

PHRD 4012 (CNR# 41560): Pathophysiology I
9:00 a.m. – 9:50 a.m.; T-Th-F

I. Contact Information

Course Coordinator/Instructor:

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Course Instructors:

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* Preferred Method of Contact

II. Course Prerequisites/Co-requisites

Acceptance into the first year at the COP and registration

III. Course Description

Pathophysiology I (3 Cr): This is a first-year level course where students will be introduced to disease processes at a cellular, organ and system level. The course will serve as an introduction to pathophysiology building on the anatomy and physiology courses that students have already completed. The complete organ systems as well as their pathophysiologic impact disease states will be studied

This course is a major requirement for the pharmacy degree Pharm.D. Completion of degree requirements leads to eligibility for professional licensure and/or certification in Louisiana upon graduation. Federal Regulations require universities to provide information to students about the alignment between Louisiana's requirements and those of other states. ULM has created a web page with discipline-specific information containing hyperlinks to Licensure Boards in the United States <https://www.ulm.edu/professional-licensure-disclosures/index.html>. Program Directors and/or faculty will discuss this information with you during advising or other program meetings but is also available to answer questions and address any concerns you might have. It is also important to note that licensure or certification requirements are subject to change. Although ULM Program Directors annually review and update licensure information for every state, the faculty recommends that before enrolling in a program and throughout enrollment, students communicate with the applicable state board to confirm understanding and whether upon completion of ULM's program, they will meet requirements.

IV. Course Objectives and Curricular Outcomes

To introduce students to common diseases, and students should be able to:

- predict physiological reactions to numerous challenges at cellular level.
- utilize information to explain the pathological basis of diseases.
- define medical terminology as it applies to common disease states.
- relate signs and symptoms of disease to pathophysiologic process.
- identify the role of common drug targets in the pathophysiology of health conditions.

Educational (based on CAPE outcomes)

Domain 1 – Foundational knowledge

1.1. Learner (Learner) - Develop, integrate, and apply knowledge from the foundational sciences (i.e., *physiological, pathophysiological, pharmaceutical, social/behavioral/administrative, and clinical sciences*) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and *patient-centered care*.

Domain 3 - Approach to Practice and Care

3.1. Problem Solving (Problem Solver) – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

ACPE APPENDIX 1 (required elements)

Pathology/Pathophysiology

Basic principles, mechanisms, functional changes and metabolic sequelae of human disease impacting cells, organs, and systems.

Human Physiology

Homeostatic function and normal response reactions across the lifespan of non-diseased human cells, organs, and systems.

V. Course Topics

- Ionic basis for resting membrane potential and action potentials Voltage gated ion channels and Synaptic transmission Autonomic nervous system
- Overview of Structure/function of the central nervous system/cerebral cortex/Limbic system Somatic nervous system
- Seizures Pain/Nociception
- Affect disorders/psychosis Parkinson's Alzheimer's Addiction
- Muscle physiology/Neuromuscular junction; skeletal muscle; neuromuscular junction disorders
- Hematologic systems: Structure/function and hematopoiesis; Hematopoiesis and hematopoietic Disorders/Anemias
- GI physiology/Pathophysiology, liver/biliary systems
- Nutrition, essential macro(carbs/fat/protein) and micro (vitamins nutrients) Nutrients Upper (GERD, PUD) and Lower (diarrhea, constipation) GI
- Cardiac pathophysiology/Electrophysiology, Cardiac Arrhythmias, Peripheral Circulation/Blood Pressure, hypertension, CV Shock, Aneurysms, atherosclerosis, stroke/Embolisms, Coronary Ischemia and Heart Disease
- Iron/VitB12/Sickle Cell Anemias; Coagulation and Coagulation disorders
- Structure/function of the integumentary system (Skin anatomy and physiology)
- Skin Pathophysiology (skin cancers, genetic skin disorders, inflammation e.g. psoriasis, acne/inversa, dermatitis)

VI. Instructional Methods and Activities

Instructional methods will be traditional lecture format. Lecture notes will be posted online prior to each class. Students should review notes and all assigned reading prior to each class. In addition to lectures, various active learning exercises will be used intermittently to reinforce lecture material and may include role-playing, in-class discussion, group discussions/projects, problem-based-learning, and demonstrations.

VII. Evaluation and Grade Assignment

- To assess student performance, there will be 3 midterm exams (100 points per exam) and a final exam (100 points) for a total of 400 points. Each 50-minute class period will be represented by 10 points on the exam. The final exam will not be comprehensive. Students can also earn up to 5 bonus points from the Boot Camp Pathophysiology Exam. A time limit of fifty-five minutes will be allowed for each exam, including the final exam. All exams are weighted equally and therefore treated the same.
- Exam dates are scheduled in the course syllabus and will only be changed as per College of Pharmacy policy or in the event of University closure.
- Exams may be multiple choice, fill in the blank, short-answer, case or scenario-based discussion, essay, or any other format deemed necessary by the lecturers and course coordinator.
- Normal laboratory values will be provided for all questions, unless otherwise specified during class.
- Lab values that are specific to a particular disease state will not be provided.
- Information acquired from previous lectures in the course and from other courses in the professional pharmacy curriculum may be needed in preparing for these examinations.
- Exams may cover material (readings, outside assignments) not covered in class.
- Exams will NOT be returned to the student. All instructors will have copies of the exam and students' results, and students may view their exam results in instructors' offices, at times convenient for all involved. (See below) Review sessions may be scheduled for students to review the exam with the test question writer.

- Exams will be issued using Exam Soft; all students are required to download the exams prior to the date of the scheduled exam. If a student cannot take the exam on the scheduled date the student must reverse download the exam to Exam Soft. Under no circumstances should a student open an examination, except during the scheduled time and at the scheduled location. Scratch paper will be issued on the day of the exam and all students are required to sign the scratch paper and return it to the exam proctor prior to leaving the room. No other paper items will be allowed during the exam unless supplied by the faculty administering the exam. All exams must be uploaded before leaving the classroom; in the event of a power outage or loss of Wi-Fi connection all students are required to upload the exam at the earliest possible reconnection time, however proof of exam closeout will be required prior to leaving the classroom.
- Students wishing to review their exams with the course coordinators or with a specific faculty member must do so within 2 weeks of when the exam scores are posted, or within 1 week of the time that the score for the final exam is posted.
- The use of programmable calculators and electronic devices capable of storing, receiving or transmitting data are prohibited during an exam or quiz unless expressly authorized by the course instructor. Such devices must be turned off and left with your belongings in the front of the room.
- Students wishing to review their exams with the course coordinator or with a specific lecturer must do so *within 2 weeks* of when the test scores are posted.
- Students wishing to challenge a question on the test must provide the course coordinator with a written statement (email or hard copy) that identifies which question(s) being challenged, and outline why the student feels his or her answer(s) is/are correct and references from recent (published within the last 1-2 years) primary or tertiary literature to support the claim. Discussion of a dispute will occur only after the written query is submitted. Challenges of test/exam questions will only be considered within 2 weeks of when the test scores are posted. For the final examination, challenges of test questions will only be considered within 1 week of the time that the scores are posted. If there is a conflict between lecture notes versus textbook or other reference material, precedence will be given to the lecture notes.
- In the event that a determination is made that there is a legitimate issue with a particular test question, adjustments to scores will be made based on discussions between the test question writer and the course coordinator.

Available Points per Exam and Total Course Points:

Exam 1: 100 points

Exam 2: 100 points

Exam 3: 100 points

Final Exam: 100 points

Total Points: 400 points

IX. Grading Scale:

89.5 – 100%	A
79.5 – 89.4%	B
69.5 – 79.4%	C
59.5 – 69.4%	D
≤ 59.4%	F

Professional student mid-term grades will be posted on-line for students to view via Banner. Mid-term grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student. Late assignments will only be accepted with an excused absence.

A. Early Intervention

Students scoring <70% on any exam and an overall exam average <70% (excludes quizzes, assignments, bonus, etc.) will be required to submit to the next exam instructors written, narrative responses to select lecture objectives that will be provided within 24 hours of the posting of their exam grade to Moodle. These objectives will be in the form of a Moodle assignment and represent unit--- or lecture---level objectives to be tested upon in the next scheduled course exam.

Written responses must be submitted no later than one calendar week before the next scheduled exam. Responses must be written in complete sentences and may not be copied or pasted from any source, including class notes, treatment guidelines, textbooks, or any internet site. Submissions found to contain responses that have not been written in a student's own words will be considered a failure to submit.

In addition, students will be required to review each failed exam's ExamSoft-generated missed item report with the course coordinator or instructor responsible for each section of material. The discussion should include the student's reasoning for the incorrect answer as well as the reason for the correct answer.

In addition to answering objectives as described above and reviewing missed item reports, students scoring <70% on any exam and having an overall exam average <70% (excludes quizzes, assignments, bonus, etc.) will meet with the Director of progressions/Professional Affairs.

Failure to submit this required assignment will result in ineligibility to remediate.”

B. Remediation Policy

1. Rationale or background to policy:
 - a. Remediation is a sequence of events beyond the standard course curriculum that are designed to bring underperforming students to a level of competency expected at the conclusion of a course. The process of remediation should provide opportunities for students to develop and demonstrate required knowledge, skills, and/or attitudes through self-directed learning and purposeful interactions with faculty. Students and faculty should both be active participants in the remediation process; however, remediation is a privilege that should be earned by the student through demonstrated attendance and active participation throughout the course.
 - b. Within the School, the current progression standard states that students who do not earn a minimum grade of “C” in a professional pharmacy course are not permitted to progress to subsequent courses for which it is a prerequisite. In the event that a student fails to obtain a grade of “C” or better in a required professional pharmacy course, the student will either have to repeat the course or remediate.
2. Policy Statement:
 - a. Remediation is a privilege that must be earned through demonstrated attendance and active participation throughout the semester that the non-progressing grade was earned.
 - b. To be eligible for remediation, the student must have completed all assigned work in the course. If < 7% of students enrolled in a class fail to achieve a passing grade of “C” in a required course, students must have fulfilled all the requirements of the Early Intervention program as outlined the Student Success Policy to be eligible for remediation. Remediation will be offered to any student earning a course average of $\geq 65\%$ regardless of the total number of students failing.
 - c. If the student makes a grade of <70% on the targeted final, their original grade will take the place of the “I” grade. The student can then re-enroll in the course at the next offering if eligible based on school progression policies. If this is the student's second “F” grade in the curriculum, the student will be dismissed from the program.
 - d. Students will be allowed to remediate with a targeted remediation exam no more than three (3) times total in their P1-P3 years. Students may not remediate a class more than once. There will be no make-up exams in the remediation.
 - e. Students with a grade of “C” or better are not eligible to use remediation in an attempt to improve their grade in that course.
 - f. Students receiving a non-progressing grade as a result of a disciplinary action are not eligible to remediate that course in that semester.

3. **Procedures:**
- a. Remediation will take place during Winter Break for the fall semester and during Maymester for the spring semester. A targeted final of a format to be determined by the course coordinator and instructors will be administered prior to the June "I" removal date for spring semester and prior to the February date for the fall semester.
 - b. Required characteristics of the remediation process for all courses shall include the following:
 - i. Remediation will be targeted to cover the material tested on any exam where the student scored < 70%.
 - ii. Students will be instructed to view recorded lectures, which will be made available for each lecture as the semester progresses and archived for one year after the course is complete.
 - iii. Students will demonstrate achievement of all or specifically assigned lecture objectives by completing narrative responses in their own words.
 - iv. Copying and pasting from any source (including instructor-provided resources, such as slides) will forfeit a student's right to remediate.
 - v. These responses will be submitted at least three days before the targeted final exam.
 - vi. Students must schedule a time to contact the instructors with their questions or to seek feedback on their submission.
 - vii. Students will complete a targeted remediation exam that will cover material on exam(s) where student failed to show mastery of the exam material and scored < 70%.
 - c. Course coordinators may make modifications to the process, after consultation with Associate Dean of Academic Affairs.
 - d. Prior to offering remediation, the course coordinator must contact the Director of Professional Affairs with a list of names for potential remediation. The Director of Professional Affairs will inform the course coordinator of the student's eligibility for remediation.

C. **Class policies and procedures**

At a minimum, all policies stated in the current ULM Student Policy Manual & Organizational Handbook should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

Early Intervention Policy as above. You are required to read, understand and follow the Early Intervention Policy <http://www.ulm.edu/pharmacy/documents/ospa/earlyintervention>.

A. Textbooks (required):

1. *Pathophysiology-The Biologic Basis for Disease in Adults and Children, 9th edition*. Edited by Kathryn L. McCance and Sue E. Heuther. Mosby Publishing.
2. *Pathophysiology of Disease: An Introduction to Clinical Medicine, 8th edition*. Edited by Gary D. Hammer, MD, PhD, and Stephen J. McPhee, MD. Lange Publishing.
3. *Ganong's Review of Medical Physiology, 26 edition*. Edited by Kim E. Barrett, Susan M. Barman, Scott Boitano, Heddwen L. Lange Publishing.

B. Attendance Policy: Class attendance is regarded as an obligation as well as a privilege, and students are expected to know attendance regulations and to attend regularly and punctually at classes in which they are enrolled. Students are required to be in class on time, according to the published class schedule. For a student entering the classroom after the scheduled starting time, the student will be considered as absentee. Students must submit excuses for class absences to course coordinators within three class days after returning to classes.

This course and the College of Pharmacy follows the University Attendance Policy which can be found at the following link:

Professors shall accept an official University excuse. With the following exceptions, professors are to determine whether absences are excused or unexcused: **1)** Absences arising from authorized trips away from the University or from special duties at the University shall be excused. **2)** Absences arising from a student's confinement in a hospital or other in-patient facility or doctor's excused absences shall be excused. Students are responsible for verifying this information to the faculty. **3)** Absences arising from a death in the immediate family shall be excused. The immediate family is defined as spouse, child, step-child, mother, father, sister, brother, grandmother, grandfather, step-mother, step-father, step-brother, step-sister, aunt, uncle, mother-in-law or father-in-law.

C. Make-up Policy: Each student is expected to attend each exam at the date and time specified. If a student cannot attend an exam due to a valid and verifiable University excuse, he/she should please call the Office of Student and Professional Affairs in advance and must speak directly with the course coordinator, as soon as possible. The course coordinator must be notified prior to the examination, if at all possible, if a student anticipates being unable to attend the exam. Exams will not be given early. Failure to attend a scheduled make-up exam will result in a zero (0) grade for that exam. Make-up exams will be prepared at the same or higher level than the original exam. The format of the make-up exam may be written or oral. *Students missing an exam due to a University approved excuse will take the make-up exam during the week of finals, or as determined by the course coordinator.* <http://www.ulm.edu/pharmacy/documents/ospa/excusedabsence.pdf> In the event that the final exam is missed, for reasons stated below, a grade of "I" will be assigned and the student will follow the University policy for adjusting the "I" grade. In the case that an exam is missed, the student must follow and adhere to the time frame in the College of Pharmacy's excused absence policy.

Acceptable excuses will include, but not be limited to:

- Medical or dental care – validated by the attending physician or dentist. The student will present a statement from the attending health care provider indicating the date and time of treatment, the nature of the treatment and a statement that he/she was not able to take the examination at the appointed time.
- A death in the student's immediate family.
- A family emergency
- An official university function. It is the student's responsibility to have the faculty in charge of the function notify the course coordinator prior to the function.

D. Academic Integrity: Students must observe the ULM published policy on academic dishonesty (See page 4 in the ULM *Student Policy Manual*: <http://www.ulm.edu/studentpolicy/>). In addition, students must observe the ULM College of Pharmacy Code of Ethical and Professional Conduct (<http://www.ulm.edu/pharmacy/documents/ospa/codeofconductv82011.pdf>) and the Dress Code (<http://rxweb.ulm.edu/pharmacy/studentinfo/default.html>).

Academic dishonesty will result in a referral to the Academic Standards and Ethics Committee. If the student is found guilty of Ethical and Professional misconduct by the committee, they will receive a zero for the assigned points (graded assignment or test) and up to an "F" in the course from the course coordinator in addition to any disciplinary action recommended by the Academic Standards and Ethics Committee. Academic dishonesty includes, but is not limited to, the use of information taken from others' work or ideas, the provision of help to others on non-collaborative evaluations (tests, quizzes, ec.), collaboration on take home exams, or the use of unapproved information or electronic devices to assist in obtaining answers.

Unless expressly allowed by the instructor, the use of artificial intelligence (AI) tools and applications

(including ChatGPT, DALL-E, and others) to produce content for course assignments and assessments is a violation of the ULM College of Pharmacy's Code of Conduct and is prohibited.

E. Course Evaluation Policy: At a minimum, students are expected to complete the on-line course evaluation as well as any evaluation administered in class by the College of Pharmacy.

F. Student Services: The University of Louisiana at Monroe strives to serve students with special needs through compliance with Sections 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. These laws mandate that postsecondary institutions provide equal access to programs and services for students with disabilities without creating changes to the essential elements of the curriculum. While students with special needs are expected to meet our institution's academic standards, they are given the opportunity to fulfill learner outcomes in alternative ways. Examples of accommodations may include, but are not limited to, testing accommodations (oral testing, extended time for exams), interpreters, relocation of inaccessible classrooms, permission to audiotape lectures, note-taking assistance, and course substitutions. Information concerning student services in the College of Pharmacy can be found in the college of Pharmacy Student Handbook. In particular, students should pay special attention to the University's technical standards and policies concerning students with special needs (<http://www.ulm.edu/studentpolicy/studentpolicy.pdf>). Information about ULM student services, such as Student Success Center (<http://www.ulm.edu/cass/>), Counseling Center (<http://www.ulm.edu/counselingcenter/>), Special Needs (<http://www.ulm.edu/counselingcenter/special.htm>), and Student Health Services, is available at the following Student Services web site <http://www.ulm.edu/studentaffairs/>.

G. Emergency Procedures: Please review the emergency escape plan in the classrooms and hallways of the Bienville building. Move quickly in an orderly manner to the appropriate stairwell and exit the building. The meeting place for this class will be the far end of the north parking lot between Bienville and Broadmoor Blvd. Under no circumstances is the elevator to be used for emergency evacuation. Any student needing assistance should notify the professor immediately. For emergencies, to contact University Police, call 1-911 from landlines and 342-5350 from cell phones.

H. Discipline/Course Specific Policies: Students are responsible for all course information on Moodle and/or instructor websites. They are expected to check these sources regularly to access class materials, required readings, assignments, and other information necessary to excel in this course. Lecture notes might be posted on Moodle. Posting time; however, is at the discretion of the course coordinator. Lecture notes are not intended to be the entire content of the course. They do not take the place of class attendance, personal note-taking, and reading the assigned and/or required text. Course coordinator may revise the notes at any time during the course.

I. Student Services: The University of Louisiana at Monroe strives to serve students with special needs through compliance with Sections 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. These laws mandate that postsecondary institutions provide equal access to programs and services for students with disabilities without creating changes to the essential elements of the curriculum. While students with special needs are expected to meet our institution's academic standards, they are given the opportunity to fulfill learner outcomes in alternative ways. Examples of accommodations may include, but are not limited to, testing accommodations (oral testing, extended time for exams), interpreters, relocation of inaccessible classrooms, permission to audiotape lectures, note-taking assistance, and course substitutions.

Information about ULM student services can be found via these links:

Student Success Center: <http://www.ulm.edu/studentsuccess/>

Counseling Center <http://www.ulm.edu/counselingcenter/>

Special Needs at <http://www.ulm.edu/studentaffairs/>

Library <http://www.ulm.edu/library/reference.html/>

Computing Center Help Desk <http://www.ulm.edu/computingcenter/helpdesk/>

Current college's policies on serving students with disabilities can be obtained on the ULM website:
<http://ulm.edu/counselingcenter/>

If you need accommodation because of a known or suspected disability, you should contact the Director for Disabled Student Services at:

- Voice phone: 318-342-5220
- Fax: 318-342-5228
- Walk in at ULM Counseling Center, 1140 University Avenue (this building and room are handicapped accessible)

Mental Wellness on the ULM Campus:

If you are having any emotional, behavioral, or social problems and would like to talk with a caring, concerned professional, please call one of the following numbers:

ULM Counseling Center: 318-342-5220
Marriage and Family Therapy Clinic: 318- 342-9797
Community Counseling Center: 318-342-1263

Remember that all services are offered free to students, and are strictly confidential.

If you have special needs that I need to be made aware of, you should contact me within the first two days of class.

Sexual Harassment or Gender-Based Discrimination

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds, including federal loans and grants. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct, sexual violence, sexual harassment and retaliation. If you encounter sexual harassment or gender-based discrimination, please contact the Title IX Coordinator at 318-342-1004; you may also file a complaint online, 24 hours a day, at: www.ulm.edu/titleix

The course coordinators reserve the right to adjust the syllabus or schedule in accordance with University and School policies and procedures.

Class will meet in Bienville 340 on the following days and times:

Tuesday	9:00am	–	9:50am
Thursday	9:00am	–	9:50am
Friday	9:00am	–	9:50am

Tentative Lecture Schedule

*Course coordinator/instructors reserve the right to change the following schedule, in accordance with University and School policies and procedures, as needed.

Day	Date	Lecture #	Topic	Instructor
Tu	22-Aug	1	Ionic basis of resting membrane potential; Action Potentials	Dr. Sylvester
Thu	24-Aug	2	Voltage gated ion channels, Synaptic transmission	Dr. Sylvester
Fri	25-Aug	3	Autonomic Nervous System	Dr. Sylvester
Tu	29-Aug	4	Autonomic Nervous System	Dr. Sylvester
Thu	31-Aug	5	Overview of Central Nervous System	Dr. Briski
Fri	1-Sep	6	Somatic Nervous System	Dr. Briski
Tu	5-Sep	7	Spinal Cord	Dr. Briski
Th	7-Sep	8	Cranial Nerves/Cerebral Cortex/Limbic System	Dr. Briski
Fri	8-Sep	9	Temperature Regulation	Dr. Briski
Tu	12-Sep	10	Seizure	Dr. Sylvester
Th	14-Sep	11	Pain/ nociception	Dr. Sylvester
Fri	15-Sep	Exam 1 (lectures 1-10) – 100 pts		
Tu	19-Sep	12	Affect Disorders/Psychosis	Dr. Sylvester
Th	21-Sep	13	Parkinson's/Alzheimer's	Dr. Sylvester
Fri	22-Sep	14	Addiction	Dr. Sylvester
Tu	26-Sep	15	Muscle Physiology	Dr. Briski
Th	28-Sep	16	Neuromuscular/Demyelination Diseases	Dr. Briski
Fri	29-Sep	17	Hematologic systems/Hematopoiesis	Dr. Chamcheu
Tu	3-Oct	18	Hematopoietic Disorders	Dr. Chamcheu
Th	5-Oct	19	Anemias I	Dr. Chamcheu
Fri	6-Oct	20	Gastrointestinal physiology	Dr. Liu
Tu	10-Oct	Exam 2 (Covering lectures 11-20) – 100 pts		
Th	12-Oct	Fall Break: 10/12 to 10/13		
Fri	13-Oct	Fall Break: 10/12 to 10/13		
Tu	17-Oct	21	Liver/biliary system	Dr. Liu
Th	19-Oct	22	Essential macro (carbs/fat/protein) and mic (vitamins nutrients)	Dr. Liu
Fri	20-Oct	23	Upper (GERD, PUD) and Lower (diarrhea, constipation) GI	Dr. Liu
Tu	24-Oct	24	Cardiac Physiology	Dr. Jackson
Th	26-Oct	25	Cardiac Physiology/Electrophysiology	Dr. Jackson
Fri	27-Oct	26	Cardiac Arrhythmias	Dr. Jackson
Tu	31-Oct	28	Peripheral Circulation/Blood Pressure	Dr. Jackson
Th	2-Nov	29	Hypertension/ CV Shock,	Dr. Jackson
Fri	3-Nov	30	Aneurysms/ Atherosclerosis	Dr. Jackson
Tu	7-Nov	Exam 3 (Covering lectures 21-30) – 100 pts		
Th	9-Nov	31	Stroke/Embolisms	Dr. Jackson
Fri	10-Nov	32	Coronary Ischemia and Heart Disease	Dr. Jackson
Tu	14-Nov	33	Iron/VitB12/Sickle Cell Anemias II	Dr. Chamcheu
Th	16-Nov	34	Coagulation/Coagulation disorders	Dr. Chamcheu
Fri	17-Nov	35	Skin anatomy, physiology and lesions	Dr. Chamcheu
Tu	21-Nov	36	Introduction to skin cancer (melanoma and non-melanoma),	Dr. Chamcheu
Th	23-Nov	Thanksgiving Break		
Fri	24-Nov	Thanksgiving Break		
Tu	28-Nov	37	Introduction to skin inflammation (acne, psoriasis, and dermatitis)	Dr. Chamcheu
Fri	1-Dec	EXAM 4 (Covering lectures 31-37)		