I. What is physiology and why is it important to me as a future physician?

- Physiology is the study of the body’s function - from molecules to the whole organism.
- Physiology applies fundamental principles of physics and chemistry to the understanding of the body’s function and regulatory mechanisms.
- Physiology is an approach to analyzing the mechanisms responsible for producing a healthy individual. As such, Physiology is not just a body of facts but is an ordered analytical process. Our objective is to show you how to think with a physiological perspective.
- One of the key concepts in physiology is homeostasis, which includes all the mechanisms by which the body maintains its normal healthy state. Negative feedback is an important component of these regulatory mechanisms.
- Physiology is critical to understanding both Medicine and Surgery. Physiologists utilize much the same analytical process to study normal function that physicians and surgeons use to diagnose and explain disordered function. You will use your knowledge of physiology every day in your practice.

II. What are the overall learning/performance objectives for this course?

Students should be able to:

- Explain physiological mechanisms by applying basic principles of physics and chemistry.
- Describe the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of the human body, commensurate with the requirements for a physician providing primary care to patients.
- Explain the basic mechanisms of homeostasis by integrating the functions of cells, tissues, organs, and organ systems.
- Apply knowledge of functional mechanisms and their regulation to explain the pathophysiology underlying common diseases.
- Effectively solve basic problems in Physiology and Pathophysiology, working independently and in groups.
- Identify and utilize appropriate reference resources to clarify and expand knowledge of Physiology and Pathophysiology.
III. Which textbooks are required?


IV. Are other learning resources available?

- Review books are good sources of practice questions and clinical problems, particularly for NBME Shelf exams and Board exams. Among these are:
  

V. What can I do to be successful in learning physiology?

- **Physiology is considered by many students to be the most challenging course in the entire medical school curriculum. Success in learning physiology requires active studying at a level far exceeding that in other courses.** Memorization alone will not work, you must learn actively. Active learning includes active listening and taking notes in lectures; drawing, labeling, and manipulating graphs and learning all the steps in flow charts; knowing key variables in equations and when to apply them; accurately summarizing physiological processes in your own words and drawings; solving assigned problems and those in the book; and self-testing objectively prior to the exams. Brief, on-line exams will be made available at the end of each block of material to illustrate styles of questions.

- **Keeping up-to-date is critical** given the volume of material, its pace, and the fact that physiology is highly conceptual. Additionally, these concepts build one upon the other, so a thorough understanding of prior lectures is required for understanding subsequent lectures. Read the assigned material ahead of time. A systematic and regular study routine is vastly superior to the "cram before the test" approach. Use the materials provided by the faculty as your primary source of information and utilize others only when needed to help you understand concepts that are difficult for you. Resist the temptation to regularly use several sources; you don’t have time to read all of them. A recent poll of students who made “Honors” disclosed that they consistently spent approximately three hours per day studying physiology and that they would not leave the material until they were certain they understood every aspect thoroughly.

- **Utilize and master all the learning/performance objectives included with each handout.** The performance objectives focus on what is expected of you and what will be covered on exams.

- **Caution: don’t take the information for granted.** Many students are lulled into a false sense of security because most physiological mechanisms appear to be logical and sensible. Students often believe, erroneously, that because the explanations make sense, they know and understand the subject matter. Students with these attitudes usually have difficulty on
examinations. You know physiology if you can utilize the principles to solve problems and answer questions and can explain the material clearly to others using graphs, equations, and/or diagrams. Study groups and tutors are useful for more objective assessments of your skills.

VI. What will I learn about the clinical applications of physiology?

- Lectures will begin with a brief clinical problem, which will provide a framework for integrating the basic physiological mechanisms into the context of disease. Answers to the clinical problems for each lecture are posted on the educational communication program, MyTulaneBlackboard (for instructions, see below).

- Clinical correlations and/or patient oriented problems will be presented during each block. All clinical material will be covered on examinations.

- Problem-based learning sessions (PBLs) will feature application of basic principles to understand clinical content. Key material from these sessions will be covered on exams.

VII. What will be emphasized in the interactive sessions?

- The emphasis of the interactive sessions (e.g., PBL and other team-based learning exercises) is on exercising and applying your knowledge through problem solving, particularly as applied to the understanding of clinical cases.

- The class is divided into two groups for the interactive sessions (see Course Schedule or Student Guide to Physiology PBL Sessions in the course packet); each group will meet with their facilitator at different times in the afternoon. Check the course schedule carefully and mark your calendars for the dates and times of these sessions, which are required, and which change times during the course. See Blackboard for your assigned group.

- Your PBL experience will be enhanced by looking up posted terms and drugs prior to the sessions, by actively looking up information as needed during the sessions, by participating in discussions, and cooperating with other members of your group to reach a consensus.

VIII. What do I do if I need assistance in learning physiology?

- All members of the Faculty stand ready to assist you in learning the material - you only have to ask. Faculty office numbers, phone numbers and e-mail addresses are listed inside the front cover of your handout packet, on Blackboard, and on TMedWeb.

- The faculty members lecturing within each block will be available for small group review sessions or consultation with individual students, by arrangement.

- We encourage you to discuss any concerns that you have with the Course Director or other faculty at any time. You will find them to be very helpful.

- Tutorial assistance is available. Please contact the Office of Medical Education for referrals to tutors. The Course Director will advise you on how best to utilize tutors.
IX. How will my performance in the Human Physiology Course be evaluated?

- There will be six Progress Exams (see table) to determine how well you have learned the concepts in a particular block. The mean score for the six Block Exams (worth a total of 75% of your final grade) will constitute your Block Exam Average.

- A grade of 70 or better is passing (a grade of 75 is required for students repeating the course).

- Your Final Examination score will constitute 25% of your final grade (or 50%, see below). The exam is comprehensive, covering all material in the course, including clinical material and material in PBL sessions.

- You can significantly increase your final grade with a good performance on the Final Exam. If your Final Exam score exceeds your overall block exam average, we will increase the weight of the Final Exam from 25% to 50%.

<table>
<thead>
<tr>
<th>COMPONENT OF GRADE</th>
<th>DATE</th>
<th>TIME and PLACE</th>
<th>PERCENT OF FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAM I (Combined with other courses)</td>
<td>Friday, November 7, 2014</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>10%</td>
</tr>
<tr>
<td>Body Fluids, Diffusion, Osmosis, &amp; Transport (9 lectures; 1 problem-solving session)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXAM II (Combined with other courses)</td>
<td>Tuesday, November 25, 2014</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>7%</td>
</tr>
<tr>
<td>Synapses, Muscle Function, Cardiac Muscle and Electrophysiology (6 lectures; 1 JITT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXAM III (Combined with other courses)</td>
<td>Friday, December 19, 2014</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>18%</td>
</tr>
<tr>
<td>Cardiovascular Function &amp; GI Motility (17 lectures plus 2 PBL sessions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXAM IV (Combined with other courses)</td>
<td>Friday, January 23, 2015</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>18%</td>
</tr>
<tr>
<td>Gastrointestinal Function &amp; Pulmonary Function (17 lectures plus 1 PBL session)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exam V (Combined with other courses)</td>
<td>Friday, February 6, 2015</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>12%</td>
</tr>
<tr>
<td>Renal Function (11 lectures plus 1 PBL session)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exam VI (Combined with other courses)</td>
<td>Friday, March 20, 2015</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>10%</td>
</tr>
<tr>
<td>Endocrine Function (10 lectures)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPREHENSIVE FINAL EXAMINATION (NBME “Shelf” Exam)</td>
<td>Friday, March 27, 2015</td>
<td>8:00 am – 5:00 pm DeBakey</td>
<td>25% (or 50%)*</td>
</tr>
</tbody>
</table>

* Depending on exam score relative to block exam average (see above)

X. Can exam questions be challenged by students?

No. Exam results are carefully screened by item analyses and poor questions are removed via internal faculty challenges. All students receive credit if a question is removed from an exam, otherwise, all students’ grades would decrease by a small amount. We welcome constructive comments on individual exam questions. Please make these comments via email to the Course Director.
XI. What is the course policy on attendance?

- Attendance at lectures is most strongly encouraged. This is because the instructors provide more than facts; they also demonstrate how students should think about concepts and apply them under physiological and pathophysiological conditions. This insight is not always available from textbooks, subscription notes, or recorded lectures.

- Attendance at all PBL and TBL exercises is required because these exercises require group participation and interaction. Students may not attend a session with other than their assigned group, unless given prior permission by the Course Director. Permission of the group’s faculty facilitator alone is invalid. There is no way to make up a missed PBL exercise. The student should meet with his/her group to go over the case, point-by-point. Material from all PBL cases will be covered on exams.

XII. What procedures must I follow if I must miss an examination?

- Excused absences for examinations normally will be given only in cases of serious illness or a death in the student’s immediate family. Students who have conflicts because of a presentation at a professional meeting may make arrangements with the Course Director, in advance, for an alternate exam date. Requests by students to alter their exam schedule to accommodate travel plans (e.g., to family functions or weddings) will not be accepted.

- Students should report absences on exam dates to both the Course Director and the Office of Student Affairs. An un-excused absence will result in a grade of zero for that exam. This is a standard policy of the School of Medicine.

- Make-up exams are given only in unusual circumstances and may include an oral examination in addition to the written portion.

XIII. Where will course materials, information about the course, and grades be posted?

- We will communicate with students via Tulane University’s MyTulaneBlackboard for all course assignments, problem sets, answers to clinical problems, announcements, postings, and practice exams. The web-site is at: http://mytulane.blackboard.com If you have any difficulty with accessing or using MyTulaneBlackboard, contact the Tulane Help Desk at: 504-862-8888.

- Session titles, room locations, times, and lecture slides, will be posted also on TMedWeb

- Lecture audio and slides will also be available on Mediasite. Students should have a backup plan to access material in the case of an inadvertent failure of Mediasite (failures may sometimes occur).

- We will provide you with your individual score on each block exam and your cumulative block exam average. Students performing below passing should contact Dr. Kreisman immediately after receiving their grade for help with developing more effective learning strategies.

- Posting of information, including exam keys and the histogram of exam scores, will be made also on the Human Physiology Course bulletin board on the fourth floor, across from the main elevators. The main office for the Physiology Department (Hutchinson 4002) is nearby.

Revised 09-23-2014