INSTRUCTOR: Neil B. Ford
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Topics

Introduction to Physiological Principles 1
Chemistry, Biochemistry, and Cell Physiology 3
Cell Signaling and Endocrine Regulation 4
Neuron Structure and Function 5

Test 1 (February 8)
Cellular Movement and Muscles 6
Sensory Systems 7
Functional Organization of Nervous Systems 8
Circulatory Systems 9

Test II (March 14)
Immune Systems 10
Respiratory Systems 11
Muscles and Locomotion 12

Test III (April 11)

Ion and Water Balance 13
Digestion and Energy Metabolism 14
Thermal Physiology 15
Reproductive Physiology 16

Final (May 4)

Course description:
Principles of general physiology, with emphasis on cell metabolism, nerve-muscle relations, endocrine, nervous, excretory, respiratory, circulatory, and digestive systems. Co-requisite: BIOL 3144. Prerequisites: CHEM 3342/3143, BIOL1306/1107 and BIOL 1307/1107.

Physiology Laboratory-Investigations of chemical reactions of the body and factors influencing these reactions. Co-requisite: BIOL 3343. Prerequisites: CHEM 3342/3143, BIOL1306/1106 and BIOL 1307/1107.

Course objectives:
Students will be able to:
1. Assess the processes related to physiological homeostasis
2. Understand the different ways eukaryotic cells utilize metabolic pathways to carry out physiological functions.
3. Evaluate the processes of active and passive transport, epithelial transport and endocytosis and exocytosis in eukaryotic cells.
4. Distinguish between the different types chemical receptor messengers and signal transduction pathways.
5. Propose the neurophysiological mechanism(s) for propagation of graded potentials and action potentials.
6. Understand the function of synapses and the role of neurotransmitters and neuromodulators.
7. Distinguish between the central, peripheral, and autonomic nervous systems and the function of the blood brain barrier and cerebrospinal fluid.
8. Compare and contrast the physiology of skeletal, smooth, and cardiac muscles.
9. Discriminate between the structure of exocrine and endocrine glands and their function
10. Propose a scheme for the synthesis, transport, metabolism, action and secretion of hormones and their biofeedback mechanisms
11. Evaluate the cardiovascular system as to the structures, cardio output and regulation
12. Assess the function of the plasma and cellular elements of the blood and the role of hemostasis within the vascular system.
13. Understand the mechanisms for mechanical ventilation and the exchange of gases in alveoli and tissues.
14. Understand the mechanisms that are involved with kidney function and the regulation of water and inorganic ions
15. Understand the mechanisms of how the gastrointestinal physiological processes are carried out and regulated.
16. Compare and contrast male and female reproductive physiology

Grading: Four Tests – 25% each.
Each lecture exam will consist of multiple choice, short answer, compare and contrast, and essay questions and will cover material from the lecture. No make-up exams will be given without notification prior to the exam. Chapter readings are to be used as reference material to assist with lecture material. They contain more information than you will be responsible for, so use the book with this in mind. Daily attendance is expected, (on time) and only medical excuses for missing tests will be accepted. Common courtesy is expected in class – turn off phones and pay attention!

Academic Integrity: Students should be aware that absolute academic integrity is expected of every student in all undertakings at The University of Texas at Tyler. Failure to comply can result in strong university-imposed penalties. I will notify University Administration of any cheating!

If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact Ida MacDonald in the Disability Support Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability support services accommodation(s) must provide appropriate documentation of his/her disability to the Disability Support Services counselor. In order to assure approved services the first week of class, diagnostic, prognostic, and prescriptive information should be received 30 days prior to the beginning of the semester services are requested. For more information, call
or visit the Student Services Center located in the University Center, Room 282. The telephone number is 566-7079 (TDD 565-5579)." Additional information may also be obtained at the following Web address: http://www.uttyler.edu/disabilityservices.

It is the policy of the University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number.

Grade Replacement: If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to file intent to use grade forgiveness will result in both the original and repeated grade being used to calculate your overall grade point average.