

Biology 251 Syllabus Fall 2014
Tues and Thurs 12:00 – 1:15 PM

Instructor: Dr. Patrick A. Carter
Office: Heald 217
Office Hours: Mon 3:00 to 3:50; Tues & Thurs 1:15 to 2:00; or by appointment
Textbook Bundle: Stanfield. *Principles of Human Physiology*, 5th Edition. PhysioEx 9.0 lab book & cd, and Interactive Physiology 10 System Suite cd, bundled with the textbook. Available at the Bookie and Crimson and Gray.
Lab Manual: *Zoo 251 Lab Manual*. Available at the Bookie or Crimson and Gray.
Required Software: *Top Hat*. Will be used for in-class quizzes and information dissemination. You will be contacted by Top Hat directly and will be charged \$20 when you register on their website.
Top Hat URL: tophat.com/e/430990
Top Hat Text: +1 (315) 636-0905
Class Web Page: <http://www.wsu.edu/~biol251/>
Instructor email: pacarter@wsu.edu

Course Objectives: Most students in Biology 251 are pursuing careers in Health or Exercise Sciences. For many of you, Biology 251 will be your primary exposure to human physiology while an undergraduate. You need to learn how the healthy human body functions before you can learn in future classes how exercise, disease and injury alter function. My objective in teaching this course is to ensure that you learn human physiology well enough to be successful in future classes, professional exams, and careers. Your task is to read the assigned pages in the textbook, attend lectures and laboratories and study and **THINK** about the material. By doing this, you will be able to perform well on exams and quizzes, you will learn the material well enough to be able to use it in your future classes and career, and you will make this course a satisfying intellectual experience.

Student Learning Outcomes: The School of Biological Sciences has 6 Student Learning Outcomes (SLOs) which all SBS majors must strive to master. A course can focus on one or more of these SLOs. In Biol 251 you will be exposed to all 6. Here are the SLOs and how you will achieve them:

SLO	Class Activity
1. Understand and explain major biological concepts.	Fundamental goal of lecture and lab is to teach core concepts in physiology.
2. Use critical thinking and scientific skills to analyze and solve problems.	Lab exercises, quiz and exam questions will require critical problem solving abilities.
3. Effectively communicate biological problems and solutions to both the scientific community and the public at large in writing and in discussion.	Lab write-ups; formal lab report; formal and informal discussion in lab and lecture.
4. Formulate logical hypotheses and test them by designing and running appropriate experiments or observational studies and analyses.	Experiments in the laboratory portion of the course.
5. Identify the central body of knowledge in biology or zoology (genetics, evolution, ecology and organismal biology, molecular biology).	Physiology is a central component of organismal biology; lecture and lab will teach the major concepts of this area of biology.
6. Use scientific literacy and knowledge of biology or zoology to analyze contemporary social, cultural, and environmental issues and contribute to informed opinion.	Use knowledge of human physiology to assess contemporary issues in human medicine in lab and lecture discussions, quizzes and exams.

How to Do Well: This course covers a great deal of complex and interrelated material. You must understand topics covered early in the course to be able to comprehend information presented later in the course, and you will have to be able to integrate material that you learn throughout the course. Therefore it is imperative that you do not fall behind. You can take several steps to increase your ability to comprehend and remember material.

- 1) Do the assigned reading for a topic **BEFORE** the lecture *even if* you don't understand all the details at first. Being familiar with topics beforehand will allow you to get the most out of lecture.
- 2) When reading a given chapter, **first skim the section called "Chapter Summary"** at the end of the chapter to get an overview of the important concepts in the chapter, then read the chapter itself.
- 3) Within 24 hours of a lecture, **rewrite your lecture notes, practice drawing crucial figures, REVIEW ANIMATIONS** on the Interactive Physiology cd, *and write practice exam questions* on that lecture. This will force you to review and integrate the material while it is fresh in your mind, and it will provide you and your friends with practice exams to take before each real exam.
- 4) Topics in this course build on each other. For example, you must understand electrochemical gradients to understand how neurons function, and you need to understand how neurons function to understand muscle function, and you need to understand muscle function to understand cardiac function. **Thus make sure that when you study a topic, you understand it well enough to be able to remember it and use it later in the course.**
- 5) Do NOT fall behind in your reading and studying; you will find it impossible to catch up once you fall behind in a course of this type. *To learn this material, you WILL have to spend numerous hours outside of class reading and studying.* Make sure you set aside regular times outside of class to work on the course material; you should plan on at least 6 to 8 hours per week of study time.

Class Notes: My lecture notes for each class meeting will be available on the course web page (<http://www.wsu.edu/~biol251/>) by 5 PM the day before the lecture. **Bring these notes to class.**

Exams and Grades: Your final grade will be determined from exam scores and from the laboratory score; you will be assigned a final letter grade based on your total course points. **The total number of points available is 500:** 250 of these come from semester exams, 100 come from the cumulative final, 100 come from the lab, and 50 come from in-lecture quizzes. No extra credit will be available.

All grading scales are "curved". Traditionally, the mean score plus or minus one standard deviation is given a grade of C, scores between plus 1 and plus 2 standard deviations are given a B, scores greater than plus 2 standard deviations are given an A, scores between minus 1 and minus 2 standard deviations are given a D and scores less than minus 2 standard deviations are given an F.

I use a slight variant of this system that offers a big incentive to students to do well and that is easy to understand. **I only curve "up", and when I do, I adjust the mean to a 70%** to facilitate translation of the curved scale to the letter scale with which most students are familiar. So, for example, if the mean score is 65%, all students have 5% added to their scores to bring the mean up to a 70%. However, I never curve "down"; if the mean is an 80%, I leave it at 80%; I do NOT take 10% away from each student's score. This means that all students in the class could earn A's and B's. In addition, score standard deviations in the class tend to be large, so the "C range" is larger than in a traditional system.

Once the curve has been adjusted (if needed), letter grades are assigned as follows:

A = 92.50% and up
A⁻ = 90.0% to 92.49%
B⁺ = 87.50% to 89.99%
B = 82.50% to 87.49%
B⁻ = 80.0% to 82.49%
C⁺ = 75.0% to 79.99%
C = 65.0% to 74.99%
C⁻ = 60.0% to 64.99%
D = 50.0% to 59.99%
F = 49.99% or less

You will have **four 75 minute in-class semester exams that will be worth a grand total of 250 points**. Exams may contain multiple choice, short answer, essay, true-false, and/or matching questions. Each of these exams will cover between 5 and 7 topics worth of material and will be scored according to the amount of material. Exam 1 will cover 5 topics and be worth 54 points. Exam 2 will cover 5 topics and be worth 54 points. Exam 3 will cover 7 topics and be worth 78 points. Exam 4 will cover 6 topics and be worth 64 points. *Exam questions will be written from material covered in lecture and/or the notes; I will also give several questions on every exam that will require you to integrate or apply knowledge in novel ways.*

If the point total on your exam was summed incorrectly, please see me **immediately**, and I will fix the problem. Ensure that your exam total is the sum of all the points you received on the exam. If you think that you supplied a correct answer for a question, but did not receive points for that answer, you have **SEVEN DAYS** after receiving your graded exam in which to resubmit your exam to me, with a **WRITTEN** explanation of which points you should receive and why you should receive them. I will **NOT** entertain verbal requests for additional points.

The **final exam** will be on Tuesday 16 December from 8:00 to 10:00 AM, will be in multiple choice format, and will be worth 100 points. You will have 2 hours to complete the final exam.

Review sessions will be held prior to each semester exam and before the final exam. Dates and times will be announced the second week of class. A **Study Guide** and **Review Questions** from previous exams will be provided prior to all semester exams and the final exam.

If you miss an exam, you will receive a score of 0 for that exam. *If* you have what *I* consider to be a legitimate excuse for missing an exam, and *if* you inform me of this **before** the exam, you will be allowed to take a cumulative make-up exam on Thursday 11 December at 1:30 PM in Heald 201. **NO make-up for the FINAL exam will be given.** Missing more than 1 exam will result in a grade of F or I for the course.

The **laboratory** is worth 100 points, which is 20% of your total grade. This grade will be determined from quizzes and assignments given during lab and from a formal lab report which is worth 25% of your lab grade. **It is quite difficult to make up missed labs, and missing more than two labs will result in an F or I for the course.** Laboratory scores are normalized across TAs at the end of the