.
- 14.4. Describe the routes for the drainage of lymph into the right lymphatic duct and a return to the venous system.
- 14.5. Describe the routes for the drainage of lymph into the thoracic duct and a return to the venous system.
- 14.6. Describe primary and secondary lymphatic organs.
- 14.7. Describe the structure and functions of the thymus.
- 14.8. Describe the structure and functions of lymph nodes.
- 14.9. Describe the structure and functions of the spleen.
- 14.10. Describe the flow of lymph through a lymph node.
- 14.11. Describe the structure, location and functions of lymphatic nodules.
- 14.12. Describe the five tonsils that form the tonsillar (Waldeyer's) ring.
- 14.13. Identify the principal lymph nodes of the thorax.
- 14.14. Identify the principal lymph nodes of the upper limb.
- 14.15. Discuss the flow of lymph from the breast.
- 14.16. Identify the principal lymph nodes of the lower limb.
- 14.17. Discuss edema, lymphedema, tonsillitis, splenomegaly, lymphoma, lymphadenitis.

15. Respiratory System

15.1. Anatomy

- 15.1.1. Describe the functional and structural components of the respiratory system.
- 15.1.2. Describe the structure and functions of the nose and nasal cavity.
- 15.1.3. Describe the paranasal sinuses and their drainage.

- 15.1.4. Describe the structure and functions of the pharynx.
- 15.1.5. Describe the structures and functions of the larynx.
- 15.1.6. Describe the structures involved in voice production.
- 15.1.7. Identify and describe the actions of the muscles of the larynx.
- 15.1.8. Identify and describe the actions of the muscles of respiration.
- 15.1.9. Describe the structure and function of the trachea.
- 15.1.10. Describe the branching of the bronchial tree.
- 15.1.11. Describe the relationship of the pleural membranes to the lungs.
- 15.1.12. Describe the surface anatomy of the lungs.
- 15.1.13. Describe the lobes, lobules and bronchopulmonary segments of the lungs.
- 15.1.14. Describe the microscopic airways of the lungs.
- 15.1.15. Compare & contrast the microscopic structures of the trachea, bronchi, bronchioles and alveoli.
- 15.1.16. Describe the components of an alveolus and the respiratory membrane.
- 15.1.17. Describe the mechanics of breathing.
- 15.1.18. Describe the muscles of inhalation and exhalation.
- 15.1.19. Discuss asthma, pleuritis, emphysema, pneumothorax, hemothorax, laryngitis.

15.2. Embryology

- 15.2.1. Describe the major events in the development of the respiratory system.
- 15.2.2. List the germ layers which contribute to the formation of the respiratory tract.
- 15.2.3. Describe the structural components of the pharyngeal apparatus (arch, cleft and pouch).
- 15.2.4. Describe the formation of the respiratory diverticulum and lung buds.
- 15.2.5. Describe the development of bronchi.
- 15.2.6. Describe the formation of the pleural and pericardial cavities.
- 15.2.7. Describe the stages of lung development.
- 15.2.8. Discuss respiratory distress syndrome.

16. Digestive System

16.1. Anatomy

- 16.1.1. Name and describe the abdominopelvic regions.
- 16.1.2. Identify the organs of the digestive system.
- 16.1.3. Describe the basic processes performed by the digestive system.

- 16.1.4. Describe the structure and function of the layers that form the wall of the gastrointestinal (GI) tract.
- 16.1.5. Describe the innervation of the GI tract and the plexuses that form the enteric nervous system.
- 16.1.6. Describe the peritoneum and peritoneal folds.
- 16.1.7. Describe the arrangement of visceral and parietal peritoneum.
- 16.1.8. Describe and identify retroperitoneal vs. intraperitoneal organs.
- 16.1.9. Describe the location, structure, function and secretion of the salivary glands.
- 16.1.10. Describe the structure and functions of the tongue.
- 16.1.11. Describe the structure and function of the lingual papillae.
- 16.1.12. Describe the structure and function of the taste buds.
- 16.1.13. Describe the structure and function of the pharynx.
- 16.1.14. Describe the anatomy, histology and functions of the esophagus.
- 16.1.15. Describe the anatomy, histology and functions of the stomach.
- 16.1.16. Describe the anatomy, histology and functions of the small intestine.
- 16.1.17. Describe the anatomy, histology and functions of the large intestine.
- 16.1.18. Describe the anatomy and histology of the rectum and anal canal.
- 16.1.19. Compare the internal and external anal sphincters.
- 16.1.20. Describe the anatomy, histology and functions of the liver.
- 16.1.21. Describe the path of blood flow through the liver.
- 16.1.22. Describe the anatomy, histology and functions of the gallbladder.
- 16.1.23. Describe the anatomy of the biliary tree.
- 16.1.24. Discuss gallstones, the potential sites where gallstones can be lodged and explain the effects on the bile flow.
- 16.1.25. Describe the anatomy, histology and functions of the pancreas.
- 16.1.26. Describe the location of the spleen and its relationship to surrounding structures.
- 16.1.27. Describe the blood supply of the foregut and spleen.
- 16.1.28. Describe the blood supply of the midgut.
- 16.1.29. Describe the blood supply of the hindgut.
- 16.1.30. Describe the hepatic portal system and major veins of the digestive system.
- 16.1.31. Discuss Barrett's esophagus, GERD, gallstones, hemorrhoids, intestinal obstruction, peptic ulcer, appendicitis, pancreatitis, hepatitis and colorectal cancer.

16.2. Embryology

- 16.2.1. Describe the major events in the development of the digestive system
- 16.2.2. List the tissues and germ layers which contribute to the formation of the GI tract and glands.
- 16.2.3. Describe the embryological concept of the foregut, midgut and hindgut & list the parts of the digestive tract arising from these embryological structures.
- 16.2.4. Describe the general scheme of the blood supply of the foregut, midgut and the hindgut.
- 16.2.5. Describe an ileal (Meckel) diverticulum.
- 16.2.6. Describe the embryological origin and development of the liver, gallbladder and pancreas.
- 16.2.7. Compare and contrast the embryologic origin of the anal canal above and below the pectinate line.

17. Urinary System

- 17.1. Describe and identify the major structures and functions of the urinary system.
- 17.2. Describe the location of the kidneys and their relationship with surrounding organs/structures.
- 17.3. Describe the anatomy, histology and functions of the kidneys.
- 17.4. Describe the types of nephrons.
- 17.5. Describe the components of a nephron.
- 17.6. Describe the histology of a renal corpuscle.
- 17.7. Describe the juxtaglomerular apparatus.
- 17.8. Describe the functions of nephrons and the components of the filtration membrane.
- 17.9. Describe the path of blood flow through the kidneys.
- 17.10. Describe the flow of fluid through a nephron.
- 17.11. Describe the path of urine from the renal papilla to the external urethral orifice.
- 17.12. Describe the course and relationships of the ureters.
- 17.13. Describe the location of the suprarenal glands.
- 17.14. Discuss kidney stones, the potential sites where kidney stones can be lodged and the effects on urine flow.
- 17.15. Describe the relationship of the bladder to other organs.
- 17.16. Describe the anatomy and histology of the urinary bladder.
- 17.17. Compare the innervation of the internal and external urethral sphincters.
- 17.18. Identify the divisions of the male urethra.
- 17.19. Compare and contrast the male versus female urethra.
- 17.20. Explain why lower urinary tract infections are more common to females than in males.

17.21. Discuss kidney stones, kidney transplant, renal failure, dialysis and incontinence.

18. Reproductive System

18.1. Overview

- 18.1.1. Identify and describe the anatomical location of the male and female reproductive organs.
- 18.1.2. Describe the perineum including the urogenital and anal triangles.
- 18.1.3. Identify the supporting muscles of the male and female perineum.
- 18.1.4. Describe what is meant by true and false pelvis.
- 18.1.5. Review the differences between the male and female bony pelvis.
- 18.1.6. Discuss vasectomy, benign prostatic hyperplasia, prostatic cancer, erectile dysfunction, ectopic pregnancy, tubal ligation, uterine prolapse, breast cancer, ovarian cancer, cervical cancer, sexually transmitted infections and birth control.

18.2. Male

- 18.2.1. List the major components of the male reproductive system and the general functions.
- 18.2.2. Describe the structure and functions of the scrotum.
- 18.2.3. Describe the anatomy, histology and functions of the testes.
- 18.2.4. Describe the histology and functions of the seminiferous tubules.
- 18.2.5. Describe meiosis and the process of spermatogenesis.
- 18.2.6. Identify Sertoli cells and Leydig cells and describe their functions.
- 18.2.7. Describe the blood-testis barrier.
- 18.2.8. Describe the intra- and extra- testicular duct system.
- 18.2.9. Describe histology and functions of the efferent ducts.
- 18.2.10. Describe the anatomy, histology and functions of the epididymis.
- 18.2.11. Describe the anatomy, histology and functions of the ductus deferens.
- 18.2.12. Describe the pathway followed by the sperm from the seminiferous tubules to external urethral orifice.
- 18.2.13. Describe the structures that comprise the spermatic cord & the passage through the inguinal canal.
- 18.2.14. Describe the anatomy, histology and functions of the seminal vesicles.
- 18.2.15. Describe the anatomy, histology and functions of the prostate gland.
- 18.2.16. Describe the anatomy, histology and functions of the bulbourethral glands.
- 18.2.17. Describe the characteristics and functions of semen.
- 18.2.18. Describe the parts of the male urethra.

- 18.2.19. Describe the anatomy and functions of the penis.
- 18.2.20. Describe the processes of erection and ejaculation.

18.3. Female

- 18.3.1. Identify the structures in the female pelvis and describe the relations with each other.
- 18.3.2. Describe the peritoneal reflections over the organs in the female pelvis.
- 18.3.3. Describe the rectouterine pouch (of Douglas) and its clinical significance.
- 18.3.4. Describe the components female external genitalia.
- 18.3.5. Describe the anatomy of the female urethra and its clinical significance.
- 18.3.6. Describe the anatomy, histology and functions of the ovaries.
- 18.3.7. Describe meiosis, the process of oogenesis & follicular development.
- 18.3.8. Identify primordial, primary, secondary and mature follicles.
- 18.3.9. Describe the female reproductive cycle including the ovarian and uterine cycles.
- 18.3.10. Describe the hormonal regulation of the reproductive cycle.
- 18.3.11. Describe the anatomy, histology and functions of the uterine tubes.
- 18.3.12. Describe the anatomy, histology and functions of the uterus.
- 18.3.13. Identify the layers of the uterus.
- 18.3.14. Describe the anatomical position of the uterus and its relations with the bladder and the rectum.
- 18.3.15. Identify the uterosacral, cardinal, ovarian, round, suspensory and broad ligaments.
- 18.3.16. Identify the layers of the endometrium.
- 18.3.17. Compare the structure and functions of the endometrium in different phases of the uterine cycle.
- 18.3.18. Describe the anatomy, histology and functions of the vagina.
- 18.3.19. Describe the anatomy of the breast & the histology and function mammary glands.
- 18.3.20. Describe the lymphatic drainage of the breast and its clinical significance.
- 18.3.21. Describe the pathway followed by the sperm in the female genital tract after sexual intercourse.
- 18.3.22. Describe the clinical importance of the relationship of vagina with the cervix and peritoneum.

18.4. Embryology of the Genitourinary Systems

- 18.4.1. Describe the major events in the development of the urinary system.
- 18.4.2. List the tissues and germ layers which contribute to the formation of the urinary system.
- 18.4.3. Describe the development of kidneys, ureters, urinary bladder, and the urethra.
- 18.4.4. Describe the ascent and rotation of the kidneys.
- 18.4.5. Describe the major events in the development of the male and female reproductive systems.
- 18.4.6. List the tissues and germ layers which contribute to the formation of the reproductive system.
- 18.4.7. Describe the development of testes & ovaries.
- 18.4.8. Describe the embryological process of descent of testes through the anterior abdominal wall.
- 18.4.9. Describe the development of the external genitalia.
- 18.4.10. List the adult derivatives and vestigial remnants of embryonic urogenital structures.
- 18.4.11. Discuss hypospadias, cryptorchidism, horse-shoe kidney, renal agenesis.

19. Nervous System

19.1. Introduction

- 19.1.1. Describe the anatomical and functional organization of the nervous system.
- 19.1.2. Describe the components of the central nervous system (CNS).
- 19.1.3. Describe the components of the peripheral nervous system (PNS).
- 19.1.4. Describe the somatic nervous system.
- 19.1.5. Describe the autonomic nervous system including the sympathetic and parasympathetic divisions.
- 19.1.6. Describe the enteric nervous system.
- 19.1.7. Describe the three basic functions of the nervous system.
- 19.1.8. Describe the histology and functions of neurons.
- 19.1.9. Describe the classification of neurons.
- 19.1.10. Describe the types of synapses.
- 19.1.11. Describe the neuromuscular junction.
- 19.1.12. Compare electrical and chemical synapses.
- 19.1.13. Describe signal transmission at a chemical synapse.
- 19.1.14. Describe the classification of neurons.
- 19.1.15. Describe the histology and functions of neuroglia.
- 19.1.16. Describe the types of neuroglia in the CNS and their functions.
- 19.1.17. Discuss the components and function of the blood-brain barrier.

- 19.1.18. Describe the types of neuroglia in the PNS and their functions.
- 19.1.19. Describe myelination.
- 19.1.20. Compare nuclei, ganglia, nerves and tracts.
- 19.1.21. Describe gray and white matter.
- 19.1.22. Describe the arrangement of gray and white matter in the CNS.

19.2. Embryology

- 19.2.1. Describe the major events in the development of the nervous system.
- 19.2.2. List the tissues and germ layers which contribute to the formation of the nervous system.
- 19.2.3. Describe the process of neurulation and the adult derivatives.
- 19.2.4. Describe the formation of neural crest cells and their derivatives.
- 19.2.5. Discuss neural tube defects including spina bifida and anencephaly.
- 19.2.6. Describe development of the brain.
- 19.2.7. Describe the formation of the primary brain vesicles.
- 19.2.8. Describe the formation of the secondary brain vesicles and the adult derivatives.

19.3. Brain

- 19.3.1. List and identify the major parts of the brain.
- 19.3.2. Describe the protective coverings of the brain.
- 19.3.3. Identify the three layers of the meninges that surround the brain.
- 19.3.4. Describe arterial supply and venous drainage of the brain.
- 19.3.5. Discuss the components and function of the blood-brain barrier.
- 19.3.6. Explain the formation and circulation of cerebrospinal fluid (CSF).
- 19.3.7. List the functions the CSF performs to protect the central nervous system.
- 19.3.8. List and identify the ventricles of the brain.
- 19.3.9. Describe hydrocephalus.
- 19.3.10. List and identify the three structures of the brainstem.
- 19.3.11. Describe the anatomy and function of the medulla oblongata.
- 19.3.12. List the five pairs of cranial nerves associated with the medulla oblongata.
- 19.3.13. Describe the anatomy and function of the pons.
- 19.3.14. List the four pairs of cranial nerves associated with the pons.
- 19.3.15. Describe the anatomy and function of the midbrain.
- 19.3.16. List the two pairs of cranial nerves associated with the midbrain.
- 19.3.17. Describe the anatomy and function of the reticular formation.
- 19.3.18. Identify and describe the anatomy and functions of the cerebellum.

- 19.3.19. Discuss ataxia.
- 19.3.20. List and identify the three components of the diencephalon.
- 19.3.21. Describe the anatomy and function of the thalamus.
- 19.3.22. Describe the anatomy and function of the hypothalamus.
- 19.3.23. Describe the anatomy and function of the epithalamus.
- 19.3.24. Identify and describe the function of the pineal gland.
- 19.3.25. Describe the cortex, gyri, fissures and sulci of the cerebrum.
- 19.3.26. List and identify the lobes of the cerebrum.
- 19.3.27. Describe the three types of cerebral white matter tracts.
- 19.3.28. Identify and describe the function of the corpus callosum.
- 19.3.29. Describe the function of the basal ganglia.
- 19.3.30. Describe the anatomy and function of the limbic system.
- 19.3.31. Discuss the signs, symptoms and causes of concussion.
- 19.3.32. List, identify and describe the anatomy and function of the sensory, association and motor areas of the cerebral cortex.
- 19.3.33. Describe aphasia including the areas affected in fluent and non-fluent aphasia.
- 19.3.34. Discuss the functional asymmetry of the brain.
- 19.3.35. Describe the structure and importance of the blood brain barrier
- 19.3.36. Outline the somatic sensory & motor pathways.
- 19.3.37. Discuss subdural hematoma, epidural hematoma, subarachnoid bleed and cerebrovascular accident.

19.4. Spinal Cord & Spinal Nerves

- 19.4.1. Describe the protective structures of the spinal cord.
- 19.4.2. Describe the spinal tap procedure.
- 19.4.3. Describe the external anatomy of the spinal cord and spinal nerves.
- 19.4.4. Describe the internal anatomy of the spinal cord.
- 19.4.5. Outline the blood supply to the spinal cord.
- 19.4.6. Describe the organization of gray and white matter in the spinal cord.
- 19.4.7. Describe the components, connective tissue coverings and branching of a spinal nerve.
- 19.4.8. Describe the loss of function following traumatic injury to different regions of the spinal cord.
- 19.4.9. Compare the cross section of spinal cord at different vertebral regions.
- 19.4.10. Outline the general components of a reflex arc.
- 19.4.11. Describe the formation of the spinal nerves.

- 19.4.12. Describe a nerve plexus and list the principal plexuses.
- 19.4.13. Describe the origin and distribution of the cervical plexus.
- 19.4.14. Identify the ansa cervicalis, transverse cervical, phrenic, lesser occipital and greater auricular nerves.
- 19.4.15. Describe the origin and distribution of the brachial plexus.
- 19.4.16. Identify the long thoracic, axillary, musculocutaneous, radial, median and ulnar nerves.
- 19.4.17. Describe the effect of brachial plexus injury including the long thoracic, radial, median, and ulnar nerves.
- 19.4.18. Describe the origin and distribution of the lumbar plexus.
- 19.4.19. Identify the iliohypogastric, ilioinguinal, lateral cutaneous nerve of thigh, genitofemoral, femoral and obturator nerves.
- 19.4.20. Describe the origin and distribution of the sacral and coccygeal plexuses.
- 19.4.21. Identify the posterior cutaneous nerve of thigh, sciatic, tibial, medial plantar, lateral plantar, common fibular, deep fibular and superficial fibular nerves.
- 19.4.22. Describe the distribution and significance of dermatomes.
- 19.4.23. Identify spinal nerve injuries in basic clinical cases.
- 19.4.24. Discuss shingles.

19.5. Cranial Nerves

- 19.5.1. Identify the cranial nerves by name, number and type.
- 19.5.2. Identify the olfactory nerve and describe its anatomy and function.
- 19.5.3. Define anosmia.
- 19.5.4. Identify the optic nerve and describe its anatomy and function.
- 19.5.5. Define anopia.
- 19.5.6. Identify the oculomotor nerve and describe its anatomy and function.
- 19.5.7. Identify the trochlear nerve and describe its anatomy and function.
- 19.5.8. Identify the abducens nerve and describe its anatomy and function.
- 19.5.9. Define strabismus, ptosis and diplopia.
- 19.5.10. Identify the trigeminal nerve and describe the anatomy and function of each branch.
- 19.5.11. Identify the facial nerve and describe its anatomy and function.
- 19.5.12. Describe Bell's palsy.
- 19.5.13. Identify the vestibulocochlear nerve and describe its anatomy and function.

- 19.5.14. Define vertigo and tinnitus.
- 19.5.15. Identify the glossopharyngeal nerve and describe its anatomy and function.
- 19.5.16. Define dysphagia.
- 19.5.17. Identify the vagus nerve and describe its anatomy and function.
- 19.5.18. Identify the accessory nerve and describe its anatomy and function.
- 19.5.19. Identify the hypoglossal nerve and describe its anatomy and function.
- 19.5.20. Identify the muscles supplied by somatic motor nerves III, IV, V, VI, VII, VIII, IX, X, XI and XII.
- 19.5.21. Describe the sensory supply of somatic sensory nerves V, VII, IX and X.
- 19.5.22. Discuss the parasympathetic supply of visceral motor nerves III, VII, IX and X.
- 19.5.23. Describe the afferent and efferent limbs involved in cranial nerve reflexes (startle, blink, corneal, gag, cough, pupillary).
- 19.5.24. Describe the anatomical origin of each of the cranial nerves and their exit from the skull.
- 19.5.25. Identify cranial nerve injuries in basic clinical cases.

19.6. Autonomics

- 19.6.1. Compare the structures and functions of the somatic and autonomic nervous system (ANS).
- 19.6.2. Describe the motor neuron pathways in the somatic and autonomic nervous systems.
- 19.6.3. Compare the anatomy of the sympathetic and parasympathetic divisions.
- 19.6.4. Compare preganglionic and postganglionic neurons of the ANS.
- 19.6.5. Describe the anatomy of the autonomic ganglia and plexuses.
- 19.6.6. Describe the anatomy of sympathetic and parasympathetic preganglionic neurons.
- 19.6.7. Describe the locations of the sympathetic and parasympathetic ganglia.
- 19.6.8. Describe the anatomy of sympathetic and parasympathetic postganglionic neurons.
- 19.6.9. Describe the autonomic plexuses in the thorax, abdomen and pelvis.
- 19.6.10. Describe the pathway of preganglionic sympathetic neurons from the spinal cord to the sympathetic trunk ganglia.
- 19.6.11. Describe white rami communicantes.
- 19.6.12. Describe the pathways from sympathetic trunk ganglia to visceral effectors.
- 19.6.13. Describe gray rami communicantes.
- 19.6.14. Describe splanchnic nerves.

- 19.6.15. Describe the cranial parasympathetic outflow.
- 19.6.16. List the four pairs of cranial nerves associated with the cranial parasympathetic outflow.
- 19.6.17. List the four pairs of ganglia associated with the cranial parasympathetic outflow.
- 19.6.18. Describe the sacral parasympathetic outflow.
- 19.6.19. Describe pelvic splanchnic nerves.
- 19.6.20. Describe the major responses of the body to stimulation by the sympathetic division.
- 19.6.21. Describe the major responses of the body to stimulation by the parasympathetic division.
- 19.6.22. Describe the basic components of an autonomic reflex arc.
- 19.6.23. Discuss the relationship of the hypothalamus to the autonomic nervous system.
- 19.6.24. Describe the course of visceral sensory fibers traveling with sympathetic nerves, and the location of their cell bodies.
- 19.6.25. Discuss the mechanism of referred pain.

19.7. Special Senses

19.7.1. Eye

- 19.7.1.1. Describe the wavelengths of the electromagnetic spectrum that correspond to visible light.
- 19.7.1.2. Describe the anatomy and function of the accessory structures of the eye.
- 19.7.1.3. Identify the lacrimal gland and describe the flow of tears.
- 19.7.1.4. Identify the extrinsic eye muscles.
- 19.7.1.5. Describe the function and innervation of the extrinsic eye muscles.
- 19.7.1.6. Describe the anatomy and histology of the eyeball.
- 19.7.1.7. Describe the anatomy and function of the fibrous tunic.
- 19.7.1.8. Identify the sclera and cornea.
- 19.7.1.9. Describe the anatomy and function of the vascular tunic.
- 19.7.1.10. Identify the choroid, ciliary body, ciliary muscle, zonular fibers, iris and pupil.
- 19.7.1.11. Describe the innervation and action of the ciliary muscle, sphincter pupillae and dilator pupillae.
- 19.7.1.12. Describe the anatomy and function of the retina.

- 19.7.1.13. Describe the microscopic structure and histology of the retina.
- 19.7.1.14. Identify the two types of photoreceptor cells and describe their function.
- 19.7.1.15. Identify and describe the optic disc.
- 19.7.1.16. Discuss the path of light and direction of nerve impulses through the retina.
- 19.7.1.17. Identify and describe the structure of the macula lutea.
- 19.7.1.18. Identify the lens and describe its structure and function.
- 19.7.1.19. Describe the anatomy of the interior of the eye.
- 19.7.1.20. Describe the production and flow of aqueous humor.
- 19.7.1.21. Discuss age related macular disease and its effect on vision.
- 19.7.1.22. Describe the refraction of light through the eye.
- 19.7.1.23. Describe the sequence of events that occur during accommodation for near vision.
- 19.7.1.24. Describe constriction of the pupil.
- 19.7.1.25. Describe presbyopia.
- 19.7.1.26. Describe refraction abnormalities including myopia and hyperopia.
- 19.7.1.27. Describe convergence.
- 19.7.1.28. Outline the visual pathway.

19.7.2. Ear

- 19.7.2.1. Describe the anatomy and function of the external ear.
- 19.7.2.2. Identify the auricle, external auditory canal and tympanic membrane.
- 19.7.2.3. Describe the anatomy and function of the middle ear.
- 19.7.2.4. Identify the malleus, incus, stapes, oval window, round window and auditory tube.
- 19.7.2.5. Describe the anatomy and function of the inner ear.
- 19.7.2.6. Describe the bony labyrinth and perilymph.
- 19.7.2.7. Describe the membranous labyrinth and endolymph.
- 19.7.2.8. Describe the anatomy and function of the cochlea including the spiral organ of Corti.
- 19.7.2.9. Describe the nature of sound waves including the audible range of frequencies for humans.
- 19.7.2.10. Identify the vestibule, semicircular canals and cochlea.
- 19.7.2.11. Explain the basic events involved in hearing.
- 19.7.2.12. Outline the auditory pathway.
- 19.7.2.13. Describe the structures associated with static equilibrium.
- 19.7.2.14. Describe the structures associated with dynamic equilibrium.

19.7.2.15. Outline the equilibrium pathway.

20. Endocrine System

- 20.1. Distinguish between an endocrine gland and an exocrine gland.
- 20.2. Describe how hormones interact with receptor cells.
- 20.3. Distinguish between circulating and local hormones.
- 20.4. Describe the anatomical and functional relationship between the hypothalamus and pituitary gland.
- 20.5. Describe the hypophyseal portal system.
- 20.6. Describe the location and histology of the pituitary gland.
- 20.7. List the seven major hormones secreted by the anterior pituitary gland and the five types of cells that secrete them.
- 20.8. Describe the principal actions of the anterior pituitary hormones.
- 20.9. Describe the regulation of the anterior pituitary hormone secretion.
- 20.10. Discuss the function and regulation of human growth hormone and insulin-like growth factors.
- 20.11. List hormones released by the posterior pituitary gland.
- 20.12. Describe the regulation and actions of the hormones released by the posterior pituitary gland.
- 20.13. Describe the location and histology of the thyroid gland.
- 20.14. Describe the regulation and actions of thyroid hormones.
- 20.15. Discuss the regulation and action of calcitonin.
- 20.16. Describe the location and histology of the parathyroid glands.
- 20.17. Discuss the regulation and action of parathyroid hormone.
- 20.18. Describe the location and histology of the adrenal glands.
- 20.19. List the three zones of the adrenal cortex and the hormones secreted by each zone.
- 20.20. Describe the regulation and actions of the hormones secreted by the adrenal cortex.
- 20.21. Discuss the functions of aldosterone and its regulation by the renin-angiotensin pathway.
- 20.22. Describe the regulation and effects of the glucocorticoids.
- 20.23. Describe the actions of dehydroepiandrosterone (DHEA).
- 20.24. Describe the regulation and actions of the two major hormones secreted by the adrenal medulla.
- 20.25. Describe the anatomy and histology of the pancreas.
- 20.26. List the cell types of the pancreatic islets and the hormones produced.
- 20.27. Discuss the regulation and action of glucagon and insulin.

- 20.28. List the hormones produced by the gonads and describe their actions.
- 20.29. Describe the location, histology, hormones, and functions of the pineal gland.
- 20.30. Discuss the role of melatonin in seasonal affective disorder and jet lag.
- 20.31. Describe the role of the thymus gland and its hormones in immunity.
- 20.32. Discuss anterior pituitary gland disorders including pituitary dwarfism, gigantism and acromegaly.
- 20.33. Discuss posterior pituitary gland disorders including diabetes insipidus.
- 20.34. Discuss thyroid gland disorders including Graves' disease and goiter.
- 20.35. Discuss parathyroid gland disorders including hypo- and hyperparathyroidism.
- 20.36. Discuss adrenal gland disorders including Cushing's syndrome, Addison's disease and pheochromocytoma.
- 20.37. Discuss pancreatic disorders including diabetes mellitus, Type 1 and Type 2 diabetes.

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St. George's University
School of Arts and Sciences

Department of Biochemistry

Course Code and Title: CHEM 450 - Biochemistry

Semester and Year: Summer 2021

No. of Credits: 3

Pre-requisite(s): CHEM 224 – Organic chemistry II

Course Director: Ms. Kafi James-Lewis

Course Lecturer Name(s): Ms. Kafi James-Lewis

Dr. Christopher Chinnatambi

Dr. Shellon Thomas

Mrs. Atoum Abdullah

Course Secretaries: Jenny MacDonald

Course Director Contact Information: kjames@sgu.edu

Course Lecturer(s) Contact Information: jmcdona1@sgu.edu

Office Hours: By appointment (contact Jenny MacDonald at jmcdona1@sgu.edu)

Course Management tool: To learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

Course Description: CHEM 450 is a 3-credit biochemistry course in the premedical/foundation program at SGU. It is subdivided into 4 modules.

Students are expected to have a basic knowledge of pre-med biology and chemistry.

The material to be covered in this course is based primarily on the required texts (see below) and power point slides, Direct learning activities (DLAs), with additional information taken from other reference texts.

Course Objectives:

1. To cover the structure and function of biological molecules, the biochemical pathways of intermediary metabolism, the functional significance of biochemical processes as well as their regulation in normal and aberrant states.
2. Identify the structures and cellular roles of the major macromolecules
 - Amino acids and proteins
 - Carbohydrates and polysaccharides.
 - Fatty acids, triacylglycerol, phospholipids, and cholesterol
 - Purines, pyrimidines, and nucleic acids
3. List and explain the major metabolic pathways (synthesis and degradation) of proteins, carbohydrates, lipids, and nucleic acids.

Topics covered in detail will include:

- Electron transport/ Oxidative Phosphorylation
 - Glycolysis
 - Tricarboxylic Acid Cycle
 - Pyruvate synthesis and Utilization
 - Gluconeogenesis
 - Hexose monophosphate pathway
 - Fatty acid synthesis and degradation
 - Glycerolipid synthesis and degradation
 - Triacylglycerol and lipoprotein metabolism
 - Cholesterol synthesis and degradation
 - Amino Acid Degradation and Synthesis
 - Amino Acid specialized products
 - Urea Cycle
 - Hormonal regulation of intermediary metabolism: The fast/feed cycle
 - Signal transduction mechanisms (Insulin, glucagon, G-protein coupled receptors)
 - Vitamins
 - Purine and Pyrimidine Degradation and Synthesis
4. Integrate the biochemical information covered by this course into meaningful knowledge with an emphasis on the functional significance and regulatory mechanisms governing metabolism.

Student Learning Outcomes:

Program Outcomes Met by This Course:

1. Apply knowledge of the basic structures and fundamental processes of life at the molecular, cellular and organismal levels.
2. Apply knowledge of the structure and function of the human body to health issues.
3. Apply the scientific process for conducting laboratory and diagnostic experiments, testing hypothesis, interpreting data, and communicating results (Laboratory component–CHEM451).
4. Demonstrate problem solving and critical thinking skills.

Course Requirements and Percent of Grade:

SAS Grading Scale Grades will be assigned as follows:

A = 89.5% or better

B+ = 84.5- 89.4%

B = 79.5 – 84.4%

C+ = 74.5 - 79.4%

C = 69.5 - 74.4%

D = 64.5 - 69.4%

Exams:

There will be **two exams** for the course: Each exam is **46%** of the grade and **4 quizzes** which will account for **2%** each.

Course Materials:

Text: Champe, P.C. and Harvey, R. Lippincott's Illustrated Reviews: Biochemistry. 6th Edition. 2014. Lippincott Williams & Wilkins, Philadelphia. (ISBN: 0-397-51091-8).

Supplementary Readings/Resources: Lecture notes and lectures posted on Sakai.

PLAGIARISM POLICY: ACADEMIC INTEGRITY

The St. George's University Student Manual (2008/2009, page 45) states as follows:

“Plagiarism is regarded as a cardinal offence in academia because it constitutes theft of the work of someone else which is then purported as the original work of the plagiarist”

Plagiarism also includes the unintentional copying or false accreditation of work - so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

Students with Disabilities and Special Challenges

A student who has a disability or a special challenge that requires some modification of the seating or other class requirements must contact the course director so that appropriate arrangements can be made.

Disclaimer: It is your responsibility to read and understand the policies, laws, rules, and procedures that while they could affect your grade for a course, have not been specifically outlined in the course syllabus. These are contained in the St. George's University Student Manual.



Department of Nursing and Allied Health Sciences

GENERAL COURSE INFORMATION

Course Code and Title: NURS 105: Nursing Practicum I
Number of Credits: 2
Days and Times: Mondays, Tuesday, Thursdays and Fridays 7am – 2:30pm & Wednesdays 1pm – 7 pm
Semester and Year: Summer 2021
Classroom Location: Male & Female Surgical and Medical wards
Pre-requisite(s): Fundamentals of Nursing NURS 100

Course Lecturer Name(s): Jennifer Solomon and Salisha Phillip
Course Director Name: Jennifer Solomon

Course Lecturer(s) Contact Information: jsolomon@sgu.edu ext 3758
Course Director Contact Information: NA

Course Lecturer(s) Office Hours: By appointment
Course Director Office Hours: By appointment

Course Lecturer(s) Office Location: Leeward building
Course Director Office Location: Leeward building

Course Support: Ms. Rocksann Burriss – ext. 3755 rburriss01@sgu.edu and Ms. Kandis Roberts – ext. 3769 krobert3@sgu.edu

Course Management tool: To learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

COURSE CURRICULUM INFORMATION

Course Description:

This course focuses on the fundamentals of nursing focusing on health assessment and basic skill development from an evidence base. Students will also practice oral medication administration. The evidence-based knowledge gained forms a basis for clinical reasoning, critical thinking and decision making as students develop their skills. Students will be introduced to the role of the professional nurse. The nursing process will be used as a problem-solving tool for formulating care in the medical area. Learning experiences are provided in the hospital setting.

Course Objectives:

1. To demonstrate professional nursing competency under supervision in a number of diverse settings caring critical thinking and therapeutic nursing interventions with individual families and communities.

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2. To synthesize the appropriate knowledge and skills to practice under supervision collaboratively with other health care professionals.
3. To demonstrate how evidence -based practice and nursing theories affect the decision-making process.
4. To apply various techniques for effective communication with clients, peers and other health care profession.

Student Learning Outcomes:

1. To demonstrate professional nursing competency under supervision in a number of diverse settings utilizing caring critical thinking and therapeutic nursing interventions with individual families and communities.
2. To synthesize the appropriate knowledge and skills to practice under supervision collaboratively with other health care professionals.
3. To demonstrate how evidence-based practice and nursing theorists affect the decision making process.
4. To demonstrate professional caring into practice thus exhibiting patient- centered care decision making process.
5. To apply the various techniques for effective communication with clients peers and other health care professionals.
6. To demonstrate commitment to the advancement of the profession by ongoing development and self-reflection.

Program Outcomes Met By This Course:

NPO 1. Integrates nursing and health care knowledge, skills and attitudes to provide safe, ethical and effective patient-centred nursing care, representing the patients' preferences, values, and needs within the context of their families, communities and the health care delivery system.

NPO 2. Demonstrate a level of professionalism that is congruent with the inherent values, ethics and behaviors of the discipline of nursing.

NPO 3. Engages the patient to understand the link between health promotion strategies and health outcomes across the life cycle.

NPO 4. Utilizes evidence-based practices to guide planning, implementation, monitoring and evaluation of health education and health promotion activities.

NPO 6. Utilizes appropriate communication and interpersonal skills to engage in, develop and disengage from therapeutic relationships with individuals and groups.

NPO 7. Utilizes critical thinking skills and professional judgment to inform decision-making in the delivery of health care.

NPO 8. Identifies one's own professional development needs by engaging in reflective practice in the

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context of lifelong learning and to participate in processes to shape the health care delivery systems and advance the profession.

SAS Grading Scale: Grades will be assigned as follows:

- A = 89.5% or better
- B+ = 84.5 - 89.4%
- B = 79.5 - 84.4%
- C+ = 74.5 - 79.4%
- C = 69.5 - 74.4%
- D = 64.5 - 69.4%
- F = 65% or less

Course Materials:

Text: **Evolve Sherpath - Clinical Block Summer 2021 Course ID: 163909_jsolomon94_1004**

Supplementary Readings/Resources: See SAKAI

Course Grading Requirement:

Students will be evaluated in the clinical areas through observation. Additional assessments are as follows

- Clinical learning rubric in clinical assessment 40% DUE 16/7/21
- Nursing Care plan (one) 10% DUE 16/7/21
- Written reflection using Gibbs model (one) 10% DUE 12/7/21
- Quizzes (4) 30% DUE SEE Sherpath schedule
- Punctuality and Professionalism 10% Ongoing

Course Requirements:

A full day will be spent in the clinical area putting theoretical learning into practice. Each group will be assigned a clinical area in which to observe and practice. For details of the clinical policies please see the Handbook in resources in Sakai. Assessment of the objectives will be carried out at the end of the day and it is expected that each student participate through pre-reading and exposure on the ward.

Ongoing assessment throughout the term will be carried out by the preceptors and must be passed in order to fulfill the requirements of Practicum One

Course Schedule:

Week one emphasis
Safety & Hand washing

Discuss methods to reduce physical hazards and the transmission of pathogens.
Identify relevant nursing diagnoses associated with risks to safety.
Demonstrate proper hand washing technique.

Pain

Identify factors that may affect an individual's pain experience
Obtain a complete pain assessment using appropriate interview and physical assessment skills
Develop nursing diagnoses then correctly identify pain problems and demonstrate the relationship between pain and other areas of human function
Demonstrate the correct use of non-pharmacologic pain relief measures

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Administer analgesic agent's safely to produce the desired level of analgesia without causing undesirable side effects

Vitals

Accurately assess body temperature, pulse, respirations, oxygen saturation, and blood pressure. Explain the physiology of normal regulation of blood pressure, pulse, oxygen saturation, and respirations.

Identify when to take vital signs

Demonstrate how to perform vital signs.

Accurately record and report vital sign measurements.

Week two emphasis

Skin Integrity and wound care

Discuss the processes involved in wound healing

Identify factors that affect wound healing

Identify patient at risk for wound healing

Identify patients at risk for pressure ulcer development

Provide nursing interventions to prevent pressure ulcers

Implement appropriate dressing changes for different kinds of wounds

Health Assessment and physical examination

Describe interview techniques used to enhance communication during history taking.

Make environmental preparations before an examination.

Identify data to collect from the nursing history before an examination.

Demonstrate the techniques used with each physical assessment skill.

Discuss ways to incorporate health promotion and health teaching into the examination. nursing care.

Describe physical measurements made in assessing each body system.

Identify self-screening examinations commonly performed by patients.

Week Four emphasis

Communication

Describe aspects of critical thinking that are important to the communication process.

Describe the basic elements of the communication process.

Identify significant features and therapeutic outcomes of nurse-patient helping relationships.

Discuss effective communication techniques for older patients.

Identify patient health states that contribute to impaired communication..

Culture

Describe social and cultural influences in health, illness, and caring patterns.

Describe steps toward developing cultural competence.

Identify major components of cultural assessment.

Use cultural assessment to identify significant values, beliefs, and practices critical to nursing care

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of individuals experiencing life transitions.

Evaluation

Weekly patient discussion with care plan documentation.

Weekly experience reflection with preceptor – discussion.

POLICY INFORMATION

Plagiarism policy: Academic Integrity

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“Plagiarism is regarded as a cardinal offense in academia because it constitutes theft of the work of someone else, which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated” (p. 48).

Plagiarism also includes the unintentional copying or false accreditation of work, so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

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Attendance Policy:

Attendance Requirement

The St. George's University Student Manual (2019/2020) states as follows:

“Students are expected to attend all classes and or clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students’ absence may adversely affect their academic status as specified in the grading policy. If absence from individual classes, examinations, and activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. A particular course may define additional policies regarding specific attendance or participation” (p. 9).

Examination Attendance

The St. George's University Student Manual (2019/2020) states as follows:

“All matriculated students are expected to attend all assigned academic activities for each course currently registered. Medical excuses will be based on self-reporting by students. Students who feel they are too sick to take an examination or other required activity on a specific day must submit the online SAS medical excuse, which is available on Carepage. Students are only allowed two such excuses a year. Upon consultation with the Director of University Health Service, the third excuse will result in a mandatory medical leave of absence. The policies regarding make-up examinations are at the option of the Course Director” (p.46).

For additional specific examination policies and procedures, refer to the St. George's University Student Manual (2019/2020), pages 31 through 37.

Student Accessibility and Accommodation Services Policy:

The St. George's University Student Manual (2019/2020) states as follows:

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Assignment Submission Procedure:

These are outlined in the orientation and syllabus

Classroom/Online Etiquette Procedure:

NA

Policy/Procedure Related to the Department:

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Department of Nursing and Allied Health Sciences

GENERAL COURSE INFORMATION

Course Code and Title: NURS 321 Clinical Block Placement I
Number of Credits: 2
Days and Times: 17 May – 11 June [Mondays, Tuesday, Thursdays & Fridays (7 AM – 2:30 PM) Wednesdays (1:00 PM – 7:00 PM)]
Semester and Year: Summer 2021
Classroom Location: General Hospital – Male & Female Medical and Male & Female Surgical wards
Pre-requisite(s): Fundamentals of Nursing NURS 100

Course Lecturer Name(s): Jennifer Solomon and Salisha Phillip
Course Director Name: Jennifer Solomon

Course Lecturer(s) Contact Information: SPhill10@sgu.edu ext. 3021
Course Director Contact Information: JSolomon@sgu.edu ext. 3758

Course Lecturer(s) Office Hours: By appointment
Course Director Office Hours: By appointment

Course Lecturer(s) Office Location: Leeward building
Course Director Office Location: Leeward building

Course Support: Ms. Rocksann Burris – ext. 3755 rburris01@sgu.edu and Ms. Kandis Roberts – ext. 3769 krobert3@sgu.edu

Course Management tool: To learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

COURSE CURRICULUM INFORMATION

Course Description:

The course is designed to offer opportunities to students to consolidate experiences in the clinical area. This course focuses on the clinical aspects of care and the domains of nursing practice. The student will complete rotation through various areas including specialities such as ophthalmology and outpatient clinics as well generalized medical or surgical areas.

Course Objectives:

1. Utilize the basic concepts of nursing healthcare delivery, critical thinking, ethical decision making, nursing process, health education, health promotion, and health assessment in clinical practice.
2. Synthesize theoretical and evidence based practice in the clinical area.

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3. Use appropriate assessment tools and techniques as the basis for delivering nursing care.
4. Prioritize client's care dependent on the client's needs using the nursing process.
5. Document accurately within the client's records.

Student Learning Outcomes:

1. To demonstrate professional nursing competency under supervision in a number of diverse settings utilizing caring critical thinking and therapeutic nursing interventions with individual families and communities.
2. To synthesize the appropriate knowledge and skills to practice under supervision collaboratively with other health care professionals.
3. To demonstrate how evidence-based practice and nursing theorists affect the decision making process.
4. To demonstrate professional caring into practice thus exhibiting patient- centered care decision making process.
5. To apply the various techniques for effective communication with clients peers and other health care professionals.
6. To demonstrate commitment to the advancement of the profession by ongoing development and self-reflection.

Program Outcomes Met By This Course:

NPO 1. Integrates nursing and health care knowledge, skills and attitudes to provide safe, ethical and effective patient-centred nursing care, representing the patients' preferences, values, and needs within the context of their families, communities and the health care delivery system.

NPO 2. Demonstrate a level of professionalism that is congruent with the inherent values, ethics and behaviors of the discipline of nursing.

NPO 3. Engages the patient to understand the link between health promotion strategies and health outcomes across the life cycle.

NPO 6. Utilizes appropriate communication and interpersonal skills to engage in, develop and disengage from therapeutic relationships with individuals and groups.

NPO 7. Utilizes critical thinking skills and professional judgment to inform decision-making in the delivery of health care

NPO 8. Identifies one's own professional development needs by engaging in reflective practice in the context of lifelong learning and to participate in processes to shape the health care delivery systems and advance the profession.

SAS Grading Scale: Grades will be assigned as follows:

- A = 89.5% or better
- B+ = 84.5 - 89.4%
- B = 79.5 - 84.4%
- C+ = 74.5 - 79.4%

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- C = 69.5 - 74.4%
- D = 64.5 - 69.4%
- F = 65% or less

Course Materials:

Text: **Evolve Sherpath - Clinical Block Summer 2021 Course ID: 163909_jsolomon94_1004**

Supplementary Readings/Resources: Click or tap here to enter text.

Course Grading Requirement:

Students will be evaluated in the clinical areas through observation. Additional assessments are as follows

- Clinical learning rubric in clinical assessment 40% DUE 9/7/21
- Nursing Care plan (one) 10% DUE 9/7/21
- Written reflection using Gibbs model (one) 10% DUE 5/7/21
- Quizzes (4) 30% DUE SEE Sherpath schedule
- Punctuality and Professionalism 10% Ongoing

Course Requirements:

A full day will be spent in the clinical area putting theoretical learning into practice. Each group will be assigned a clinical area in which to observe and practice. For details of the clinical policies please see the Handbook in resources in Sakai. Assessment of the objectives will be carried out at the end of the day and it is expected that each student participate through pre-reading and exposure on the ward.

Ongoing assessment throughout the term will be carried out by the preceptors and must be passed in order to fulfill the requirements of Practicum One

Course Schedule:

Emphasis Week one
Medication administration

- Discuss the nurse's role and responsibilities in medication administration.
- Describe factors to consider when choosing routes of medication administration.
- Calculate prescribed medication doses correctly.
- Correctly and safely prepare and administer medications.

Hygiene

Assess adequacy of hygiene practices and self-care behaviors using appropriate interview and physical assessment skills.

Assess the condition of the patient's skin oral cavity hair and nails using appropriate interview and physical assessment skills.

Demonstrate techniques for assisting patient with hygiene measure including those used when administering various types of baths and that used in cleaning each part of the body

Plan implement and evaluate nursing care for common problems of the skin and mucous membranes

Documentation

Describe methods for interdisciplinary communication within the health care team

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Discuss legal guidelines for documentation.
Identify ways to maintain confidentiality of electronic and written records.
Describe five quality guidelines for documentation and reporting.
Describe the purpose and content of a change-of-shift report.
Explain when to take and how to verify telephone orders.
Identify ways to reduce data entry errors.

Emphasis week two

Urination

Identify nursing diagnoses appropriate for patients with alterations in urinary elimination.
Obtain urine specimens correctly.
Discuss nursing measures to reduce urinary tract infection..

Elimination

Assess a patient's elimination pattern.
List nursing diagnoses related to alterations in elimination.
Describe nursing implications for common diagnostic examinations of the gastrointestinal tract.
List nursing interventions that promote normal elimination.
Discuss nursing care measures required for patients with a bowel diversion.

Emphasis week three

Activity

Develop nursing diagnoses that correctly identify mobility problems amenable to nursing interventions.
Use safe patient handling and moment techniques and equipment when positioning moving lifting and ambulating patients.
Plan implement and evaluate nursing care related to select nursing diagnoses involving mobility problems.

Emphasis week four

Care Planning

Explain the process of data collection.
Differentiate between subjective and objective data.
Discuss the process of conducting a patient-centered interview.
Describe the components of a nursing history.
Conduct a nursing assessment.

Diagnosis

Discuss the purposes of using nursing diagnosis in practice.
Describe the steps of the nursing diagnostic process.
Identify nursing diagnoses from a nursing assessment.

Explain the relationship of planning to assessment and nursing diagnosis.
Discuss criteria used in priority setting.

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Develop a plan of care from a nursing assessment.
Discuss the differences between nurse-initiated, physician-initiated, and collaborative interventions.
Discuss the process of selecting nursing interventions during planning.
Explain the relationship of implementation to the nursing diagnostic process..

Explain the relationship among goals of care, expected outcomes, and evaluative measures when evaluating nursing care.

Evaluation

Weekly patient discussion with care plan documentation.
Weekly experience reflection with preceptor – discussion.

POLICY INFORMATION

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Plagiarism also includes the unintentional copying or false accreditation of work, so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

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Attendance Policy:

Attendance Requirement

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Examination Attendance

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“All matriculated students are expected to attend all assigned academic activities for each course currently registered. Medical excuses will be based on self-reporting by students. Students who feel they are too sick to take an examination or other required activity on a specific day must submit the online SAS medical excuse, which is available on Carepage. Students are only allowed two such excuses a year. Upon consultation with the Director of University Health Service, the third excuse will result in a mandatory medical leave of absence. The policies regarding make-up examinations are at the option of the Course Director” (p.46).

For additional specific examination policies and procedures, refer to the St. George's University Student Manual (2019/2020), pages 31 through 37.

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Assignment Submission Procedure:

These are outlined in the orientation and syllabus

Classroom/Online Etiquette Procedure:

NA

Policy/Procedure Related to the Department:

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Department of **Nursing and Allied Health Sciences**

GENERAL COURSE INFORMATION

Course Code and Title: NURS 406 Professional Development and Transition to Practice
Number of Credits: 5
Days and Times: 31 May to 16th July Mondays, Tuesday, Thursdays and Fridays (7:00 AM – 2:30 PM Wednesdays (1:00 PM – 7:00 PM)
Semester and Year: Summer 2021
Classroom Location: Online via Zoom and Clinical Areas
Pre-requisite(s): NURS 326

Course Lecturer Name(s): Jennifer Solomon
Course Director Name: Jennifer Solomon

Course Lecturer(s) Contact Information: Jsolomon@sgu.edu or ext. 3758
Course Director Contact Information: JSolomon@sgu.edu ext. 3758

Course Lecturer(s) Office Hours: By appointment
Course Director Office Hours: JSolomon@sgu.edu ext. 3758

Course Lecturer(s) Office Location: Leeward hall
Course Director Office Location: Leeward hall

Course Support: Ms. Rocksann Burris ext. 3755 rburris01@sgu.edu and Ms. Kandis Roberts krobert3@sgu.edu ext. 3769

Course Management tool: To learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

COURSE CURRICULUM INFORMATION

Course Description:

This course will draw upon knowledge from both first- and second-year courses and introduce professional development concepts aimed at student transition into the practice environment. As such, students are required to consider, value and interpret practice through critical self-appraisal and reflection on practice. In addition, perspectives of transition to professional practice will be discussed and analysed. Concepts include, work expectations, critical review of the role of evidence for practice, scope of practice, reflection on practice, "caring for self", the role of the nurse in health care, developing a professional portfolio and strategies to support lifelong learning.

Course Objectives:

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1. Identify one's own professional development needs by engaging in reflective practice.
2. Create a personal development plan for reflective practice and lifelong learning which takes into account personal professional and organizational needs including professional nursing organizations.
3. List personal and professional skills related to prospective careers.
4. Analyze strategies to facilitate the transition to professional practice for beginning Registered Nurses.

Student Learning Outcomes:

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

1. Identify one's own professional development needs by engaging in reflective practice.
2. Create a personal development plan for reflective practice and lifelong learning which considers personal, professional and organizational needs including professional nursing organizations.
3. List personal and professional skills related to prospective careers.
4. Analyze strategies to facilitate the transition to professional practice for beginning Registered Nurses.

Program Outcomes Met By This Course:

NPO 1. Integrates nursing and health care knowledge, skills and attitudes to provide safe, ethical and effective patient centered nursing care, representing the patients' preferences, values, and needs within the context of their families, communities and the health care delivery system. (Nursing practice)

NPO 2. Demonstrate a level of professionalism that is congruent with the inherent values, ethics and behaviors of the discipline of nursing. (Professional conduct)

NPO 3. Engages the patient to understand the link between health promotion strategies and health outcomes across the life cycle. (Health promotion and maintenance of wellness)

NPO 4. Utilizes evidence-based practices to guide planning, implementation, monitoring and evaluation of health education and health promotion activities. (Caring interventions)

NPO 5. Apply leadership concepts, skills, and decision making in the provision of high quality nursing care, healthcare team coordination, and the oversight and accountability for care delivery in a variety of settings. (Nursing leadership and Management)

NPO 6. Utilizes appropriate communication and interpersonal skills to engage in, develop and disengage from therapeutic relationships with individuals and groups. (Communication)

NPO 7. Utilizes critical thinking skills and professional judgment to inform decision-making in the delivery of health care. (Clinical decision making and intervention)

NPO 8. Identifies one's own professional development needs by engaging in reflective practice in the context of lifelong learning and to participate in processes to shape the health care delivery systems and advance the profession. (Professional reflection and visioning)

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 B = 79.5 - 84.4%
 C+ = 74.5 - 79.4%
 C = 69.5 - 74.4%
 D = 64.5 - 69.4%
 F = 65% or less

Course Materials:

Text: Fundamentals of Nursing Potter 10th Edition
 COURSE ID 163909_jsolomon94_1003

Supplementary Readings/Resources: Additional resources will be placed on Sakai

Course Grading Requirement:

C

Presentations and Video	20%
Engagement and Forums	10%
Essay	15%
Sherpath assignments	10%
Mock RENR	15%
Literature review	10%
CV and Linkin portfolio	10%
Clinical learning objectives	10%

Course Requirements:

As this course is delivered online and attendance is required a suitable laptop and connectivity is expected. The second portion of the course is delivered in the clinical area, students must be aware of the clinical policies.

Course Schedule:

[Click or tap here to enter text.](#)

Day	Topic	Objectives	Activities And	Assignment
31 May 9:30 – 5:30	Overview of course, objectives and assignments	List the elements of the course and identify assignments List components for		Chapter 6 caring for yourself assignment Due 1 st June Create clinical learning objectives Due 12 th June

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	Professional Role Development	successful personal development	Create your own definition of nursing in small groups	Essay - Identify a nursing theorist which relates to personal and professional development write 500 – 800 words. Due 12 th June
	Quality improvement project overview.	Articulate the objectives and how to complete the assignment		
1 st June	Explore differing models and frameworks for reflective practice and professional development.	Appreciate the use of reflective practice Improve reflective writing	Read the two articles in resources. Using them as reference discuss the role of reflective writing in your education. Submit to forum 1 – 12 th June	In order to have you reflect upon your first clinical experience, please post on forum a photograph/picture/meme along with a summary describing how the photo/picture/meme relates to your clinical experience and learning for that day. Focus on metaphors, feelings, and how the experience reminded you of a prior experience. Have fun with this and be creative! 4 th June 6pm Presentations preparation (7 th and 10 th June)
2 nd June	BLS			
4 th June	Discuss the challenges and strategies for successful role transition from student to registered nurse Discuss theory practice gap in relation to transition to an RN	List the challenges that face new RNs List strategies that can assist. Critique theories and international research on the topic	Read the two articles in resources. Using them as reference discuss the challenges of transition, and what tools you can use. Submit to forum 2 – 12 th June Create a literature review table (Challenges of transition). Submit to Sakai 4 th June	Post your learning objectives for the clinical portion. Identify gaps in your clinical checklists and strategies for achieving these via discussion board post and reply to two other posts 2 – 12 th June Class work preparation.

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	Alumni guest speaker			
7 June	Discuss how to develop professionally through interviewing, a professional portfolio and networking.	Explore social media and professional portfolios Discuss ways to increase your ability to network	Research and create two interview questions to the forum. State what each one is assessing ie teamwork, professionalism, character, work ethic etc.. 3 – 12 June	Create a LinkedIn profile Create a CV Due the 4th June Referencing the articles and your own literature search. Present on transition challenges offering solutions Group 1 workload 2 lack of knowledge 3 expectations 4 working atmosphere 5 personal attitude
7 th June Discuss theory practice gap in relation to transition to an RN	Discuss the role of Professional nursing organizations for the individual List the key concepts of executing a successful interview.	Describe the elements that are included in a QIP List elements of project management for QIP		Chapter 1 trends in nursing and professional organizations reading QIP preparation
8th June	Discuss the impact of evidence based practice, standards and guidelines that inform practice			Reading assignment EBP EAQ - EBP Present five quality improvement projects Due 9 th June – time TBA
8 th June	Identify elements of the new role and scope of practice, including	Define assignment-delegation-supervision and teamwork		Chapter 21 leadership skills reading assignments Quiz EAQ

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	assignment, delegation, supervision and teamwork.	Identify specific considerations to nursing on delegation		
9 th June The Concept of Career and Lifelong Learning awareness of personal learning style	Discuss differing career pathways and further education tracks or requirements.	Compare hospital or traditional nursing roles to others	On forum discuss what domains or competencies the modern nurse should have?	Skit/upload a tiktok/video to describe lifelong learning. Using your groups. Class work preparation
10 th June	Discuss models and fame works for learning	Critique differing types of learning styles	Identify your learning style Complete learning style questionnaire (in class activity in resources Kolb questionnaire)	Present on Domains or competencies
11 th June RENr preparation and Orientation	Discuss the requirements both organizationally and academically for RENr	Create a learning and revision plan Create strategies for success Understand the elements of the RENr		Mock RENr

Assignment	Date due	Method of submission
Forums x5	1st – 12th June	Forum
Meme	4th June	Live in class
Group Presentations – transition	7th June	Live Presentation
CV & LinkedIn	4th June	Sakai
Literature Table	4th June	Sakai
EAQ Leadership & Assessment	7 th & 8 th June	Sherpath
Tiktok/Video 'LLL'	9 th June	Share during class
Group Presentations – Domains	10 th June	Live Presentation
Group Presentation Quality Improvement Project	9 th June	Live Presentation
RENr mock	11 th June	Examsoft
Clinical learning objectives	12 th June	Sakai

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Essay	12 June	Turnitin Sakai
Reading Assignments x4	Caring 1 st Nursing practice & Profession 4 th EBP 7 th Leadership 8 th	Sherpath

Guidance on assignments

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Assignment Submission Procedure:

Writing Goals and Objectives: The purpose of this activity is to focus you on particular performance outcomes as you learn the practice of nursing in a global setting. An objective is a statement explaining what you specifically want to learn and do this semester. It should include how to you intend to accomplish it and by when.

By completion of this activity, each student will:

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- Produce a list of 3-5 main performance goals with subsets of objectives for your global experience and special project

Directions

- Goals and objectives are composed of an active verb with objective outcomes. The goal statement tends to be more general, such as:

I will integrate multidisciplinary communication with staff, faculty and instructor.

- As a subset of objectives to this goal statement you might include:
 - a. I will chart with 100% accuracy
 - b. I will be open to coaching and feedback about my performance;
 - c. I will report changes in the patient's conditions immediately;
 - d. I will seek out experienced resources before performing any procedure I am unsure of or don't know;
 - e. I will seek clarification on any orders, medications, lab values, policies I am unsure of;
 - f. I will develop a weekly update of detailed notes and keep it in a log;

Goals and objectives are not the same as the course objectives, yet you may use the course objectives as guidelines for writing your goals and objectives. What you are writing are your personal objectives for your preceptorship. Therefore, they should be written in the 1st person.

It is suggested that you write 3-5 main goals related to general nursing practice such as goals around safety, communication, leadership, ethics, culture, etc. Then break them down into observable or measurable behaviors as in direction #1.

SUBJECT: Will always be "I" will...

CHOOSE AN ACTIVE VERB

Prioritize	Safely and correctly	Administer	Differentiate
Deliver care	Integrate	Select	
Report to	Arrange	Formulate	
Communicate with	Assemble	Set up	
Offer alternatives	Analyze	Implement	
Assess and record	Calculate	Apply	
Write or develop	Calculate	Develop	

If you use a verb like recognize, accompany it with an action verb like recognize and respond, recognize and report.

Time frame: In some cases you want to accomplish the objective by the end of the semester.

In other cases, you want to complete it during week one or some other specific time frame.

Accountability: How are these objectives to be measured? The next part of your statement should indicate either the percentage of time you are going to be doing this or the way someone else could measure your performance.

So, here are some examples:

(I) will safely and correctly administer all assigned IV push medications on my patient, with my faculty in attendance (the word "all" means 100%)

(I) will prioritize patient care needs using a triage type system, and verify correct prioritization with my faculty, until she has checked me off in this area

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(I) will include patients in planning their own care by listening to their needs and incorporating suggestions into the plan of care at least 50% of the time.

RESEARCH and QUALITY IMPROVEMENT APPLICATION ACTIVITY

PURPOSE:

The purpose of this two part activity is to help the student understand the relationship between research and practice and identify how research can be applied to global health and the Course. This will be a group activity. The class will be divided into 4 groups of 4. Each group will select one quality improvement topic to collaborate on.

OBJECTIVES:

By completion of this activity, the student will:

1. Brainstorm an issue that is a clinical research problem for the assigned topic area. You can look at the issue from multiple perspectives.
2. Conduct a literature search on a topic that relates to their assigned research topic, selecting (at least) four research articles on that topic.
3. Complete the quality improvement template
4. Explore and reflect why the QIP is required
5. Present the research findings on a poster, PowerPoint, Photo Journal or other type of presentation to your classmates

DIRECTIONS:

1. Using appropriate databases and other resources, narrow the research to a certain area. Check with the nursing school librarian. The research topic must apply to your specific clinical improvement project.
2. From your literature search, your group will select four research articles published within the last 5 years, on which to build this activity. Complete the QIP template in resources
3. Prepare a presentation according to the criteria that follow showing the application of research findings and your quality improvement project.

GRADING OF RESEARCH AND QUALITY IMPROVEMENT APPLICATION ACTIVITY

Selection of four research articles:

The group has done a literature search and has selected four research articles, published within the last 5 years, on a topic related to an improvement in nursing or the clinical setting. Be prepared to describe when and how you found this research article.

Evaluation and understanding of research:

The group's summary and presentation provides evidence that they understand the research methods and findings sufficiently to explain them in their own words to others.

The group will submit via turn it their quality improvement project template.

Presentation

The presentation is clearly presented and demonstrates the group's efforts to make the information understandable and interesting to the audience.

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Writing Your Resume

An important step in getting your first or a new nursing position is developing a resume that accurately depicts your skills and experience but also sets you apart from all the other applicants. Your global service learning experience will help you stand out. Start thinking about how the classes and your international project should be highlighted in your resume. Your resume will be due at the end of the course and it will be gently critiqued.

Additionally, you should begin compiling the following information:

- Contact information
- Employment experience
- Skills
- Extracurricular Activities, Awards
- Relevant Coursework and Internships
- Publications and Research
- References

Forum postings

Posted messages should be significant – helping the discussion move forward. There are a variety of ways to do this, including (generally in some combination over the course of the week or within a posting):

- Providing concrete examples, perhaps from your own experience
- Describing possible consequences or implications
- Challenging something that has been posted in the discussion – perhaps by playing “devil’s advocate”
- Posing a clarifying question
- Suggesting a different perspective or interpretation
- Pulling in related information from other sources – books, articles, websites, other courses, etc.

Your participation score for a given week will be based on the number and quality of messages you post to that week’s discussion. Participation will be evaluated in terms of quality as well as quantity, based on the following scale:

Criteria

Full Marks 15 - 20%- Good - 2-3 postings distributed throughout the week. Responsiveness to discussion topics and demonstration of knowledge and understanding from assigned readings. Readings were understood and incorporated into discussion as it relates to topic. Two or more responses add significantly to the discussions (e.g. identifying important relationships, offering a fresh perspective or critique of a point; offers supporting evidence).

Partial Marks Fair 8 – 15% - 2-3 postings; postings not distributed throughout the week. 1-2 postings; Readings were understood and incorporated into discussion as it relates to topic. At least one posting adds significantly to the discussion.

Minimal Marks Poor 1 – 8% 1 – 2 postings; postings not distributed throughout the week. Little or no use made of readings. Postings have questionable relationships to discussion

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questions and/or readings; they are non-substantive. Postings do little to move discussion forward

- Postings should be evenly distributed during the discussion period (not concentrated all on one day or at the beginning and/or end of the period).
- Postings should be a minimum of one short paragraph and a maximum of two paragraphs.
- Avoid postings that are limited to 'I agree' or 'great idea', etc. If you agree (or disagree) with a posting, then say why you agree by supporting your statement with concepts from the readings or by bringing in a related example or experience.
- Address the questions as much as possible (don't let the discussion stray).
- Try to use quotes from the articles that support your postings. Include page numbers when you do that.
- Use proper netiquette (proper language, typing, etc.)

Examples of non-substantive messages

– “Good idea for assessing whether people know what to do”.

– “I have to agree. Having a SME or experienced designer look at the work is of tremendous help. It is so easy to assume things, and leave out steps here and there. It is certainly not as easy as it looks, and I can see where this process makes for a much better learning experience for the participants.”

These messages does little to move the discussion forward.

– “I disagree with your definition of soft technology. Can you please tell me how you came to that conclusion?”

This message doesn't expand on his question by saying why he disagrees.

Excellent examples

– “I believe that learning is more effective if we allow learners to create their own behavioral objectives. Like Driscoll, I believe that "Learners are not empty vessels waiting to be filled, but rather active organisms seeking meaning." Bearing in mind that we are all products of our own experiences; be it socioeconomic, gender specific, cultural and/or family related, I firmly believe that the learning needs of learners should always be the force which guides the instructional development process and the crafting of meaningful behavioral objectives. Therefore, differentiated instruction is of paramount importance if we are to provide meaningful learning environments, which emulate challenge, variety, creativity and innovation. Consequently, a synergistic blend between Bloom's Taxonomy and Gardner's Theory of Multiple Intelligences must be found if learning is to be truly effective.”

“I agree with the statement "learning is generally less effective when only the learners create the objectives", However, I would not wish to lump ALL learners into this category, whether

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they are intellectually gifted or not. I believe that in much instruction the student is an integral part of defining the objective, especially in skills training, or efficiency of operations. If a company has been producing X product in the same manner for an extended time, it is reasonable to believe that new employees have been trained in that "tried and proven" method of production. However, as times and markets change, production techniques must also change. The student (employee) who is being taught the same "old" method would invariably attempt to modify the technique to increase efficiency of the production. If the student is stifled by being held only to the objectives stated in the training, no improvement will be made and the company will ultimately suffer."

Excellent message because the student is disagreeing and making a contrary argument, based on an evaluation of the idea expressed in a previous message.

Literature table

Research Tables and Synthesis Tables are useful tools for organizing and analyzing your research as you assemble your literature review. Use a Research table to compile the main info you need about the items you find in your research it can develop a snapshot of what the research shows about the topic of your research question and assess its value.

Requirements

Use peer reviewed articles less than 5 years old. Include the search terms and sites used to gather the research and articles. Make some conclusion or synthesis of the literature found.

Classroom/Online Etiquette Procedure:

Click or tap here to enter text.

Policy/Procedure Related to the Department:

Click or tap here to enter text.

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St. George's University
Grenada, West Indies

Introduction to Psychopathology

PSYC 411

May 2021

PSYC 411 Course Syllabus

Version of May 2021

This version will supersede any previous editions of this document. The university reserves the right to change or amend the rules and regulations at any time. The new rules and regulations will apply to all students registered in the Course.

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Section A: Course Information

Course Description

Introduction to Psychopathology (PSYC 411) is a 2-credit course presented over 3 weeks as part of the discipline-based Preclinical Science curriculum of St George's University School of Medicine, Grenada. It is designed to provide a fundamental basis for understanding psychopathology. It is a central component of the Charter Foundation Program.

The course reviews the major psychiatric disorders defined in the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). The salient diagnostic features of these disorders are highlighted. Major theories of the etiology of mental illness are reviewed, and neurobiological correlates of abnormal behavior are emphasized. Both psychotherapeutic and biological treatment options for mental illness are covered. Clinical cases and clinical videos illustrating psychopathology are utilized to enhance learning.

Goals and Objectives

The Introduction to Psychopathology course embraces the mission of the Doctor of Medicine Program of St George's University School of Medicine and the 4-year outcome objectives pertaining to knowledge, clinical skills, and professional attitudes. These are listed in Appendix A.

The Introduction to Psychopathology course specifically addresses objectives pertaining to knowledge: 1ai, 1aiii, 1b, 1c, and 1d. Furthermore, the Introduction to Psychopathology course prepares students to meet the AAMC's Entering Medical Student Core Competency pertaining to Human Behavior: "Applies knowledge of the self, others, and social systems to solve problems related to the psychological, socio-cultural, and biological factors that influence health and well-being."

Overall Course Objective

The overall course objectives for Introduction to Psychopathology are for students to be able to:

1. Enumerate the symptoms of the major psychiatric disorders and apply the DSM-5 diagnostic criteria to clinical scenarios to differentially diagnose psychiatric diseases.
2. Describe the psychological/environmental and neurobiological contributions to psychiatric illness.
3. Specify the major biological and psychological treatment approaches for each of the major mental disorders.

Lecture Objectives

The specific lecture objectives are included in Appendix B.

Faculty, Staff, and Contact Information

Course Leadership and Administrative Team

PSYC 411	Email Address
Dr. Randall Waechter Course Director	rwachte@sgu.edu
Dr. Vineeta Naraine Course Lecturer	vnaraine1@sgu.edu@sgu.edu
Dr. Brenda Kirkby Course Lecturer	bkirkby@sgu.edu
Dr. Arlette Herry Course Lecturer	aherry1@sgu.edu

Course Material

Copyright

Copyright 2021 St. George's University. All rights reserved.

All course material, whether in print or online, is protected by copyright. Course materials, in part or in their entirety, may not be copied, distributed, or published in any form, printed, electronic or otherwise.

As an exception, students enrolled in the Course are permitted to make electronic or print copies of all downloadable files for personal and classroom use only, provided that no alterations to the documents are made and that the copyright statement is maintained in all copies.

Lecture recordings are explicitly excluded from download and creating copies of these recordings by students and other users is strictly prohibited.

Course Website

The Introduction to Psychopathology course offers a website through Sakai, St. George's University's learning management system. This site is used for COMMUNICATION (including Announcements), COURSE TOOLS (including Syllabus, Resources, Tests & Quizzes, Gradebook), and a link to Lecture Recordings.

To login, go to [myCampus Secure Login \(Carenage\)](#), type in your user ID and password, and click on MyCourses.

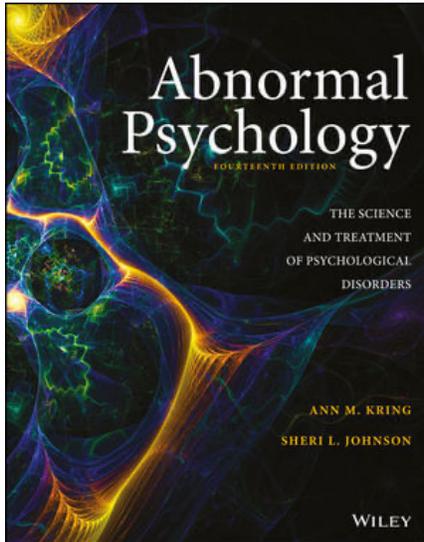
Electronic Resources

Distribution of course material is in electronic format. In accordance with Committee for Technology-based Teaching and Learning (CTTL) recommendation, students are provided with unlocked PDF files, which may be annotated for personal use. This format facilitates active learning, as it allows highlighting and annotations, using a variety of platforms, operating systems, and annotation software. Copyright restrictions regarding

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the duplication of materials apply (see copyright statement above). The Resources folder contains multiple subfolders in which students will find course material.

Recommended Textbook



Abnormal Psychology: The Science and Treatment of Psychological Disorders (2018, 14th Edition)

by Ann M. Kring and Sheri L. Johnson.

Required Electronic Equipment

Laptop

Students need a personal laptop as specified by SGU Examination Services. It is the responsibility of each student to ensure his/her laptop is in full working condition, as specified by Examination Services, and ensure that it is up to date and equipped for the SGU wireless network at all times.

Clickers

An Audience Response System (TurningPoint) is used as a formative assessment method during live sessions. Students are recommended to respond to questions using the web browser (tppoll.com) or via the TurningPoint app for smart phones to fully participate in live sessions.

Components of the Course

Lectures

Lectures are an essential component of the PSYC411 Course. They are designed to provide students with an outline of what they are expected to know, to prioritize important aspects of course content, to clarify complex material, and to make relevant connections to clinical contexts. Most lectures will focus more on difficult concepts than on self-explanatory facts.

Many of the course sessions are delivered through asynchronous on-line recordings of full-length lectures. The delivery of asynchronous on-line lectures allows students greater flexibility for when and where the lectures are viewed and promotes self-directed learning. Content from all lectures, whether live Zoom sessions or asynchronous on-line recordings, are testable material.

The posted lecture slides may not be comprehensive and do not replace the need to read textbooks. It is an important learning exercise for students to read textbooks and glean valuable information related to course objectives. Lecture slides are not intended to be used in isolation, but rather as a complement to the lecturer's narrative.

Each lecture contains formative assessments, usually in the format of clicker questions. These questions are not included in the lecture notes and will not be posted on Sakai.

Directed Learning Activities (DLAs)

Prerequisite knowledge or simple content may be presented online as short videos. If used, these videos will be available via the course management site and can be viewed at any time. The videos are designed to focus on key topics that are prerequisite knowledge or where it is beneficial to review core knowledge before its application in lecture. Content from DLAs are examinable.

Interactive Multiple-Choice Question (IMCQ) Sessions

Interactive Multiple-Choice Question (IMCQ) sessions aim to enhance a student's test-taking skills and increase their exposure to USMLE-style-multiple-choice single-best-answer questions, which is the standard style for all electronic examinations at St George's University School of Medicine. These sessions strive to improve students' approach to answering MCQs and emphasize the link between questions and course objectives. As a learning tool, IMCQs provide students with valuable formative feedback enabling them to modify their approach to learning course content and to identify weaknesses that require remediation.

There are 3 non-credit IMCQs during the semester. They comprise approximately 15 questions. Each question is presented for 90 seconds. The faculty member then thoroughly debriefs the question with an emphasis on the cognitive processes, logic, and rationale used to answer the questions. Debriefing focuses on the salient points within each question that lead to the correct answer choice and on the process of eliminating distracters as viable answer choices.

Questions used during IMCQ sessions are posted with the answer key on the Course Sakai site after delivery.

Graded ExamSoft Quizzes & Non-graded Sakai Practice Quizzes

Graded ExamSoft (E-Soft) Quizzes

There will be 3 graded E-Soft quizzes, which will be released and retracted at designated dates and times, typically with a week in between to complete the quiz. Students should refer to the official schedule of course activities. E-Soft quizzes are open-book and taken anytime and at any venue within the available window that the quiz is available to complete.

Content: Each E-Soft quiz contains 10 questions. The content of E-Soft quizzes is similar in focus and difficulty as Exam questions. E-Soft quizzes may contain cumulative

questions.

E-Soft Quiz Duration: Students have 20 minutes to answer the questions.

Scoring of E-Soft Quiz: Students must complete the quiz and upload the results **before** the specified deadline to earn the 2 points associated with each quiz (2 points x 3 quizzes = 6 possible points). Accuracy is not considered. **Quizzes will not be re-opened after the deadline.**

Non-graded Sakai Practice Quizzes

Practice quizzes will be provided on Sakai for each block of material. These questions will be available as a .pdf document. These do not count for credit and can be reviewed as many times as desired. They can be completed at any time or any venue.

Written (Electronic) Examinations

Written electronic examinations are in multiple-choice-single-best-answer format, following the guidelines of the National Board of Medical Examiners (NBME). The NBME offers the United States Medical Licensing Examination (USMLE), a three-step examination for medical licensure in the United States, which is sponsored by the Federation of State Medical Boards (FSMB) and NBME.

Style of Administration: Exams are administered by computer using ExamSoft with ExamMonitor (proctoring software) enabled. Students must ensure that their laptops conform to the minimum specifications required by ExamSoft.

Question Format: The vast majority of questions are in clinical vignette format. Most questions are higher-order questions rather than first-order questions. The time allocation per question is 90 seconds.

Protocol: Detailed information about exam protocol is electronically circulated before each exam. The information should be carefully reviewed upon circulation (see Appendix

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C for the typical protocol).

Special Consideration for On-line Examinations: With the distance-learning platform, students must pay very close attention to the rules and regulations pertaining to on-line exams.

1. All students must review the Guide to ExamID and ExamMonitor as published on the course site and complete the Mock Examination in Exemplify as released by Examination Services.
2. For all online proctored examinations, the published scores (and course grades) are preliminary at the time of publication; they are retractable if a subsequent investigation demonstrates a failure to comply with examination regulations or proctoring requirements.
3. Depending on the infraction, the examination score may be nullified, an academic penalty imposed, and/or disciplinary action pursued.
4. Any technical problems, prior to, during, or after completing the examination, need to be documented and reported immediately to TellExaminationServices@sgu.edu and support@examsoft.com (phone: 866-429-8889)

Quantity: There are 2 exams in this Course. These are held during weeks 3 and 4 and are each 90 minutes in duration. Each exam has 60 multiple-choice questions for a total of 120 points.

Content: Exam questions derive from the list of lecture objectives. The focus of exam material is on important concepts and clinically/medically relevant facts discussed in lecture. Emphasis is placed on knowledge regarding the diagnosis, etiology and treatment of mental illness.

Cumulative Nature of Exams: The second examination has a cumulative component. The approximate breakdown of cumulative questions on this exam is between 10-20%.

Exam Duration: Each exam is 90 minutes.

Exam Mastery Reports: Mastery Reports detailing exam strengths/weaknesses based on topic (e.g., anxiety disorders) and question type (e.g., diagnosis vs. treatment-related) are emailed to students through ExamSoft.

Pre-Examination Question Review by Faculty

Prior to each examination, the Course Director reviews all test items with teaching faculty to help ensure the validity and high quality of all questions.

Post-Examination Review by Faculty

After each examination, the Course Director and teaching faculty review the overall examination statistics, the statistics for each item, and student feedback on each question. A decision is then made about the validity and reliability of each examination item and the overall examination.

Note: For quality control across all courses offered by St George's University School of Medicine, the Assessments Committee regularly monitors and reviews all examination items used in School of Medicine examinations.

Course Assessments & Assessment Points

Course assessments may be summative (counting towards points in the Gradebook), formative (giving feedback to students to optimize their learning strategies with minimal or no points counted toward the Gradebook), or both. Formative assessments in this Course include in-class clicker questions, Sakai practice quizzes, and ExamSoft quizzes. Summative assessments in this Course include written (electronic) examinations.

The total assessment points that can be earned in the Course are listed in the table below:

Assessment	# Points	Point Breakdown	Approx. % of Course
Exam 1	60	60 MCQs x 1 point	47.6%

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Exam 2	60	60 MCQs x 1 point	47.6%
E-Soft quizzes	6	2 points per E-Soft quiz	4.8%
Totals	126		100%

Grades are awarded based on percentage scores. The following table is intended to help students determine their letter grade based on raw points earned in the PSYC411 Course:

Raw Points	Percentage (%)	Letter Grade
126	100	A+
113-125	89.5-99.99	A
107-112	84.5-89.49	B+
100-106	79.5-84.49	B
94-99	74.5-79.49	C+
88-93	69.5-74.49	C
82-87	64.5-69.49	D
≤81	<64.5	F

Disclaimer: To protect against any errors in the calculation of the equivalent raw points above, grades will be determined purely based on the officially-published grading scale (in percentage scores) in the Sakai gradebook listed in the scoring and grading policy (see below).

Student Support

Office Hours

Zoom Office hours by the teaching faculty are offered each week as standing office hours or by appointment. The available hours (open or appointments) for the different faculty members will be posted weekly on Sakai. All Zoom appointments should be made directly with the faculty member. Students should contact individual faculty members by email to make appointments (unless otherwise specified).

Directed Self-Study/Group Study

In addition to studying independently, students are encouraged to form their own Zoom study groups of 3 to 5 active members. Study groups are recommended to meet about once a week to discuss difficult course concepts. Active participation in these group study discussions may be useful to students' successful understanding, application, and mastery of course material.

Course and Instructor Critique

Students are expected to view all lectures and complete other related academic activities as defined for each Course by the Course Director. One such academic activity is participation in the St. George's University Course and Instructor Critique Program. Student participation in the evaluation process is mandatory.

Students enrolled in a course are expected to complete all required faculty and course evaluations. Failure to complete all required course and instructor critiques will mean that students did not fulfill all course requirements. The Critiques Coordinator will notify students when evaluation periods have begun and send periodic reminders to ensure that critiques are submitted within the allotted time frame.

The Importance of Evaluation: Evaluation is a necessary component of any course. Just as students anticipate a fair and accurate evaluation of their performance and achievement in a course, SGU requires that faculty and course evaluations be completed each term. Continual evaluation and assessment of faculty ensures that the instructional program not only remains consistent, but also improves to meet the needs and expectations of students.

Feedback: At the beginning of each term, Course Directors address the class and summarize the results of the course and instructor critiques from the previous term. In this summary, Course Directors report areas that students rated highly and areas that received the lowest ratings. For areas receiving low ratings, the Course Director details

what changes were made to address students' concerns, thus ensuring that course evaluation influences course design and delivery.

Section B: St. George's University SOM Policies and Procedures

Policies applicable to the Course are published in the following documents:

1. Course Syllabus
2. [Student Manual](#) (General and School of Medicine sections, including the Honor Code)

If there is a conflict between policies and procedures detailed in Section B of this syllabus and those detailed in the Student Manual, then the policies and procedures in the current Student Manual supersede.

For rules and regulations governing the Charter Foundation Program, please refer to the Student Manual:

<https://www.sgu.edu/studentmanual/school-of-medicine/charter-foundation-program/>

Section C: Appendices

Appendix A: Goals and Objectives of the MD Program

The Introduction to Psychopathology course embraces the mission of the Doctor of Medicine Program of St George's University School of Medicine:

Mission

St. George's University School of Medicine provides a diverse, multicultural and international environment that empowers students to learn the medical knowledge,

clinical skills and professional behaviors to participate in healthcare delivery to people across the world.

MD Program Objectives

1. Medical Knowledge

- a) Apply the multidisciplinary body of basic sciences to clinical analysis and problem solving using:
 - b) The knowledge of normal structure, function, physiology and metabolism at the levels of the whole body, organ systems, cells, organelles and specific biomolecules including embryology, aging, growth and development.
 - c) The principles of normal homeostasis including molecular and cellular mechanisms.
 - d) The etiology, pathogenesis, structural and molecular alterations as they relate to the signs, symptoms, laboratory results, imaging investigations and causes of common and important diseases.
 - e) Incorporate the impact of factors including aging, psychological, cultural, environmental, genetic, nutritional, social, economic, religious and developmental on health and disease of patients, as well as their impact on families and caregivers.
 - f) Utilize the important pharmacological and non-pharmacological therapies available for the prevention and treatment of disease based on cellular and molecular mechanisms of action and clinical effects. Identify and explain factors that govern therapeutic interventions such as clinical and legal risks, benefits, cost assessments, age and gender.
 - g) Apply the theories and principles that govern ethical decision-making in the management of patients.
 - h) Evaluate and apply clinical and translational research to the care of patient populations.

2. Clinical Skills

- a) Communicate effectively with patients, their families and members of the health care team.

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- b) Obtain a comprehensive and/or focused medical history on patients of all categories.
 - c) Perform physical and mental status examinations on patients of all categories appropriate to the patient's condition.
 - d) Document pertinent patient health information in a concise, complete and responsible way.
 - e) Select appropriate investigations and interpret the results for common and important diseases and conditions.
 - f) Recognize and communicate common and important abnormal clinical findings.
 - g) Develop a problem list and differential diagnosis based on the history, physical findings and initial investigations.
 - h) Apply effective problem-solving strategies to patient care.
 - i) Perform routine and basic medical procedures.
 - j) Provide patient education for all ages regarding health problems and health maintenance.
 - k) Identify individuals at risk for disease and select appropriate preventive measures.
 - l) Recognize life threatening emergencies and initiate appropriate primary intervention.
 - m) Outline the management plan for patients under the following categories of care: preventive, acute, chronic, emergency, end of life, continuing and rehabilitative.
 - n) Continually reevaluate management plans based on the progress of the patient's condition and appraisal of current scientific evidence and medical information.
3. Professional Behavior
- a) Establish rapport and exhibit compassion for patients and families and respect their privacy, dignity and confidentiality.

- b) Demonstrate honesty, respect and integrity in interacting with patients and their families, colleagues, faculty and other members of the health care team.
- c) Be responsible in tasks dealing with patient care, faculty and colleagues including health-care documentation.
- d) Demonstrate sensitivity to issues related to culture, race, age, gender, religion, sexual orientation and disability in the delivery of health care.
- e) Demonstrate a commitment to high professional and ethical standards.
- f) React appropriately to difficult situations involving conflicts, non-adherence and ethical dilemmas.
- g) Demonstrate a commitment to independent and lifelong learning, including evaluating research in healthcare.
- h) Demonstrate the willingness to be an effective team member and team leader in the delivery of health care.
- i) Recognize one's own limitations in knowledge, skills and attitudes and the need for asking for additional consultation.
- j) Participate in activities to improve the quality of medical education, including evaluations of courses and clerkships.

Appendix B: Learning Objectives per Lecture

Through consistent and proactive participation during the activities and exercises presented in this Course, a student should be able to:

Overview of Psychopathology

- Define the terms "psychopathology" and "mental disorder".
- Describe the array of symptoms displayed by mentally ill people.
- Distinguish between internal and external triggers of symptoms of mental illness.
- List justifications for in-patient hospitalization rather than out-patient treatment.
- Describe the difference in the work performed by a psychiatrist, clinical psychologist, and psychiatric social worker.

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- List obstacles to treatment faced by mentally ill people.
- Identify the three major theories of mental illness that have dominated history and describe the treatment approach derived from each theory.
- State the importance of Benjamin Rush in the field of Abnormal Psychology.
- Define "deinstitutionalization" and state the reason for it.
- Describe the historical importance of *chlorpromazine*.
- Describe the current conceptualization of mental illness, including the biopsychosocial model of illness.

Theories of Behavior I

- Describe the major principles underlying the biological (organic) perspective of human behavior.
- Describe the major principles underlying the cognitive perspective of human behavior.
- Identify the cognitive distortions of overgeneralization, excessive responsibility, arbitrary inference, selective abstraction, catastrophizing, and dichotomous thinking.
- Describe the major principles underlying the Behavioral perspective of human behavior.
- Identify each component of a classical conditioning scenario including identifying the unconditioned stimulus and response, the neutral stimulus, and the conditioned stimulus and response.
- Distinguish between stimulus generalization and stimulus discrimination in classical conditioning.
- Describe the phases of classical conditioning, including acquisition, extinction, spontaneous recovery, re-extinction, and re-learning.
- Distinguish between positive and negative reinforcement and positive and negative punishment.

Theories of Behavior II

- Explain how timing, frequency, and consistency influence the effectiveness of operant conditioning
- Describe the phenomenon of learned helplessness and explain its relationship to depression.
- Describe the phenomenon of shaping (successive approximations).
- Distinguish between punishment and operant extinction.
- Distinguish between continuous and intermittent schedules of operant conditioning, including the four types of intermittent schedules.
- Describe the major advantage of using a ratio schedule compared to an interval schedule.
- Describe the effect of a variable schedule on the extinction process
- Define vicarious learning.
- Describe the major principles underlying the psychodynamic perspective of human behavior.
- Differentiate the actions of the id, ego, and superego.
- Identify the defence mechanism that best explains a given behavior.

Treatment Techniques

- Define psychotherapy.
- Describe the technique of cognitive therapy.
- Describe the techniques of behavioral therapy.
- Distinguish between the techniques of systematic desensitization, exposure therapy, and flooding.
- Describe aversion therapy, including covert sensitization.
- Describe the general features of psychodynamic therapy.
- Distinguish between transference and countertransference, both positive and negative.
- Describe techniques for accessing the unconscious and give the rationale for revealing the contents of the unconscious.

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- Describe the goals and process of traditional group therapy, family therapy, and marital therapy.
- Identify the 4 major classes of psychotropics and the conditions that they are typically used to treat
- Identify the major neurotransmitter(s) affected by each major class of medication
- Identify the common side effects of each major class of medication
- List reasons for medication non-compliance by mentally ill patients
- Describe the general timeframe for psychotropics to have a therapeutic effect

Trauma/Stressor-related Disorders

- Describe the basic features of the DSM-5 psychiatric classification system
- Apply the following diagnostic specifiers when diagnosing a patient: "Provisional" and, "Unspecified"
- Describe the typical psychological, behavioral and physiological changes associated with stress.
- Identify the physiological basis underlying a stress reaction.
- Describe treatment approaches for stress-related problems.
- Explain the Yerkes-Dodson law.
- List the essential diagnostic criteria for each Trauma/Stressor-related Disorder (Posttraumatic Stress Disorder [PTSD], Acute Stress Disorder [ASD], Adjustment Disorder, Reactive Attachment Disorder [RAD], and Disinhibited Social Engagement Disorder [DSED]).
- Clinically differentiate between the Trauma/Stressor-related disorders (including any subtypes) based on clinical presentation.
- Identify the causes of the Trauma/Stressor-related disorders and list treatment strategies.
- Describe how RAD differs from DSED.

Mood Disorders

- List the essential diagnostic criteria for each Depressive Disorder (Major Depressive Disorder, Persistent Depressive Disorder, Premenstrual Dysphoric Disorder, and Disruptive Mood Dysregulation Disorder)
- Clinically differentiate between the depressive disorders (including subtypes) based on clinical presentation
- Describe the monoamine hypothesis of depressive disorders
- List the biological and psychological treatment options for depression
- List the essential diagnostic criteria for each bipolar disorder (Bipolar I, Bipolar II, and Cyclothymia)
- Clinically differentiate between the bipolar disorders based on clinical presentation
- Describe the monoamine hypothesis of bipolar disorders.
- List the pharmacological treatment options for each bipolar disorder

Anxiety Disorders and Obsessive-Compulsive & Related Disorders

- State the role of the HPA axis in the development of anxiety.
- Describe the role of classical conditioning in the development of anxiety.
- Describe the cognitive-behavioral approach for the treatment of anxiety.
- List the 2 common types of medications used to treat anxiety disorders.
- List the essential diagnostic criteria for each Anxiety Disorder (Panic Disorder, Agoraphobia, Specific Phobia with subtypes, Social Anxiety Disorder, Generalized Anxiety Disorder, Separation Anxiety Disorder, and Selective Mutism).
- Clinically differentiate between the Anxiety Disorders (including subtypes) based on clinical presentations.
- Describe a panic attack.
- Describe the biological and psychological treatments for each Anxiety Disorder.
- List the essential diagnostic criteria for Obsessive-Compulsive Disorder (OCD).
- State the difference between an obsession and a compulsion and specify the purpose of the Y-BOCS.

PSYC 411 Course Syllabus

- Describe specific brain abnormalities seen in OCD.
- Describe the specific biological and psychological treatments for OCD.
- Clinically differentiate between OCD and OCD-Related disorders, including Body Dysmorphic (covered in a Disorder, Hoarding Disorder, Trichotillomania and Excoriation Disorder).
- Distinguish Body Dysmorphic Disorder from normal vanity.
- Describe the treatments for each of the OCD-Related disorders.

Eating Disorders

- State the essential diagnostic criteria of the Eating Disorders (Anorexia Nervosa, Bulimia Nervosa and Binge-Eating disorder), including any subtypes.
- Clinically differentiate between the Eating Disorders (including any subtypes).
- Identify the two main components of a "binge" and define "purge" as per the DSM-5.
- Describe the general epidemiology of eating disorders (e.g., gender, prevalence, age of onset).
- Describe cultural and biological factors that may contribute to the development of Eating Disorders.
- Describe the treatment approaches, including stating when hospitalization is necessary, for eating disorders.
- Differentiate between Anorexia, Bulimia and Binge-Eating disorder in their initiation of treatment and state the general outcome for Eating Disorders.
- List the potential medical consequences of Eating Disorders.

Somatic Symptom & Related Disorders and Dissociative Disorders

- Identify the essential diagnostic criteria for each Somatic Symptom & Related disorder (Somatic Symptom Disorder, Conversion Disorder, Illness Anxiety Disorder, and Factitious Disorder)
- Differentiate between the Somatic Symptom & Related Disorders based on clinical symptomatology

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- State the cause of Somatic Symptom & Related disorder
- Describe the major treatment approach for Somatic Symptom & Related Disorders
- Describe the two types of Factitious Disorder
- Identify 5 indicators of factitious illnesses
- Describe the character profile of somebody with a Factitious Disorder
- Define malingering (and malingering by proxy) and contrast these conditions with Factitious disorders
- Describe the concept of dissociation
- List the essential diagnostic criteria for each dissociative disorder (Dissociative Amnesia with and without dissociative Fugue, Dissociative Identity and Depersonalization/Derealization disorder) and differentiate them based on clinical symptomatology
- Distinguish between the 3 types of memory loss associated with Dissociative Amnesia
- Distinguish between an organically based amnesia and Dissociative Amnesia based on results from a Mental Status Exam
- Describe a fugue state
- Describe the difference between depersonalization and derealization
- State the general cause of dissociative disorders
- Describe the major treatment approach to dissociative disorders

Schizophrenia Spectrum & Other Psychotic Disorders

- List the 5 psychotic domain symptoms and specify which are "core" domain symptoms.
- Clinically differentiate between types of delusions (e.g., a delusion of control versus a delusion of reference) based on clinical presentation.
- Differentiate between the types of loose associations (e.g., word salad versus clang association) based on clinical presentation.

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- Distinguish between a positive and negative symptom and give an example of each.
- List the essential diagnostic criteria for schizophrenia.
- Define the "Active Phase" of schizophrenia.
- List Bleuler's 4 As of schizophrenia and contrast those symptoms with Schneider's first-rank symptoms.
- Describe the epidemiology, associated features, onset, Course and outcome of schizophrenia.
- Describe the dopamine hypothesis of schizophrenia and state how it relates to both positive and negative symptoms.
- List the common neurostructural, neurofunctional, and neuropsychological problems seen in schizophrenia.
- Describe the general etiology of schizophrenia.
- List the common medications used to treat psychotic disorders and distinguish between traditional and atypical antipsychotics in their mechanisms of action, clinical benefits and side effects.
- Differentiate between the types of extrapyramidal symptoms (parkinsonism, akathisia, tardive dyskinesia, dystonia and neuroleptic malignant syndrome) based on clinical symptoms and time of onset after initiation of antipsychotic medication.
- Describe the role of ECT and psychotherapy in the treatment of schizophrenia.
- State the current status of the prefrontal lobotomy.
- State the essential diagnostic criteria for the Schizophrenia Spectrum Disorders (Schizophreniform Disorder, Brief Psychotic Disorder, Delusional Disorder and Schizoaffective Disorder), including any subtypes.
- Clinically differentiate between the Schizophrenia Spectrum Disorders (including subtypes) based on clinical presentation (including the time course of symptoms).
- Distinguish between a bizarre and a non-bizarre delusion.
- Differentiate Schizoaffective Disorder from a mood disorder (e.g., Major Depressive Disorder with Psychotic Features).

- Describe the variant of delusional disorder in which a delusion appears to be "socially-transmissible" and how it may be treated.

Disruptive, Impulse-Control, and Conduct Disorders

- List the essential diagnostic features for the Disruptive, Impulse-Control & Conduct Disorders (i.e., Oppositional Defiant Disorder [ODD], Conduct Disorder [CD], Intermittent Explosive Disorder [IED], Pyromania and Kleptomania).
- Distinguish between ODD, CD, IED, ASPD, Disruptive Mood Dysregulation Disorder and Adjustment Disorder with Disturbance of Conduct.
- Describe the two subtypes of CD.
- Describe the etiology, epidemiology, psychosocial risk factors, onset, Course, treatment and outcome of ODD and CD.
- Differentiate Pyromania vs. arson and Kleptomania vs. shoplifting.
- Describe the typical sequence of events involved in an impulsive act and describe the neurotransmitters involved.
- List the treatment approaches for impulse control problems.

Personality Disorders

- Define a personality disorder.
- State the general cause of personality disorders and describe the general onset and Course of personality disorders.
- Identify and describe the 3 major clusters of Personality Disorders.
- State the essential diagnostic criteria for the DSM-5 Personality Disorders and differentiate between them based on clinical symptomatology.
- Describe the general treatment approach to Personality Disorders and state the specific treatments (when given) for individual personality disorders.
- Describe the general outcome of Personality Disorders and explain the difference in outcome (and the reason for it) for Dependent personality and Avoidant personality disorders compared to other Personality Disorders.
- State the difference between Antisocial Personality Disorder (ASPD) and a "psychopath".

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- State the health hazard associated with Obsessive-Compulsive Personality disorder.
- Identify the psychiatric diagnoses most associated with Borderline, Histrionic and Schizotypal personality disorders.
- Differentiate the following personality disorders from other DSM-5 mental disorders:
 - Paranoid Personality Disorder from Delusional Disorder, Persecutory type.
 - Schizotypal Personality Disorder from Schizophrenia.
 - Narcissistic Personality Disorder from Bipolar I Disorder and Delusional Disorder, Grandiose type.
 - Avoidant Personality Disorder from Social Anxiety Disorder.
 - Obsessive-Compulsive Personality Disorder from Obsessive-Compulsive Disorder.

Neurodevelopmental Disorders

- List the essential diagnostic symptoms of the Neurodevelopmental Disorders (Attention-Deficit/Hyperactivity Disorder [ADHD], Autism Spectrum Disorder [ASD], Intellectual Disability [ID], Specific Learning Disorder [SLD], and Tourette's Disorder), including any subtypes of the disorders
- List the general causes and management strategies of persons with ID
- Describe the development, course, and management of SLD
- Apply the essential criteria to diagnose and differentiate language disorder, speech-sound disorder, social (pragmatic) communication disorder, and childhood-onset fluency disorder
- Identify the etiology and neuropathology of Tourette's Disorder and describe its management
- Classify a tic as motor or vocal and as simple or complex
- State the etiology and neuropathology of ASD
- Describe the epidemiology, onset, course, treatment and outcome of ASD
- Describe the general conceptualization (including etiology/neuropathology) of ADHD

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- Describe the epidemiology, onset, course (including commonly associated cognitive and behavioral features), and outcome for ADHD
- List the psychological and pharmacological treatments available for ADHD, including side effects and contraindications of medications

Substance-Related Disorders

- Describe the epidemiology and associated features of substance users.
- Identify the neurocircuitry underlying the reinforcing effects of substances.
- List 5 drug-related brain changes that contribute to drug addiction.
- List the genetic and psychosocial risk factors of drug addiction.
- Describe the pharmacological and psychological treatment approaches to drug addiction.
- Describe the role of support groups in the treatment of drug addiction.
- List the key symptoms of "Substance Use" disorder.
- Define intoxication and withdrawal (as per the DSM-5) and describe, in general, the withdrawal syndrome.
- Describe the general symptoms of intoxication and withdrawal for each of the 4 major classes of substances (*i.e., sedatives, stimulants, hallucinogens and related substances, and the opioids*).
- List the specific treatments for drug addiction for each class of drug.
- Identify the specific drug that causes a cluster of behavioral symptoms in a clinical scenario.
- List associated cognitive effects of excessive use of sedatives.
- Explain the concept of cross-tolerance of sedatives and apply the concept in clinical scenarios.
- Describe the delirium tremens and state its cause.
- Describe the process of aversion therapy using *disulfiram* for alcohol dependence.
- Define formication and list drug-related conditions that most likely produces this symptom.

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- Distinguish between the effects of classic hallucinogens (LSD), cannabis (e.g., marijuana), and the dissociative anesthetics (e.g., phencyclidine [PCP]).
- List the health risks of opioid use, overdose, and withdrawal.
- Differentiate between methadone and buprenorphine as replacement therapy medications.
- Describe treatment of acute opioid overdose.

Neurocognitive Disorders

- List the essential diagnostic criteria for a delirium.
- Identify common causes of a delirium.
- Describe the general underlying neuropathology of a delirium.
- Describe the general Course of delirium, including the time course, resolution of symptoms, and prognosis.
- Distinguish between the medications used to treat most deliriums compared to treatment of a sedative-withdrawal delirium.
- List common non-pharmacological methods to manage a delirium.
- List the essential features of an amnesia and differentiate it from a dissociative amnesia.
- Describe the difference between a retrograde and anterograde amnesia.
- Describe the typical memory deficits seen in amnesia, including the temporal gradient.
- Describe short-term memory (capacity and duration) and state how a typical amnesic would perform on short-term memory tests.
- Name the brain structure most implicated in amnesia.
- Define the term confabulation.
- State the cause of Korsakoff's amnesia and how to treat it.
- Describe the general treatment of patients with amnesia.
- Define dementia.
- Differentiate the role of the left hemisphere in language functions compared to the right hemisphere

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- Identify the major language functions assessed in an aphasia examination
- Differentiate Wernicke's aphasia from Broca's aphasia based on the pattern of language impairment
- Identify the region of the brain that is damaged in Broca's aphasia and Wernicke's aphasia
- Describe the typical profile of a patient with dementia regarding age of onset, Course, and prognosis.
- Differentiate between delirium, amnesia and dementia based on clinical symptoms.
- State the diagnostic criteria for Alzheimer's Dementia (AD)
- Describe the epidemiology and general clinical progression of AD.
- Describe the neuropathology of AD (i.e., common neuroanatomical, neurofunctional, neurochemical and histopathological changes).
- Compare the onset and progress of early-onset AD compared to late-onset AD.
- State the prognostic value of APOE genetic testing.
- List the two major types of medications FDA-approved for AD and describe their difference in action, side effects, efficacy, and target patient population.
- Describe non-pharmacological interventions to help manage AD patients.
- Describe the major clinical differences between AD and other dementias (Vascular, Frontotemporal [e.g., Pick's], Parkinson's, Lewy Body, Huntington's, and Creutzfeldt-Jakob) based on key differences in symptoms and/or patient history.
- State the DSM-5 definition of a neurocognitive disorder (NCD) and list the 3 possible DSM-5 diagnoses related to NCDs.
- State the difference between a "Major" NCD and a "Mild" NCD, as per DSM-5.
- State how an amnesic disorder and a dementia would be diagnosed using DSM-5.

Appendix C: Online Examination Protocol

Banned Items:

Items banned from regular, on-site examinations, are also banned during online examinations. This includes, but is not limited to:

- a) Cellular phones
- b) Other electronic or communication devices
- c) Wrist watches
- d) Hoodies
- e) Scrap paper, pens, pencils or other writing devices
- f) Food or beverages
- g) Water bottles

Additional items banned from online examinations are:

- a) Headphones, earphones, headsets
- b) Ear plugs
- c) White boards – you will be able to use the "Notes" function within ExamSoft instead

Requirements for Online Proctoring

- The entire face of the examinee must be visible at all times. Hair long enough to cover the eyes and ears must be pulled back. Hats or other headwear are prohibited.
- The eyes of the examinee must be visible at all times. Reading glasses with clear lenses are acceptable, but tinted glasses or sunglasses are prohibited.
- The examination room must be consistently well-lit, with a plain background, avoiding dark shadows across the examinee's face.
- **Students may NOT take bathroom breaks.**
- **Students may NOT verbalize during the examination.**

- **Students MUST complete the Exam ID process and activate Exam Monitor.**
- **Students MUST be sure that their Exam ID and Exam Monitor files are uploaded at the end of the exam.**

DOWNLOAD: The examination download window is 48 hours before the date and time of the examination.

EXAMINATION DAY:

CHECK-IN TIME: The check-in time is the time posted by the Course as the time of the examination.

START: Students may start the examination immediately after completing EXAMID and activating Exam Monitor

Students should check in at the CHECK-IN TIME. If you check in more than 30 minutes after the CHECK-IN TIME, you may not be able to take the exam, and you will be flagged for exam violation.

Password Announcement: The examination password will be disseminated via Course Sakai announcement and email notification, approximately 15 minutes prior to CHECK-IN TIME.

Once you have started the examination, you won't be able to take a bathroom break until you finish the examination.

REMINDERS ABOUT EXAM PREREQUISITES:

1. Students must ensure that their laptop meets the minimum system requirements:
 - a) Webcam
 - b) Microphone (no headphones)

PSYC 411 Course Syllabus

- c) 2 GB free HD space
- d) 4 GB RAM
- e) 2 Mbps upload speed
- f) CPU equivalent to Intel i3 2+ GHz
- g) MAC OS (10.13, 10.14, 10.15)
- h) Windows 10 (Version 1809 or 1903)

2. Students must update to the latest version of Exemplify, i.e. version 2.5. Once Exemplify is launched, students will be prompted to update to this version. Please follow the on-screen steps to do so.

How to check your Exemplify version number:

<https://examsoft.force.com/etcommunity/s/article/Exemplify-Checking-your-Exemplify-Version-Number>

Permission set up for ExamMonitor and ExamID

<https://examsoft.force.com/etcommunity/s/article/ExamID-and-ExamMonitor-Permission-Setup-for-MAC-users>

<https://examsoft.force.com/etcommunity/s/article/ExamID-and-ExamMonitor-Permission-Setup-for-Windows-users>

Support and Additional Resources:

- Examination Services will be available to provide assistance for exams. Students who encounter technical issues prior to and especially during an exam should send an email to TellExaminationServices@squ.edu.
- ExamSoft 24-hour support remains in effect. Students can reach out directly via email (support@examsoft.com) or via the online chat.
- ExamID and ExamMonitor overview video
- <https://examsoft.force.com/emcommunity/s/article/ExamID-and-ExamMonitor-from-the-Student-Perspective>

PSYC 411 Course Syllabus

For a complete list of rules and regulations governing examinations (and any updates), please consult the Student Manual

SCHOOL OF ARTS AND SCIENCES SUMMER 2021 REGISTRATION SCHEDULE Charter Foundation Program
May 5, 2021- July 29, 2021

SYLLABI
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Crse Prefix	Crse No.	Course Title	Day(s)	Start	End	Instructor	CRN
BIOL	321	Molecular biology	May 5th- May 25th (Monday - Friday)	11:00 AM	12:15 PM	Felicia Ikolo	31259
PSYC	411	Introduction to Psychopathology	May 5th- May 25th (Monday - Friday)	12:30 PM	1:45 PM	Randall Waechter	31276
BIOL	460	Human Anatomy	May 26th - June 29th (Monday - Friday)	11:00 AM 3:30 PM	12:15 PM 5:30 PM	Ramesh Rao /Elio Plevneshi	31261
CHEM	450	Biochemistry	May 26th - June 29th (Monday - Friday)	12:30 PM	1:45 PM	Kafi James	31260
BIOL	441	Physiology	June 30th - July 27th (Monday - Friday)	11:00 AM 3:30 PM	12:15 PM 5:30 PM	Kesava Mandalaneni	31277

YES

YES

YES

YES

YES

PMSCE (FTM) Exam 401 **CRN 31278** Dr Rachael George/ Dr Georbrina Hargrove

SCHOOL OF ARTS AND SCIENCES

SUMMER 2021 REGISTRATION SCHEDULE

Crse Prefix	Crse No.	Cr	Course Title	Day(s)	Start	End	Instructor	CRN	Comment
SPED	301	3	Assistive Technology	TBA	TBA	TBA	Sasha Pierre	31272	
SPED	300	3	Issues in Special Education	TBA	TBA	TBA	Judy Ann Auld	31273	
SPED	400	6	Field Experience/Practicum in Special Education	TBA	TBA	TBA	Judy Ann Auld & Queen Annie	31274	

SYLLABI
SAVED

YES

YES

YES

SCHOOL OF ARTS AND SCIENCES

SUMMER 2021 REGISTRATION SCHEDULE

Crse Prefix	Crse No.	Cr	Course Title	Dates	Start	End	Instructor	CRN
NURS	105	2	Nursing Practicum I	June 14th – July 16th	7:00 AM	2:30 PM	Jennifer Solomon	31271
NURS	320	1	Gerontological Nursing Practicum	May 17th – 28th	7:00 AM – 1:00 PM OR 8:00 AM – 2:00 PM		Jennifer Solomon	
NURS	321	2	Clinical Block Placement I	May 17th – June 11th	7:00 AM	2:30 PM	Jennifer Solomon	31270
NURS	406	5	Professional Development Transition to Practice	May 17th – July 16th	7:00 AM	2:30 PM	Jennifer Solomon	31218

SYLLABI
SAVED

YES



YES

YES

SPED 300 Issues in Special Education



St George's University

School of Arts and Sciences

Department of Humanities & Social Sciences

GENERAL COURSE INFORMATION

Course Code and Title: SPED 300 Issues in Special Education

Number of Credits: 3

Days and Times: Mon. to Thurs. 6:00 – 8:00 PM

Semester and Year: Summer 2021

Classroom Location: ONLINE

Pre-requisite(s):

Course Lecturer Name(s): Ms. Judy-Ann Auld (473) 405-2777

Course Director Name: Ms. Judy-Ann Auld

Course Lecturer(s) Contact Information: JAuld@sgu.edu

Course Director Contact Information: JAuld@sgu.edu

Course Director Office Hours: Online/phone by appointment

Course Director Office Location: TBA

Course Support: Nikisha S. Thomas NSThomas@sgu.edu and Nichole Phillips
nphilli2@sgu.edu

Course Management tool: To learn to use Sakai, the Course management tool, access the link
<https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

COURSE CURRICULUM INFORMATION

Course Description

In this course, students will explore critical issues in SEN such as Inclusion, Equality, and Entitlement. Students will further develop skills in critical analysis of current issues like discipline, identification and classification, national assessments, curriculum standards and look at how those issues impact the individual and their learning environment. They will attain knowledge of the collaborative and consultative roles of special education teachers in the integration of learners with Special Needs into the general curriculum and classroom. In addition, they will become equipped with the confidence and competence to challenge their own beliefs and values as well as those of others and be ready to become advocates for change.

Objectives:

By the end of this course students will be able to:

- Explore critical issues in SEN such as Inclusion, Equality, and Entitlement.
- Develop skills in critical analysis of current issues in SEN and look at how those issues impact the individual and their learning environment.
- Attain knowledge of the collaborative and consultative roles of special education teachers in the integration of learners with Special Needs into the general curriculum and classroom.
- Examine the practical and theoretical issues relating to assessment within the school system
- Adapt and modify curricula for students in a range of placement settings.

Student Learning Outcomes:

1. Develop the necessary skills required for college-level writing
2. Use relevant information from various conventional and electronic sources
3. Improve the reading effectiveness of students academically, professionally and personally
4. Sharpen the ability to think clearly, logically, critically, and effectively through reading.

Program Outcomes Met By This Course:

PO-1 Engage in intellectual discussion regarding traditional and contemporary perspectives in psychology, including neuropsychology

PO-8 Exhibit appropriate listening and communication skills. Be sensitive to, and understand, non-verbal behavior and respond in an emotionally appropriate manner. Express ideas in a variety of forms (visually, digitally, orally, written) and settings.

SAS Grading Scale: Grades will be assigned as follows:

A = 89.5% or better

B+ = 84.5 - 89.4%

B = 79.5 - 84.4%

C+ = 74.5 - 79.4%

C = 69.5 - 74.4%

D = 64.5 - 69.4%

F = 65% or less

Course Materials:

Required Text

Bateman, D. F., & Yell, M. L. (Eds.) (2019). Current trends and legal issues in special education. Corwin, <https://www.doi.org/10.4135/9781071800539>

Supplemental Resources:

Kauffman, J.M., Pullen, P.C., & Hallahan, D.P (2019). Exceptional learners: An introduction to special education. Pearson. (etext) (Mylab & Instant Access)

Teaching children with disabilities in inclusive settings Corporate author:

UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific [828]

ISBN:

Contemporary Issues in Special Educational Needs: Considering the Whole Child

By David Armstrong, & Garry Squires

Special Education: Contemporary Perspectives for School Professionals, 5th Edition

Marilyn Friend, The University of North Carolina at Greensboro

Course Grading Requirement

Course Goals:

To prepare students to be effective special education teachers in their regular classrooms. They will also gain the skills needed to utilize practical approaches to finding out which students have special educational needs and need special education services.

Resources

The course is designed to provide a context to the discussions. Each SPED teacher candidate brings with them varied, and rich experiences which will serve to enrich class discussions and provide insight into the realities of teaching and learning. Your input will be an integral part of this course. Therefore, you are strongly encouraged to critically review the assigned readings prior to class.

Course Grading:

Due Dates	Activity	Points
June 8 th 2021	Class Discussion and Case Study Analysis	25
June 15 th 2021	Reflective Paper	25
June 29 th 2021	Curriculum Development/Modification	50
		100

*Students will be required to submit their assignments to Turnitin.

Course Requirements:

Assignments & In-Class Activities

Each of the listed assignments and in-class activities will be outlined on the MyCourses (SAKAI) site.

Course Outline:

<u>Week</u>	<u>Topics</u>	<u>Required Readings</u>	<u>In-Class Activities & Assignments</u>
	Module 1: Issues in Special Education	Bateman & Yell, Chapter 1	Class Discussion and Case Study Analysis

<u>1</u>	<ul style="list-style-type: none"> • Inclusion, Equality, and Entitlement. • Determining Special Education Placements 		
	Module 2: Supporting Diverse Learners	Teaching Students With Learning Disabilities A Step-by-Step Guide for Educators by Roger Pierangelo, George A. Giuliani (z-lib.org) (1)	Reflective Paper
<u>2 & 3</u>	<ul style="list-style-type: none"> • Teaching Strategies for use with students with exceptionalities. • Modification of Materials. 		
	Module 3: Approaches to Behavioural Problems.	Bateman & Yell, Chapter 6	
<u>4</u>	<ul style="list-style-type: none"> • Positive Behaviour Management Strategies • Applied Behaviour Analysis. 		
	Module 4: Accommodations for Diverse Learners.	TBA	Curriculum Development/Modification.
<u>5</u>	<ul style="list-style-type: none"> • Curriculum Standards and how they apply to students with Special Needs. • National Examinations and accommodations for students with Special Needs. 		
	Module 5: Planning for Inclusion.	Bateman & Yell , Chapter 3	
<u>6</u>	<ul style="list-style-type: none"> • UDL • RTI • Formulating Individual Learning Plans 		

POLICY INFORMATION

Plagiarism policy: Academic Integrity

The St. George's University Student Manual (2019/2020) states as follows:

“Plagiarism is regarded as a cardinal offense in academia because it constitutes a theft of the work of someone else, which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated” (p. 48).

Plagiarism also includes the unintentional copying or false accreditation of work, so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly, and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

Plagiarism Definition: The Oxford Concise Dictionary, 9 ed., (1995: 1043) defines plagiarism as ‘the act or instance of plagiarizing, something plagiarized.’ The dictionary then defines plagiarize as ‘take and use (the thoughts, writings, inventions, and so forth of another person) as one's own; pass off the thoughts, and so forth of (another person) as one's own.’

Plagiarism is regarded as a cardinal offense in academia because it constitutes a theft of the work of someone else, which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated.

Detection

The School of Arts and Sciences faculty members utilizes a number of methods of ensuring that materials submitted are not plagiarized. These include the use of search engines, websites, software dedicated to identifying plagiarized work. Faculty members also act as blind markers and second markers for colleagues.

Penalties

Transparent procedures will be followed where plagiarism is confirmed by the faculty member and verified by colleagues. Penalties are intended to protect the integrity of the work of students and faculty of St. George's University, and the good name of the University. Faculty members reserve the right to award a grade of “F” for confirmed plagiarism, in addition to referring the matter to the Office of Judicial Affairs for disciplinary action.

Plagiarism is a serious offense and St. George's University will not tolerate

Attendance Policy:

The St. George's University Student Manual (2019/2020) states as follows:

“Students are expected to attend all classes and or clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy. If absence from individual classes, examinations, and activities, or from the University itself is anticipated or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. A particular course may define additional policies regarding specific attendance or participation” (p. 9).

Examination Attendance

The St. George's University Student Manual (2019/2020) states as follows:

“All matriculated students are expected to attend all assigned academic activities for each course currently registered. Medical excuses will be based on self-reporting by students. Students who feel they are too sick to take an examination or other required activity on a specific day must submit the online SAS medical excuse, which is available on Carepage. Students are only allowed two such excuses a year. Upon consultation with the Director of University Health Service, the third excuse will result in a mandatory medical leave of absence. The policies regarding make-up examinations are at the option of the Course Director” (p.46).

Examinations will be administered using an online platform.

For additional specific examination policies and procedures, refer to the St. George's University Student Manual (2019/2020), pages 31 through 37.

Student Accessibility and Accommodation Services Policy:

The St. George's University Student Manual (2019/2020) states as follows:

“A student with a disability or disabling condition that affects one or more major life activities, who would like to request an accommodation, must submit a completed application form and supporting documentation to the Student Accessibility and Accommodation Services (SAAS) located in the Dean of Students Office. It is highly recommended that students applying for accommodations do so at least one month before classes begin to allow for a more efficient and timely consideration of the request. If a fully completed application is not submitted in a timely fashion, an eligibility

determination may not be made, and accommodations, where applicable, may not be granted prior to the commencement of classes and/or examinations” (p. 8).

To obtain special accommodations, please contact:

Andrea Blair, SAAS Director

dosaa@sgu.edu

Zoom by appointment

(P) (473) 444-4483

Assignment Submission Procedure:

- Assignment details will be provided in-class or posted on Sakai.
- APA format must be used for all written assignments.
- Papers are due on time. For each day that a paper is late, the student’s grade on it will be lowered by one (1) letter grade.
- All electronic copies are to be submitted to the appropriate online Turnitin dropbox. It is your responsibility to ensure that you are able to view the dropbox on Sakai at least 24 hours before the submission time. If you cannot view it, you need to notify me at least 24 hours ahead of due time.
- If you should have technical difficulties, please proceed as follows to minimize the delay (and therefore the penalty). As soon after you recognize that you have an issue:
 - o send your assignment by email attachment
 - o in the subject line, identify the assignment that is attached (i.e., “Week 3 Assignment”)

Classroom/Online Etiquette Procedure:

Active class participation is expected. This active participation will assist in your ability to learn and apply the information presented. Students are expected to turn off all cell phones, tablets, laptops, or any other device that may disrupt the class. Please do not sleep, do work for other classes, or carry-on conversations with friends, as this is disrespectful to your instructor and your classmates. If you need to leave in the middle of the class, please offer the courtesy of notifying us before the class begins. Behaviour in violation of the Student Code of Conduct (see Student Manual) will be reported to the Dean of Students Office.

Smoking is not permitted in any University building. Eating or drinking (except water) is strictly prohibited in any campus lecture hall, classroom, laboratory, or library.

Policy/Procedure Related to the Department:

SPED – 301 – Assistive Technology - 3 credits (online)

Course Director	Email	Office Hours	Class
Sacha Pierre	spierre@squ.edu	Upon Request	M-R* 3:30 PM - 4:45 PM

*On week's when there is a holiday, class will be held on Friday

Course Description:

21st century special education teachers must keep abreast of novel ways to meet the diverse needs of their students. This course will introduce the concept of assistive technology (AT), its ethical implications, and its changing role in the education, and lives of students with special needs. You will explore ways to work with students, paraprofessionals, and their caregivers to determine if AT is right for them. In addition to learning how to evaluate various types of assistive technology, we will explore how AT can augment existing mobility interventions, and/or learning strategies by focusing on a student's strengths. You will also investigate universal design for learning (UDL) and the role of AT in distance learning, and the implications of transitioning students from primary to secondary school, and beyond. Reflective practice is a crucial component of any educational decision-making process. Thus, care will be taken to ensure that you practice reflecting and communicating your rationale. Finally, you will be given opportunities to share your insights on concepts such as accessibility and universal design for learning within the Caribbean context.

Course Aims and Objectives:

By the end of this course students will be able to:

- Identify a variety assistive technology options for students with special needs.
- Identify the legal and ethical implications associated with assistive technology.
- Assess the suitability of assistive technology based on the student's identified strengths, and to a lesser extent their limitations.

- Use SETT framework to design a plan to introduce an identified assistive technology which includes training, system or environmental requirements, cost, potential challenges, and suggested solutions etc.
- Design, and implement an assistive technology training session for a student with special needs.
- Reflect on the AT decision-making process, and the implications of the decisions on stakeholders.
- Collaborate with faculty, paraprofessionals, and aids to develop plan for introducing or withholding assistive technology.
- Identify tools to remove barriers from distance learning.
- Use UDL to augment existing lesson plans.
- Design a plan for students transitioning between primary and secondary school, secondary and tertiary institutions or secondary, and workplace.
- Develop an AT resource guide for use within your school setting and with stakeholders.
- Develop an AT tip sheet for students.

Course Outline:

The course is designed in modules to provide a context to the discussions. Each SPED of you brings a varied, and rich experiences which will serve to enrich class discussions and provide insight into the realities of teaching and learning. Your input will be an integral part of this course. Therefore, you are strongly encouraged to critically review the assigned readings prior to class.

Course Schedule

Module 1: What is AT? What are the implications of making learning accessible?

Week 1

- Introduction to Assistive Technology (AT); ethical and legal implications; learning strategies versus AT; considering AT in the Caribbean Context; UDL
- Assistive Technology Decision Making Process SETT (Student-Environment-Task-Tools) Framework
- “Using What We Have” – Hi-tech, low-tech, and Cost-effective AT

Readings:

- (Dell) Chapter 1 (Intro to AT); Chapter 8 (Using What You Have); Chapter 4 (UDL)
- (Green) Chapter 1 Improving Technologies; Chapter 2 (Benefits to Assistive Technology; Assessing Features in Devices You Already Use); Chapter 3 (Technology and Access)

Websites:

- [Tools for Evaluation: Assistive Technology Tools Kits | LD Topics | LD OnLine](#)
- [\(203\) The Case Against Assistive Technology - YouTube](#)
- [Easy Ways to Bring Assistive Technology Into Your Classroom | Edutopia](#)

Module 2: Supporting Specific Educational Needs

Week 2

- Using AT to support Reading and Comprehension
- Using AT to support Writing
- Using AT to support Math

Readings:

- (Dell) Chapter 3 (Reading); Chapter 2 (Writing); Chapter 5 (Math)
- (Green) Chapter 2 (Assessing Features in Devices You Already Use)

Websites:

- [Using Assistive Technology to Support Writing | Reading Rockets](#)
- [Reading Difficulties and Solutions for Passage-Based Reading on the SAT | LD Topics | LD OnLine](#)
- [Assistive Technology Tools: Reading | Reading Rockets](#)
- [Enhancing the Note-Taking Skills of Students with Mild Disabilities | LD Topics | LD OnLine](#)
- [From Illegible to Understandable: How Word Prediction and Speech Synthesis Can Help | LD Topics | LD OnLine](#)
- [Assistive Technology Success Stories: Opening the World of Education to All Students | Edutopia](#)
- [Chart for Assistive Technology Tools for Writing and Spelling \(gmu.edu\)](#)
- [Virtual Manipulatives for Math \(didax.com\)](#)

Week 3

- Using AT to support Communication (i.e. hearing impairment, physical disabilities, and autism)
- Training students to use AT SIM Model
- Accessing Computers and Mobile Devices (Mobility, and visual impairments) P1
- **Midterm Exam**

Readings:

- (Dell) Chapter 6 (Hearing Impairments, Speech); Chapter 7 (Visual, Autism, Positive Behaviour; Visual Support)
- (Green) Chapter 4 Technology to Improve Verbal Expression

Week 4

- Accessing Computers and Mobile Devices (Mobility, and visual impairments) P 2
- Using AT to support executive functioning, and attention
- Using AT to create Visual supports and Behavioural interventions

Readings:

- (Dell) Chapter 8 & 9 (Mobility) Chapter 7 (Visual, Autism, Positive Behaviour; Visual Support);
- (Green) Chapter

Module 3: Working with Stakeholders to Identify Needs and Provide Interventions

Week 5

- Selecting, Designing, and Implementing Augmentative Communication
- Working with students and other stakeholders to assess needs and fit.

Readings

- (Dell) Augmentative Communication - Chapters 10 (Selecting, Designing), 11 (Teaching), & 12 (Integrating)
- (Green) Chapter 5 (Augmentative and Alternative Communication); Chapter 3 (Technology and Access)

Week 6

- AT Throughout the Lifespan - Using AT to support students in transition.
- AT PEP MEETINGS (TEAMING)
- **Final Examination**

Readings:

- (Dell) Chapter 15 (Transition Planning)
- (Green) Chapter

Course Evaluation

Component	Points	Weight
1 Page AT tip sheet (for students)	10 PTS	10%
SIM Model Assignment	20 PTS	15%
In class Activities & Virtual Hub	15PTS	10%
Assistive Technology Tool kit	50 PTS	20%
Assistive Technology PEP Meeting Assignment	50 PTS	20%
Midterm Examination	25 PTS	15%
Final Examination	25 PTS	15%
Course Total	195 PTS	100%

Textbooks:

Assistive Technology in the Classroom: Enhancing the School Experiences of Students with Disabilities 3rd Edition. By Amy G. Dell, Deborah A. Newton, Jerry G. Petroff (For Purchase)

Assistive Technology in Special Education: Resources to Support Literacy, Communication, and Learning Differences 3rd Edition, by Joan Green (Available Online)

AT Supplemental Online Resources

[Center on Technology and Disability \(CTD\) \(ctdinstitute.org\)](http://ctdinstitute.org)

Centre on Technology and Disability Website: <https://www.ctdinstitute.org/cafe>

[A Teacher's View of Assistive Technology - Bing video](#)

[What is assistive technology? | DO-IT \(washington.edu\)](#)

[What is accessible electronic and information technology? | DO-IT \(washington.edu\)](#)

[What is AT? - Assistive Technology Industry Association \(atia.org\)](#)

[What are some types of assistive devices and how are they used? | NICHD - Eunice Kennedy Shriver National Institute of Child Health and Human Development \(nih.gov\)](#)

[Assistive technology explained | NDIS](#)

[Assistive technology in education | Advice | Independent Living](#)

[Assistive Technology for Special Education Students - Disability Rights Washington](#)

[Assistive Technology for Kids with Learning Disabilities: An Overview | Reading Rockets](#)

[Assistive Technology for Students with Learning Disabilities - LD@school \(ldatschool.ca\)](#)

[Examples of AT | Assistive Technology for Education \(atfired.com\)](#)

[Assistive technology | Sheffield Hallam University \(shu.ac.uk\)](#)

[Introduction to Assistive Technology for Young Learners: Video 1 - Bing video](#)

[Assistive Technology in Action - Meet Elle - YouTube](#)

Course policies and expectations

UNDERGRADUATE GRADING

The University uses the following letter grades to indicate the record of achievement in courses completed:

A	89.5 – 100
B+	84.5 – 89.4
B	79.5 – 84.4
C+	74.5 – 79.4
C	69.5 – 74.4
D	64.5 – 69.4

F Below 64.5

EXAMINATION ATTENDANCE

All matriculated students are expected to attend all assigned academic activities for each course currently registered. Medical excuses will be based on self-reporting by students. Students who feel they are too sick to take an examination or other required activity on a specific day must submit the online SAS medical excuse, which is available on Carenage. Students are only allowed two such excuses a year. Upon consultation with the Director of University Health Service, the third excuse will result in a mandatory medical leave of absence. The policies regarding make-up examinations are at the option of the Course Director.

ATTENDANCE REQUIREMENTS

Students are expected to attend all classes and clinical rotations for which they have registered. Although attendance may not be recorded at every academic activity, attendance may be taken randomly. Students' absence may adversely affect their academic status as specified in the grading policy. If absence from individual classes, examinations, and activities, or from the University itself is anticipated, or occurs spontaneously due to illness or other extenuating circumstances, proper notification procedures must be followed. A particular course may define additional policies regarding specific attendance or participation.

PLAGIARISM POLICY DEFINITION

The Oxford Concise Dictionary, 9 ed., (1995: 1043) defines plagiarism as 'the act or instance of plagiarizing, something plagiarized.' The dictionary then defines plagiarize as 'take and use (the thoughts, writings, inventions, and so forth of another person) as one's own; pass off the thoughts, and so forth of (another person) as one's own.' Plagiarism is regarded as a cardinal offense in academia because it constitutes theft of the work of someone else, which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated.

PENALTIES

Transparent procedures will be followed where plagiarism is confirmed by the faculty member and verified by colleagues. Penalties are intended to protect the integrity of the

work of students and faculty of St. George's University, and the good name of the University. Faculty members reserve the right to award a grade of "F" for confirmed plagiarism, in addition to referring the matter to the Office of Judicial Affairs for disciplinary action. Plagiarism is a serious offense and St. George's University will not tolerate it.

STUDENT ACCESSIBILITY AND ACCOMMODATION SERVICES

A student with a disability or disabling condition that affects one or more major life activities, who would like to request an accommodation, must submit a completed application form and supporting documentation to the Student Accessibility and Accommodation Services (SAAS) located in the Dean of Students Office. It is highly recommended that students applying for accommodations do so at least one month before classes begin to allow for a more efficient and timely consideration of the request. If a fully completed application is not submitted in a timely fashion, an eligibility determination may not be made, and accommodations, where applicable, may not be granted prior to the commencement of classes and/or examinations. The application form, guidelines for submission of required disability documentation, and contact information can be found at <https://mycampus.sgu.edu/group/saas/home>

SAAS welcomes an opportunity to speak with you regarding your accommodations and to answer any questions.



St George's University
School of Arts and Sciences
Department of Humanities & Social Sciences

GENERAL COURSE INFORMATION

Course Code and Title: SPED 400 Practicum in Special Education
Number of Credits: 6
Days and Times: Mon. and Wed, 5:30 – 6:45 PM
Semester and Year: Fall 2021
Classroom Location: ONLINE
Pre-requisite(s):

Course Lecturer Name(s): Ms. Judy-Ann Auld (473) 405-2777; Mrs. Annie Gill (473) 439-2000
Course Director Name: Ms. Judy-Ann Auld

Course Lecturer(s) Contact Information: JAuld@sgu.edu,
Course Director Contact Information: JAuld@sgu.edu

Course Director Office Hours: Online/phone by appointment

Course Director Office Location: TBA

Course Support: Nikisha S. Thomas NSThomas@sgu.edu and Nichole Phillips nphilli2@sgu.edu

Course Management tool: To learn to use Sakai, the Course management tool, access the link <https://apps.sgu.edu/members.nsf/mycoursesintro.pdf>

COURSE CURRICULUM INFORMATION

Course Description

Course Description:

This practicum is designed to provide trainee teachers with supervised experience in instructional planning, management, and systematic delivery of specially designed instruction for individuals with learning disabilities, behavior disorders, and mild mental disabilities in public schools. Teacher candidates must successfully complete a minimum of 20 field hours and the required field experience activities in a public-school setting with students Identified with SEN. The practicum will be a mixture of field observations, and teaching or counselling. The Practicum is designed to assist SEN teacher candidates to work with and enhance the educational experiences of students with special education needs. The Practicum endeavors to provide the SEN teacher candidates with

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the guidelines, resources, and feedback to help them apply best practices in real world situations. During class, teacher candidates will examine different theoretical, and pedagogical approaches, as well as ethical and procedural considerations. To foster reflective practitioners, teacher candidates will reflect on their own decision making and outcomes. Our aim is to prepare our candidates to carefully consider the needs of the students and families in their care during the planning, delivery, assessment, and reporting stages. A portion of the in-class component will be devoted to learning about self-care. This often-overlooked component is important to avoid ‘burn out’. The practicum is also an opportunity for students to develop their teaching portfolios to further their career aspirations.

Objectives:

By the end of this course students will be able to:

1. Develop individualized lesson plans (IEP) for a student/students based on assessment, observations, and/or student interviews.
2. Collaborate with other special needs stakeholders to implement IEP goals, behavioral objectives, and prescribed accommodations in separate and/or inclusive settings
3. Collaborate successfully with specialist and regular classroom teachers to determine the most appropriate plan of action for students with special needs.
4. Demonstrate direct instruction methodology across the curriculum
5. Develop and using instructional materials suitable to students’ needs
6. Demonstrate curriculum-based formative and summative evaluation techniques in the basic academic skill areas for students with disabilities and at-risk students in inclusive and resource settings
7. Demonstrate systematic data collection techniques regarding effectiveness of instruction
8. Evaluate and select appropriate pieces for inclusion in their teaching portfolio.

Student Learning Outcomes:

1. Master the content knowledge, professional and the twenty-first century skills needed to make an optimal contribution to “whole” student learning in education settings.
2. Develop competence in the collection and use of data to inform decision-making and to demonstrate accountability for student learning.
3. Demonstrate professional dispositions.
4. Develop cultural competence and an understanding of the regions by utilizing knowledge and experiences to effectively “bridge the gaps” (economic, achievement,) ensuring optimal learning for all students.
5. Engage in authentic field experiences in collaboration with committed school-based partners and are empowered to improve the quality of education throughout this region and beyond.

Program Outcomes Met By This Course:

PO-1 Engage in intellectual discussion regarding traditional and contemporary perspectives in psychology, including neuropsychology

PO-8 Exhibit appropriate listening and communication skills. Be sensitive to, and understand, non-verbal behavior and respond in an emotionally appropriate manner. Express ideas in a variety of forms (visually, digitally, orally, written) and settings.

SAS Grading Scale: Grades will be assigned as follows:

A = 89.5% or better

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- B+ = 84.5 - 89.4%
- B = 79.5 - 84.4%
- C+ = 74.5 - 79.4%
- C = 69.5 - 74.4%
- D = 64.5 - 69.4%
- F = 65% or less

Course Materials:

Required Text

Kauffman, J.M., Pullen, P.C., & Hallahan, D.P (2019). **Exceptional learners: An introduction to special education**. Pearson. (etext) (Mylab & Instant Access)

Supplemental Resources:

1. Rosenberg, M., O'Shea, L., & O'Shea, D. (2006). *Student teacher to master teacher* (4th ed.). Upper Saddle River, NJ: Prentice-Hall, Inc. (ISBN: 9780131173118)

Optional Resources:

American Psychological Association (2020). *Publication Manual of the American Psychological Association*. (7th ed). American Psychological Association.

Pierangelo, R., Giuliani, G.A. (2008). **Teaching Students with Learning Disabilities: A Step-by-Step Guide for Educators**. (1st Edition). Sage Ltd.

Susan Hart, S., Dixon, A., Drummond, J., McIntyre, D. **Learning Without Limits**.

APA Resource [General Format // Purdue Writing Lab](#)

Course Grading Requirement

Course Goals:

To prepare students to be effective special education teachers in their regular classrooms. They will also gain the skills needed to utilize practical approaches to finding out which students have special educational needs and need special education services.

Resources

The course is designed to provide a context to the discussions. Each SPED teacher candidate brings with them a varied, and rich experiences which will serve to enrich class discussions and provide insight into the realities of teaching and learning. Your input will be an integral part of this course. Therefore, you are strongly encouraged to critically review the assigned readings prior to class.

Course Grading:

Assignment Points	Points	Description
Completion of teaching assignments/requirements AND 20 hours of field experience	50	This assignment includes implementing informal assessment, the preparation and teaching of four lesson plans, selection and preparation of materials, a written summary in the form of a reflective narrative (guidelines to be provided), and a participation log.

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<p>Collaboration/Participation Log with documentation: details regarding other activities that are completed in addition to the teaching assignments/requirements of the field practicum</p>	<p>25</p>	<p>A log will be kept of all experiences, using the form (to be posted on sakai). Students will be engaged in other tasks typical of the role of the special education teacher, such as:</p> <ul style="list-style-type: none"> ✓ conferencing with regular education teachers concerning instruction and other issues for students placed in inclusive regular classes ✓ collaborating with regular class teachers in the delivery of instruction within the regular class to students with special needs ✓ implementing various assessment procedures under the direction of the supervising teacher ✓ planning instruction as directed by the supervising teacher ✓ preparation of instructional materials ✓ supervising and directing small-group instruction under the direction of the class teacher ✓ implementing assessment accommodations during lessons under the direction of the classroom teacher ✓ utilizing behavior management techniques, including the preparation of behavior management plans ✓ attending due process meetings such as those involving the initial identification and re-evaluation of students with special needs <p>Assessment:</p> <ul style="list-style-type: none"> ✓ Collaboration/Participation Log recording tasks for each visit for 20 hours; detailed with documentation of activities completed during the field hours.
<p>Micro Teaching Portfolio</p>	<p>25</p>	<p>Students are expected to complete a micro teaching portfolio. (Further details will be published on Sakai.</p>

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*Students will be required to submit their assignments to Turnitin.

Course Requirements:

Journal Reflections

Students will use their reflective journals (discussion forum) to provide insights and analysis about a special education issue assigned by the SPED team. Reflections that draw on current theories and practice and include your personal experiences as an educator are crucial for your professional growth within this field. Students are required to submit an initial discussion item between 300-400 words and respond to at least two (2) of their classmates' posts to further the discussion. Initial reflections are due at 11:59 PM on Friday night. Whereas peer responses are due by Sunday at 11:59 PM. (Unless specified otherwise).

Assignments & In-Class Activities

Each of the listed assignments and in-class activities will be outlined on the MyCourses (SAKAI) site. They will consist of Journal, site visit evaluation, self-evaluation, student driven lesson plan assignment, (to include plans for follow-up, and self-reflection)

Course Outline/ Schedule:

This SPED 400 course is an applied field experience course. Before the 20 hours of field work can be completed, several criteria must be met. First, your placement/setting (primary or secondary school) will be decided during the first 3 weeks of the semester based on where it's convenient for you. Each candidate will work with one or more students who have been identified with SEN. The Next, candidates must schedule the 20 hours in increments of no more than two-three hours per day. Then, an agreed upon schedule among the classroom teacher, the university lecturer, and candidate will be established prior to commencing the experience. Finally, once your schedule is made to fit the above criteria it is your responsibility to maintain and keep the agreed upon schedule with your cooperating/classroom teacher and lecturer.

Additional information describing the content, organization, and evaluation criteria for assignments to be completed during the semester will be provided in class and/or via Sakai.

POLICY INFORMATION

Plagiarism policy: Academic Integrity

The St. George's University Student Manual (2019/2020) states as follows:

"Plagiarism is regarded as a cardinal offense in academia because it constitutes theft of the work of someone else, which is then purported as the original work of the plagiarist. Plagiarism draws into disrepute the credibility of the Institution, its faculty, and students; therefore, it is not tolerated" (p. 48).

Plagiarism also includes the unintentional copying or false accreditation of work, so double check your assignments **BEFORE** you hand them in.

Be sure to do good, honest work, credit your sources and reference accordingly and adhere to the University's Honor Code. Plagiarism and cheating will be dealt with very seriously following the university's policies on Plagiarism as outlined in the Student Manual.

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Your work may be subject to submission to plagiarism detection software, submission to this system means that your work automatically becomes part of that database and can be compared with the work of your classmates.

Plagiarism Definition The Oxford Concise Dictionary, 9 ed., (1995: 1043) defines plagiarism as ‘the act or instance of plagiarizing, something plagiarized.’ The dictionary then defines plagiarize as ‘take and use (the thoughts, writings, inventions, and so forth of another person) as one’s own; pass off the thoughts, and so forth of (another person) as one’s own.’

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Detection

The School of Arts and Sciences faculty members utilize a number of methods of ensuring that materials submitted are not plagiarized. These include the use of search engines, websites, software dedicated to identifying plagiarized work. Faculty members also act as blind markers and second markers for colleagues.

Penalties

Transparent procedures will be followed where plagiarism is confirmed by the faculty member and verified by colleagues. Penalties are intended to protect the integrity of the work of students and faculty of St. George’s University, and the good name of the University. Faculty members reserve the right to award a grade of “F” for confirmed plagiarism, in addition to referring the matter to the Office of Judicial Affairs for disciplinary action.

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Examination Attendance

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Examinations will be administered using an online platform.

For additional specific examination policies and procedures, refer to the St. George's University Student Manual (2019/2020), pages 31 through 37.

Student Accessibility and Accommodation Services Policy:

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To obtain special accommodations, please contact:

Andrea Blair, SAAS Director

dosaa@sgu.edu

Zoom by appointment

(P) (473) 444-4483

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Click or tap here to enter text.

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