JOHN JAY COLLEGE OF CRIMINAL JUSTICE
THE CITY UNIVERSITY OF NEW YORK
Biology 355: Fall 2012

Instructor: Prof. Nathan H. Lents, Ph.D.

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Lecture: 5th-6th Period, Wednesdays (2:50p – 5:30p)
Room:

Textbook:

Human Physiology: An Integrated Approach (6th edition). *Mastering A&P package required*
by Dee Unglaub Silverthorn. Benjamin Cummings Publishers (Pearson), ©2011

Course description: This lecture course will explore the molecular physiological function of the cells, tissues, organs, and organ systems of the human body. Special attention will be paid to homeostasis and the integrated coordination of these diverse organ systems, the pathophysiology of common diseases, and pharmacological strategies to treat the underlying pathology. In addition to in-class examinations, students will research and deliver class presentations on diseases throughout the semester.

Hours: 3, Credits: 3
Prerequisites: Bio104, Che103 (or Che101 plus Che102), Eng201 (or Eng102)

Learning Goals:

After taking this course, students will be able to:

Knowledge:

- Understand the histological structure of major tissues and organs
- Describe the purpose, function, and structural arrangement of the major organ systems of the human body
- Explain in detail the molecular mechanism of action of the major organs and cell types of the human body
- Identify major pathological diseases of each human organ system and their basic cause

Reasoning:

- Apply knowledge of physiology to case studies of human disease
- Define the physiological mechanism of action of major classes of pharmaceuticals
- Explain how multiple organ systems integrate together to maintain homeostasis
- Explain how some common pathophysiological treatment strategies work
- Students will understand the basic concepts in the field of human biology**:**
- Structure and function of major human cell types and tissues
- Basic anatomy and detailed physiology of the following human organ systems: digestive, circulatory, respiratory, excretory, reproductive, nervous and motor systems
- Pathophsyiology and Pharmacology treatment strategies of many common human diseases and conditions
- Students will be able to research, prepare, and deliver oral presentations to a scientific audience

You must check Blackboard and your John Jay E-mail account regularly.

You are responsible for any and all course information, assignments, announcements, and communication that occurs through blackboard and/or your email account.

Important Course Policies

Statement of the College Policy on Plagiarism: Plagiarism is the presentation of someone else's ideas, words, or artistic, scientific, or technical work as one's own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.
It is the student's responsibility to recognize the difference between statements that are common knowledge (which do not require documentations) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has free guides designed to help students with problems of documentation.

Americans with Disabilities Act (ADA) Policies: Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office of Accessibility Services (OAS). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility from the OAS which is located at L66 in the new building (212-237-8031). It is the student's responsibility to initiate contact with the office and to follow the established procedures for having the accommodation notice sent to the instructor.

The grade for the Bio-355 course is a composite of three in-class examinations, two oral presentations (one in-class and one recorded digitally), completion of online homework, grades on in-class quizzes, and participation and performance during in-class group work on "case studies." All three exams will count. If you miss an exam (or foresee that you will miss an exam) for any reason, you MUST contact the instructor ***as soon as humanly possible***. You may be allowed to take the exam late (or early). However, you are ONLY eligible for this one-time consideration if you contact the instructor immediately and you arrange to take the exam BEFORE the corrected exams are handed back to the class. In all other cases, the missed exam **WILL** count as a ZERO. (Exception: a *documented* medical or family crisis may result in being excused from an exam, but this will only be allowed ONCE. Further missed exams will count as a zero, regardless of reason.)

Exam One	*15%*
Exam Two	*15%*
Exam Three	*20%*
Online Homework	*10%*
In-class Quizzes	*10%*
Case Studies	*10%*
In-class Presentation	*10%*
Disease Presentation	*10%*
Total	*100%*

93.0 and above	A
90.0 - 92.9	A-
87.0 - 89.9	B+
83.0 - 86.9	B
80.0 - 82.9	B-
77.0 - 79.9	C+
73.0 - 76.9	C
70.0 - 72.9	C-
67.0 - 69.9	D+
63.0 - 66.9	D
60.0 - 62.9	D-
below 60.0	F

Disease Presentation Grade:	
History/Discovery of the disease:	10pts.
Prevalence, Genetics:	10pts.
Symptoms, Clinical Presentation:	10pts.
Relevent *normal* physiology:	20pts.
Cause/Pathophysiology:	25pts.
Past and Current Treatment:	10pts.
Prognosis:	5pts.
Current Research, Future Cures:	10pts.
Total:	100pts.

Online Homework: There will be one or two homework assignments due each week assigned through the online program Mastering A&P, access to which must be purchased by each student if not already bundled with the required textbook. All homework assignments, regardless of length, are of equal weight and combine to comprise 10% of the final course grade. Homework submitted after the due date will be accepted with a penalty of 5% per day. The lowest two homework grades will be dropped before final calculations are made.

In-class quizzes: There will be at least one, and usually two, in-class quizzes each week. These quizzes will cover the required reading and the homework assignment for the day, and additional preparation instructions will be given by the instructor. Missed quizzes cannot be made up under any circumstances. All quizzes, regardless of length, are of equal weight and the combined grades will comprise 10% of the final course grade. The lowest three quiz grades will be dropped before calculations are made.

Case Studies: Each week, the class will be broken into groups of two to three students. Each group will be given several "case studies," which are examples of real physiological, pathophysiological, or pharmacological scenarios in which the knowledge covered by the chapter hand can be used to illustrate or solve a problem. Each case study will involve several questions to answer and problems to solve. Students will be allowed to use their textbook, and other materials provided or approved by the instructor, to look up information and prepare their responses, which will be presented to the class. Each group must work together to delegate the questions to each member to research and comprise a coherent and organized presentation of the answers. However, the instructor and other students may ask follow-up questions of any member, which can affect her/his grade. Each student will receive a single grade for their performance in the case study presentations, which will be determined by: 1.) the completeness and correctness of the group presentation, 2.) the student's performance on her/his part of the group presentation, 3.) the student's performance on follow-up questions from the instructor or fellow students, and 4.) the student's contribution of thoughtful and insightful questions of other groups. The grades for the case studies will be combined to form 10% of the final course grade. The two lowest case study grades will be dropped before calculations are made.

The oral presentations: Students will deliver two oral presentations for this class, each between 10 and 15 minutes in duration. <u>One presentation will occur during class time</u>, and will cover one of the major themes or concepts of the day's topic. During the first week of class, the instructor will establish a schedule for these presentations for the entire semester and students must deliver their presentation as scheduled, unless a schedule change has been approved by the instructor. <u>The second presentation must be digitally recorded</u> and submitted to the instructor by the scheduled due date. The simplest format is an animated PowerPoint presentation with recorded voice clips, but any similar digital presentation style will be accepted *as long as the final presentation is deliverable to the entire class through the Blackboard page*. The required technology for recording such a presentation is freely available to students through the department of instructional technology; thus, it is the student's responsibility to develop and record the presentations without technical guidance from the instructor. The topic for the second presentation will be a disease, ailment, or intoxication of the student's choosing that is especially relevant to the physiology being studied in class around the given time period. However, the student *must* receive prior approval from the instructor regarding the selection of the disease to ensure that the disease is a good choice for illuminating physiology, has not been done by another student in recent semesters, and will not already be covered by case studies or detailed in-class examples. Each of the two presentations is worth 10% of the final course grade.

Class absences: Attendance will not be taken. However, students that are not present for a quiz receive a grade of zero and quizzes can never be made up for any reason. Similarly, absent students will also receive a grade of zero for the missed work in the case studies, which are an in-class learning experience that cannot be made up. Regardless of the reason for the absence, students may drop their lowest three quizzes and their lowest two case study grades, including zeros. However, absences that result in zero grades beyond the allowed drop limit cannot be dropped, except in the case of medical or family emergency or crisis that is supported by documentation and judged by the instructor to be of sufficient hardship or severity.

Lecture Schedule

#	Date	Topics	Textbook
1	Aug 28	Cells and Tissues	Chapter 3
		Cell membranes and Transport	Chapter 5
		Cell Communication and Integration	Chapter 6
2	Sep 05	Neurons: Excitability, Action Potentials, Synapses	Chapter 8
3	Sep 12	Central Nervous System	Chapter 9
		Sensation/Perception	Chapter 10
4	Sep 19	The Autonomic Nervous System	Chapter 11
		Neurotransmitters, tone, pharmacology	Chapters 8-11
	Sep-26 – No classes scheduled		
5	***Oct 03***	***Exam #1: Chapters 3, 5, 6, 8-11 (75 minutes only)***	
	also Oct 03	Muscle Tissue: Excitation/Contraction	Chapter 12
	Oct-10 – Classes follow a Monday Schedule		
6	Oct 17	Cardiovascular Physiology: The heart	Chapter 14
7	Oct 24	Blood Flow and Blood Pressure	Chapter 15
8	Oct 31	Respiratory Physiology	Chapter 17
		Cardiovascular: Oxygen Transport	Chapter 18
9	Nov 07	Structure/Function of the Kidneys	Chapter 19
		The Urinary System: Salt and pH Homeostasis	Chapter 20
10	***Nov 14***	***Exam #2: Chapters 12-19 (75 minutes only)***	
	Nov 14	Endocrine System: types, functions of hormones	Chapter 7
11	Nov 21	The Digestive System	Chapter 21
		Homeostasis and metabolism	Chapter 22
12	Nov 28	Reproduction: Hormones and Menstrual Cycle	Chapter 26
		Reproduction: Pregnancy and Development	Chapter 26
13	Dec 05	Blood	Chapter 16
		The Immune System	Chapter 24
14	Dec 12	Review for Exam #3	

Wednesday, Dec 19 5:30p – 7:00p EXAM #3: Chapters 20-24

Date of in-class presentation: _____ Due date of recorded presentation: _____