ESSENTIALS OF HUMAN PHSYIOLOGY 2008

Course Directors:

Dr. Lawrence Palmer: Cell Physiology
Dr. Bernice Grafstein: Nervous System Physiology
Dr. Thomas Maack: Organ and System Physiology

COURSE DESCRIPTION:

The course consists of :

1) **Assigned independent readings from textbooks of cell physiology (Blaustein, Kao & Matteson, Cellular Physiology, Elsevier), human organ physiology (Costanzo, Physiology, 3rd Ed,), and neuroscience (Neuroscience, Purves et al., 4th ed., Sinauer) followed by presentations and discussion of the readings led by the instructor.**

2) **Lectures and assignments of special topics, journal articles, and physiological problems for student presentation and discussion in class.**

3) **Physiology laboratory with mannequin simulator of physiological functions**

COURSE SCHEDULE

The course will meet on Mondays and Wednesdays on LC-504 (LC 5th Floor Conference Room) from 1:30-3:30 pm.

September 3- General Physiology I: basic cell composition (Palmer)

September 8- General Physiology II: cell resting potential (Palmer)
September 10-General Physiology III: action potential (Palmer)

September 15- no class
September 17-General Physiology IV: neuromuscular junction (Dittman)

September 22- General organization of the nervous system. Properties of peripheral nerve. (Grafstein)
September 24-Autonomic Nervous System (student presentations) (Grafstein)

September 29-General Physiology V: muscle contraction (Palmer)
October 1 - Cardiovascular System I: Cardiac electrophysiology (Palmer)

October 6- Cardiovascular System II: E-C coupling. The Heart as a Pump (Maack)
October 8- Cardiovascular System III: Systemic circulation (Maack)

October 13- Cardiovascular System IV: Integrative regulation of cardiovascular function. (Maack)
October 15- (1305 York Avenue) Simulator lab: I) Physical findings of the cardiovascular system: pulse, rate, rhythm, quality; II) Monitoring cardiovascular parameters : ECG, NIBP/arterial line, CVP catheter, PA catheter (Yoon, Palmer, Maack, Fuortes)

October 20- Respiratory System I: Organization of the respiratory system. Mechanics of respiration (Silver)
October 22- Respiratory System II: Gas exchange (Andersen)

October 27- Respiratory System III: Control of Respiration (Grafstein)
October 29- Kidney Physiology I: Organization of the kidney. Glomerular filtration. Renal blood flow. Organic solute transport (Maack)

November 3- Kidney Physiology II: Renal transport of electrolytes and water (Frindt)
November 5- Kidney Physiology III: Acid-Base Physiology (Frindt)

November 10- Problems in Body Fluid and Acid-Base (Frindt)
November 12- Gastrointestinal System I: Gastrointestinal motility (Maack)

November 17- Gastrointestinal System II: Salivary, gastric, intestinal, pancreatic and biliary secretions: mechanisms and controls (Maack)
November 19- Gastrointestinal System III: Electrolyte and nutrient transport and digestion (Maack)

November 24 -Endocrine System I: Organization. Hypothalamic-Pituitary axis. Growth regulation (Maack)
November 26- No classes

December 1 – Endocrine System II: Thyroid and Parathyroid (Maack)
December 3 - Endocrine System III: Adrenal and endocrine pancreas (Maack)

December 8 – Central nervous system I. Organization of the brain. (Grafstein)
December 10 – Central nervous system II. Sensory systems (student presentations) (Grafstein)

December 15 – Central nervous system III. Motor systems. (Grafstein)
December 17 – Central nervous system IV. Memory. (Grafstein)

December 22 – Central nervous system V. Student presentations. (Grafstein)