BIO 338 Human Physiology

Summer 2024

Course Credits: 4
Contact Hours: 56 hours
Instructor: TBA
Email:TBA

COURSE OBJECTIVES

This course is a comprehensive study of the structure and function of the human body systems. Building upon foundational knowledge acquired in previous courses, this course delves deeper into the intricate workings of various physiological systems. Topics covered include the cardiovascular system, respiratory system, lymphatic system, endocrine system, urinary system, digestive system, and reproductive system. Additionally, the course explores the principles of fluid and electrolyte balance within the body.

Upon Completion of this Course, students will be able to:

1. Demonstrate an understanding of the structure and function of the cardiovascular system;

2. Explain the function and importance of the lymphatic system in immune response;

3. Understand the role of the endocrine system in regulating various physiological processes;

4. Describe the anatomy and function of the urinary system and its role in waste excretion;

5. Demonstrate knowledge of fluid and electrolyte balance and its significance in maintaining homeostasis.

PREREQUISITES

N/A

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
2 Labs	20 Points
Midterm 1	15 Points
Midterm 2	15 Points
2 Papers	20 Points
Final Exam	30 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

A ≥ 90 > B ≥ 80 > C ≥ 70 > D ≥ 60 > F.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Lauralee Sherwood, *Human Physiology: From Cells to Systems*, 9th Edition, Brooks Cole, 2015.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	**Topics:** Topic 1: Overview of Cell Structure and Function Topic 2: Membrane Transport Mechanisms Topic 3: Membrane Potential and Action Potentials Topic 4: The Nervous System: Neurons and Synapses **Assessments:** Lab 1

Module 2	**Topics:** Topic 5: The Central Nervous System: Brain and Spinal Cord Topic 6: Peripheral Nervous System and Sensory Receptors Topic 7: Autonomic Nervous System and Neurotransmitters Topic 8: Muscular System: Skeletal Muscle Structure and Function **Assessments:** Paper 1
Module 3	**Topics:** Topic 9: Muscle Contraction Mechanism: Sliding Filament Theory Topic 10: Smooth and Cardiac Muscle Physiology Topic 11: Endocrine System: Hormonal Regulation and Signaling Topic 12: Hormones and Their Functions in Regulation **Assessments:** Midterm#1 Lab 2
Module 4	**Topics:** Topic 13: Cardiovascular System: Heart Structure and Function Topic 14: Cardiac Electrophysiology and Conduction System Topic 15: Blood Vessels and Blood Pressure Regulation Topic 16: Respiratory System: Pulmonary Ventilation and Gas Exchange **Assessments:** Midterm#2 Paper 2
Module 5	**Topics:** Topic 17: Respiratory Control and Regulation of Breathing Topic 18: Digestive System: Anatomy and Physiology of Digestion Topic 19: Absorption and Nutrient Transport in the Digestive Tract Topic 20: Urinary System: Renal Function and Regulation of Fluid Balance **Assessments:** Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

1) Late assignments are not acceptable and are subjected to grade deductions.

2) Assignments submitted in the wrong format will be counted as not submitted.

3) Failure to submit or fulfill any required course component results in failure of the class.

4) Make-up for midterm and final exams only with valid excuses, as defined by the University.

5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACEDEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.