

# FUNCTION OF THE HUMAN BODY

## COURSE GOALS:

### **A. MEDICAL KNOWLEDGE**

- Explain the fundamental cell biological, histological and physiological properties of the major organ systems, including: the nervous system; the cardiovascular and circulatory system including the lymphatics and special circulations; the pulmonary system; the gastrointestinal system and metabolism; the renal system; the endocrine system; male and female reproductive systems.
- Describe the regulation of each of the major organ systems by neural, endocrine, paracrine, and autocrine mechanisms and the signal transduction mechanisms employed.
- Explain the fundamental principles of positive and negative feedback and describe how manipulating feedback loops can be used in clinical diagnosis.
- Explain the membrane properties and ionic current mechanisms of excitable cells, and the function of action potentials in different types of excitable cells, including neurotransmission and excitation-contraction coupling.
- Discuss the autonomic nervous system and how it regulates the major organ systems.
- Explain the impact of dysfunction of each major organ system on the other systems.
- Explain the clinical tests commonly used to assess the normal function or pathology of the major organ systems, including blood tests, ECGs, biopsies, MRIs, spinal taps, respirometry, urinalysis, endocrine challenge tests, pregnancy tests.
- Describe the major macronutrients and critical minerals, compounds, amino acids and vitamins that are essential to balanced nutrition and whole body energy balance, and the signs, symptoms, etiology and treatment/prevention recommendations for dietary deficiencies or excesses.

### **B. INTERPERSONAL AND COMMUNICATION SKILLS**

- Demonstrate the ability to effectively communicate and work collaboratively together with peers in the small group setting to successfully address problems of physiological significance.
- Contribute to the education of peers by actively engaging in small group discussion and problem solving exercises.

### **C. PRACTICE-BASED LEARNING AND IMPROVEMENT**

- Critically self-evaluate performance in the course to identify strengths and personal limitations in either physiological knowledge or the ability to integrate physiological information to use in evaluation of cases; develop learning goals to address any deficiencies and actively seek out assistance from appropriate sources to successfully remediate these deficiencies.

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- Participate in simulation and ECG laboratory sessions and self-evaluate performance and demonstrate ability to incorporate classroom knowledge of physiology into the clinical setting.

## **D. PROFESSIONALISM**

- Demonstrate professional behavior by completing all course requirements, including course evaluations, in a timely manner.
- Demonstrate professionalism by behaving in a professional, courteous and respectful manner when engaged in course activities or interacting with course faculty and staff.
- Demonstrate responsibility and accountability by attending and being punctual at all required course activities.
- Demonstrate professional behavior by requesting any excused absence from required course activities well ahead of the scheduled date.
- Demonstrate professional behavior by responding to direct communication from the Course Director in a timely fashion, particularly in circumstances when a face-to face meeting is requested to discuss issues related to academic performance.
- Demonstrate professional and ethical behavior by honestly completing course examinations without attempting to seek an advantage by unfair means; and by reporting any unethical behavior of peers to the course administration.