Function of the Human Body
Second Semester 2015

OVERVIEW: Function of the Human Body builds upon core molecular and anatomical disciplines presented in the first semester. From physiology to metabolic biochemistry, nutrition, and major organ systems will be explored in an integrative fashion. Emphasis is placed upon the understanding of key concepts of normal physiological and biochemical systems in healthy humans. Selected aspects of pathophysiological processes will be discussed to illustrate how an understanding of normal function can be applied to clinical medicine. For students to succeed and perform their very best in this challenging course, it is mandatory for them to master the ability to read and interpret graphs and think logically. The need to wrestle with challenging concepts, verbalize mechanisms, and reconstruct graphs with peers cannot be overstated. Comprehension and mastery of integrated FHB materials will prepare students for second-year courses in the curriculum, the USMLE board exams part I, as well as the clinical years.

EDUCATIONAL COMPETENCIES: The Central Curricular Authority (CCA) of Loyola has identified six core competencies encompassing 39 specifically defined goals which are applicable to academic courses in the four-year medical school curriculum at Stritch School of Medicine (SSOM). Four measurable goals from the first three competencies pertain to FHB as follows:

Section A. Competency: Medical Knowledge
Graduates must demonstrate knowledge of the basic biomedical sciences and clinical sciences, as well as the skills and attitudes necessary to use science to guide diagnosis, management, therapeutics and prevention. Students are expected to:
- know, understand and apply the basic concepts of the basic and clinically supportive sciences (Goal 1)

Section B. Competency: Interpersonal and Communication Skills
Graduates must demonstrate knowledge of the principles of communication and the skills and attitudes that allow effective interaction with patients, families, healthcare workers, and others who affect the health and well-being of patients; and to create and sustain a therapeutic and ethically sound relationship with patients. Students are expected to:
- use effective listening skills and elicit information using effective nonverbal, explanatory, and questioning skills (Goal 1)
- facilitate the learning of other students and health care professionals (Goal 6)

Section C. Competency: Professionalism, Moral Reasoning and Ethical Judgment
Graduates must demonstrate a combination of knowledge, skills, attitudes, and behaviors necessary to function as a respected member of the medical profession. They must know the obligations of medical professionals as members of a healthcare team, as members of a healthcare and educational institution, and as leaders in our society bringing about the common good. Our graduates will be able to: demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; and accountability to patients, society, and the profession. Students are expected to:
- behave professionally (Goal 1)
FACULTY: The success of FHB depends critically on the many dedicated and experienced faculty who teach the course. Approximately fifty professional scientists and clinicians with demonstrated commitments to medical education cooperate in presenting lectures, facilitating small-group learning sessions, or leading laboratories and conferences. Individual faculty members are approachable and available for student questions.

SECTIONS: FHB is partitioned into four main sections, each of which is followed by a sectional written examination every four to six weeks. As the course develops, students will recognize that unifying physiological principles keep recurring among the various organ systems. Students are encouraged to integrate the material as much as possible, minimizing the memorization of facts and maximizing a comprehension of concepts.

- Section 1: Nerve, Muscle, Heart & Circulatory Physiology
- Section 2: Pulmonary, Renal & Acid-Base Physiology
- Section 3: Gastrointestinal, Metabolic, & Nutrition Physiology
- Section 4: Endocrine & Reproductive Physiology

TEXTBOOKS: There are several recommended textbooks in FHB as listed below. The majority of figures reproduced in the handouts are taken from the text Physiology by Berne et al, 6th Ed. Class notes and/or PowerPoint slides with learning objectives will be posted online prior to each lecture. Sectional exam questions will be generated from lectures, conferences, labs, and small group problems as well as other learning experiences within each section of the course. Students are strongly encouraged to read relevant materials in one of the recommended texts before coming to lecture. This practice will greatly enhance your understanding of the lecture being presented.

- Medical Physiology (Boron and Boulopaepp, 2003, Saunders)
- Physiology (Costanzo, 4th edition, Saunders)

LEARNING EXPERIENCES: There are nine types of learning experiences in FHB, enabling the student to approach the didactic material from various perspectives. Progress in the course is assessed by objective sectional and comprehensive final examinations. A detailed FHB Course Schedule reports the session titles, times and locations for all activities within the course. This schedule should be followed carefully since planned variations occur from week to week.

- Physiology Lectures
- Small-Group Problem-Solving Sessions
- EKG Laboratory
- Conferences
- Simulations
- Review Sessions
- Exams
LECTURES: Fundamental concepts in cellular and organ system physiology and biochemistry will be presented in lecture format by the Lecturing Faculty. Each lecture will list Key Concepts and Learning Objectives to help focus your studying. Students can expect faculty to exhibit a desire to teach, provide clear explanations and answers to student questions and a desire to effectively communicate knowledge about the function of the human body.

SMALL-GROUP PROBLEM-SOLVING SESSIONS: Medical and graduate students will be assigned to one of twenty-four small groups, each consisting of six to seven students. The small groups will meet within designated learning clusters (SDLs). SGPSS Facilitators will shuttle among two to four small groups each session, but will rotate assignments on different days. Rotation of faculty in the small groups is designed to facilitate student interaction with as many different faculty as possible. Small group discussion material is included in the class notes on CD. Topics addressed in small-group sessions will be examined on written exams. Students are required to attend (sign-in sheet) and actively participate in all small groups. More than 2 unexcused absences will result in a negative professionalism comment in your final grade record. The small-group sessions also are designed to foster interpersonal and communication skills within a healthcare team.

PHYSIOLOGY LAB:
- Electrocardiogram and Blood Pressure (LAB 1): All students will record their own EKGS, blood pressure and determine their mean frontal plane vector from their EKG recordings.

CONFERENCES: Conferences are teaching sessions conducted with half the class at a time (designated as groups A & B) in the Case-Method Rooms (CMRs). Conferences focus on specific topics in a mini-lecture and/or discussion format. These sessions are designed for more interactions between students and professors, offering students the opportunity to ask and answer questions. Conference handouts accompanying lecture notes allow students to prepare appropriately before attending these important sessions.

SIMULATIONS: We have two computer simulations designed to illustrate physiological principles and concepts in a dynamic and integrative format. These sessions are presented to half the class at a time to encourage student participation.
- Cardiac Cycle and Heart Sounds (SIM 1): This computer simulation illustrates the dynamic changes in pressures and volumes of the heart and circulatory system during the normal cardiac cycle. We will also discuss the origins of the heart sounds and cardiac murmurs.
- Human Patient Simulator (SIM 2): The Human Patient Simulator (Vince) will be used to illustrate the dynamic interactions of the heart and circulatory system under normal and pathological conditions.

REVIEW SESSIONS: At the end of each section and prior to the examination for that section, voluntary reviews will be conducted by lecturing faculty in Tobin Hall (LH 190). Students having difficulty with the material are encouraged to contact individual faculty. One major mistake students make is that they fail to utilize their faculty in mastering difficult concepts. The primary focus should be on learning, not just passing exams. Students can evaluate their own understanding of the material by their ability (or lack of ability) to verbally explain physiological concepts to their peers.
EXAMS AND GRADING: There will be four course examinations following each major section in FHB plus a cumulative final exam. The cumulative final exam is an important opportunity to review and integrate the different sections of the course, to gain a comprehensive understanding of human physiology. During the administration of each exam no PDAs, cell phones, calculators or food will be permitted, and students will not be allowed to ask questions. This board-style policy promotes an even playing field for all students in the course and minimizes disruptions. Grading will be determined by raw point totals, giving equal weight to each written question. In other words, the grade will be calculated as total number of points (total number of correct answers) divided by the total number of possible points (total number of questions) in the course. The number of questions on each exam is proportional to the time spent on the individual topics (including lectures, small group sessions, conferences, labs and simulations). Typically, sectional exams have approximately 60-90 multiple choice questions, depending on the amount of material presented in each section of the course. After each exam students will receive their total of number of correct answers. Final grading categories for the course will be absolute percent scores based on total number of points as follows:

- **Honors**: 90% or higher
- **High Pass**: 80-89%
- **Pass**: 70-79%
- **Fail**: less than 70%

Those students failing to meet the minimum requirements for the course are required to meet with the course director at the completion of the course to discuss the remediation process. Students will have an opportunity to remediate their final grade by taking a comprehensive written examination during the month of July, approximately one week before 2nd-year orientation begins. Students unable to successfully remediate will receive a failing grade in FHB. Remediated passes will be recorded as a P* grade in the permanent record of the student, overtaking the F grade. It is the policy of the SSOM that no student will be permitted to graduate into the second year medical studies until all failed courses are remediated. Graduate students will be graded separately and there is no opportunity for remediation for graduate students.

EXCUSED ABSENCES: Students who are very ill or have other extenuating circumstances (i.e. death in the family) must contact the Dean of Student Affairs and the Course Director prior to missing an exam to obtain an excused absence. Excused absences are granted according to University policy, proper documentation will be required, and no exceptions will be made. You must also notify Maureen Locklund, Course Coordinator, so that alternative arrangements can be made.

EXAM REVIEWS: After the grading of each sectional exam has been finalized, students will have the opportunity to review the questions that they answered incorrectly during an Exam Review. Students having difficulties with the exams should seek advice on how to improve their performance from Dr. Pak, Course Director; Dr. DonCarlos, Assistant Course Director and/or Dr. Joshua Hopps, Director of the Academic Center for Excellence.

COMMUNICATIONS: Students will receive up-to-date information about the FHB course from the Course Director by direct e-mailings to the entire class. Students should check their Loyola e-mail accounts on a daily basis. Please be aware that emails sent from other email servers (i.e. gmail, yahoo, hotmail) might not be received by the intended faculty member due to Loyola spam filters. Clear and effective communications between faculty and students are not only necessary, but mandatory for fostering a positive learning experience.
COURSE COORDINATOR: The FHB course is supported by Maureen Locklund, course coordinator. Maureen is responsible for production and on-line posting of all course syllabi, examinations, evaluation forms, etc.

**FHB COURSE COORDINATOR:**
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- **Questions:** Dr. Pak should be contacted regarding any issues pertaining to FHB organization, attendance, grading, and other student concerns. She can be reached at her office, by email or telephone. All deliberations with students are held in strict confidence.