

## SUMMER 2013 BIO 212 Human Physiology Syllabus

**INSTRUCTOR:** Professor Dana Merriman, Department of Biology & Microbiology  
Office: Halsey 249 Phone: 424-3076 Email: [vaughan@uwosh.edu](mailto:vaughan@uwosh.edu)  
Schedule - including office hours - is posted on D2L Content.

**CLASS MEETING TIMES & PLACES:** Lecture MTWR, 10:30-12:00 am, Halsey 266  
Labs MW or TR, 1:00pm-3:00pm, Halsey 120\*  
\*Unless otherwise noted on lab schedule below  
**LABS DO MEET THE FIRST DAY OF CLASS!**

**As a legal adult, absences from class meetings are at your discretion.  
Be advised that any such absences will hurt your grade.  
Absences from exams & quizzes are subject to course policies; see below.  
Exams are NEVER given early, so don't even ask; see below.**

**PREREQUISITES:** **BIO 105** "Introductory Biology: Unity", grade of C or better; and **BIO 211** "Human Anatomy", grade of C or better. Based on these prereqs, I make assumptions about what you already know. See D2L Content's file called "What you already know" to review. We will also hold required review sessions in lab the first week of classes.

### REQUIRED MATERIALS:

- **TEXTBOOK:** Custom Fox's Fundamentals of Physiology, 13<sup>th</sup> edition, McGraw-Hill. You are URGED by your major programs to KEEP it for reference in future courses in their departments.
- **LAB MANUAL**

**TUTOR** availability will be announced on D2L's home page for this course.

**POWERPOINTS** will be uploaded to D2L, 1-2 days after lecture is given.

**PODCASTS** will be recorded and posted to D2L, but your instructor cannot be responsible for any failures to post.

**STUDENTS WITH DISABILITIES ARE WELCOME IN THIS COURSE.** Please contact Dr. Merriman the **FIRST DAY OF CLASS** so that we may arrange all possible accommodation ahead of time. There is a course-specific form for you to fill out and hand in to Dr. Merriman that is posted on D2L Content for your convenience.

**EMAIL COMMUNICATION and D2L** will be used frequently throughout the semester to communicate between Instructors and Students. Emails and D2L constitute legal, official University communication. Not checking your email or D2L is not an excuse for performance problems in the class. Contact Academic Computing for assistance with email and D2L.

**ACADEMIC HONESTY** policies are clearly defined at this University and all students are expected to abide by them. Penalties for violations are severe in this course, in part because so many students enrolled in it are aiming for employment in the health care field where honesty and integrity are a matter of life and death. Cheating on an exam (including looking at someone else's paper) at a **MINIMUM** leads to zero on that exam, with no opportunity for a make-up or extra credit. A second offense is an F in the course and a report to Dean of Students.

## **COURSE OBJECTIVES**

1. To understand the central physiological principle of **HOMEOSTASIS**.
2. To understand physiological **SYSTEMS INTEGRATION**.
3. To understand physiology on **MOLECULAR to ORGAN SYSTEM** levels.
4. To build physiology **VOCABULARY & QUANTITATIVE SKILLS**.
5. To prepare students for **FURTHER PHYSIOLOGY COURSEWORK** such as Exercise Physiology or Pathophysiology.

## **ABOUT DOING YOUR BEST**

1. Always attend class and take notes.
2. Read ahead, and re-read. Use the index and Table of Contents.
3. You can't forget what you learned in the first week. It's all important.
4. Recognize that physiology is *not* anatomy; memorization is of *far less use* in physiology; instead you must think about mechanisms in motion that you cannot see. Moreover, physiology content is like a spiderweb, not a line; information builds on information and "cross-links" with other information.
5. Consider joining a study group where you talk about the material and do problems out of the text to rehearse the material.
6. Look for the homeostatic patterns in everything you learn. The body has a few tricks that it uses over and over again. By midway through the class, there is not so much new information as repackaged information.
7. Rewrite your notes each week into "study posters" where you consolidate all the information given on a particular topic no matter what date it was taught. Working on study posters each week with your study group would be excellent. Examples of study poster topics are: Joe Cell, Making ATP, Red Blood Cells, Body pH, Digestion, Moving a Muscle. You'll think of others...

## **ABOUT READING**

Even without specific reading assignments, you are expected to read the Fox textbook nearly cover to cover this term, except for the chapter on Immunology which will be covered rather superficially.

Knowing what to read, and when, is based on:

- a. Lecture and lab topics in the order presented; see Table of Contents and Index for specific pages and illustrations.
- b. Diagrams from the text displayed in lecture or lab
- c. Any specific assignment mentioned in lecture or lab
- d. Your own individual learning needs (e.g. going back to review information that gave you problems on an exam)

Students taking this course as a major requirement for a particular major (e.g. Nursing, Athletic Training) are urged by those Departments to keep this book for reference during future courses in advanced aspects of human physiology.

## ABOUT LECTURE

- Summer session lectures are long: 90 minutes. We will NOT be taking ANY breaks! Figure out what it takes for you to remain alert throughout. Arriving hydrated and not too hungry are important starts. Keeping your hand in motion by taking notes or even doodling will help also.
- Attend every lecture and remain engaged by taking notes. I will teach you useful shorthand to help improve your note-taking.
- Read the textbook to supplement lecture and lab.
- I will take questions during lecture but also be sure to ask questions during lab or on the D2L Discussion board. Do not wait until right before an exam to ask a question; learning takes time to “sink in” (the formal term for this is “memory consolidation”).
- Please do not chat, text, or surf the web during lecture as this disturbs other students.

## ABOUT EXAMS

- Lecture exams will occur during three evenly-spaced lecture periods of our summer term. The 30 minutes prior to each exam will be open Q&A, then each exam will last 60 minutes.
  - Wednesday June 26
  - Wednesday July 17
  - Thursday August 2
- Attendance is required at all exams. There are no make-up exams in summer session due to the accelerated time frame.
  - **Take exam early? NEVER. Please don't even ask.**
  - **Take exam late? RARE, requires documented medical/bereavement excuse.**
- Exams are NO notes, NO book, NO hat, NO electronics, NO neighbor.
- Exams are cumulative (all information builds on itself in physiology). Questions will emphasize material covered since the previous exam.
- Question format will be Multiple-Choice, All-That-Apply. To help you learn this type of examination, I will post old exams on D2L (but *not the answers*; working those out should be part of your study strategy).

## ABOUT LAB

- During summer session, you will attend two 2-hour labs per week.
- Labs meet every week (including the first day of summer session) except as noted below and in the lab manual.
- You'll need your own personal copy of the lab manual on sale at the bookstore.
- Starting in the 3<sup>rd</sup> lab, quizzes will be given in lab over the previous lab. The lowest quiz score will be dropped.
- Ask me for permission to switch to a different lab section.
- Lab grades will be combined to contribute 30% of your final course grade.

## ABOUT FINAL COURSE GRADES

Grades for each exam will be posted on D2L in a timely fashion. Regardless of point value, all assignment grades will be converted to percentages. Then they will be added together in a weighted fashion as follows: Exam 1 = 10%; Exam 2 = 20%; Exam 3 = 40%; Lab = 30%. D2L will display your “final” grade in real-time as exams are completed. To compute your final course grade, I’ll use the scheme shown below which incorporates the +/- letter grade format that the entire University has adopted.

Letter Grade	%	Grade Points per Unit (cr.)
A	92.0-100	4.00
A-	90.0-91.9	3.67
B+	88-89.9	3.33
B	82.0-87.9	3.00
B-	80.0-81.9	2.67
C+	78.0-79.9	2.33
C	72.0-77.9	2.00
C-	70.0-71.9	1.67
D+	68.0-69.9	1.33
D	62.0-67.9	1.00
D-	60.0-61.9	0.67
F (Failure)	<60.0	0.00

### Schedule/Lecture Exams:

- Exam 1, Wednesday June 26 (worth 10% of grade)
- Exam 2, Tuesday July 17 (worth 20% of grade)
- Exam 3, Thursday August 2 (worth 40% of grade)
- Lab grade computed by Wednesday August 7 (worth 30% of grade)

Note: I must leave town immediately after Exam 3 on Thursday August 2 (to attend a research conference) so I regret that I will be unable to answer questions about Exam 3 until I return to campus on Monday August 5.

Final course grade will post on TitanWeb by 5 pm on Wednesday August 7<sup>th</sup>.

### Schedule/Lab Quizzes (lowest dropped; quiz average worth 30% of grade)\*:

Lab Quiz schedule is shown in the chart located 2 pages below.

\*Instructor reserves right to penalize lab grade earned from quizzes for poor participation.

## **Schedule/Lecture Topics:**

Calendar dates are not stated for lecture topics as it's hard to know exactly how long a unit will take. Examination cut-offs in the material are date-based, not content-based.

Many of the same topics will be taught in lab as well. We will do our best to have lab and lecture topic synchronized but this cannot be guaranteed.

- Homeostasis & Feedback Loops (Ch 1)
- Biochemistry & Metabolism (Ch 2 )
- Membrane Transport (Ch 3, Ch 6)
  - Anatomy review: Fig 3.2
- Neurophysiology (Ch 7-8-9)
  - Anatomy review: Figs 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 7.8, 7.10, 7.24, 8.1, 8.4, 8.5, 8.15, 8.19, 8.20, 8.24b, 8.25, 8.27, 8.28, 9.1, 9.2, 9.5, 9.6
- Sensory Physiology (Ch 10)
  - Anatomy review: Figs 10.7, 10.9, 10.12, 10.18, 10.19, 10.27, 10.30, 10.31, 10.32
- Endocrinology (Ch 11, Ch 19)
  - Anatomy review: Figs 11.1, 11.12, 11.18, 11.21, 11.27, 11.29
  - Exocrine anatomy review: Figs 1.22, 18.6, 18.25, 20.51
- Muscle Physiology (Ch 12)
  - Anatomy review: Figs 12.1, 12.2, 12.3, 12.5, 12.15, 12.27, 12.32, 12.33, 12.35
- Cardiovascular Physiology (Ch 13-14)
  - Anatomy review: Figs 13.1, 13.3, 13.10, 13.11, 13.20, 13.26, 13.27, 13.29, 13.36, 13.37, 13.38, 14.7
- Immunology (Ch 15)
  - Anatomy review: Fig. 13.38
- Respiratory Physiology (Ch 16)
  - Anatomy review: Figs 16.1, 16.2, 16.4, 16.5, 16.13, 16.20
- Osmoregulatory Physiology (Ch 17)
  - Anatomy review: Figs 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.8, 17.26
- Gastrointestinal Physiology (Ch 18)
  - Anatomy review: Figs 3.6, 18.2, 18.3, 18.5, 18.6, 18.9, 18.10, 18.11, 18.16, 18.21, 18.25
- Reproductive Physiology (Ch 20)
  - Male anatomy review: Figs 20.11, 20.19, 20.20
  - Female anatomy review: Figs 20.33, 20.24, 20.25, 20.51

## Lab Schedule:

**Just because there is “NO LAB” doesn’t mean there is “NO LECTURE”!!!**

Helpful readings in the Fox text are listed for most labs.

If only page numbers are given, you should look at the figures on those pages as well as read the accompanying text.

June 10-11	Pre-test taken “cold”, then review of BIO 105 & 211 concepts	HS 266
June 12-13	Post-test	HS 266
June 17-18	Lab orientation; quantitative skill rehearsal	HS 120
June 19-20	Q1, then Erythrocyte Physiology Helpful Fox text pp and Figs: 13.10, 401-8, 16.1, 551-560	HS 120
June 24-25	Q2, then Pulse and Pressure Helpful Fox text pp and Figs: 13.16, 419, 14.9, 14.16, 14.25, 472-480	HS 120
June 26-27	Q3, then Bioelectricity of the Brain Helpful Fox text pp and Figs: 146-150; 170-171; 210-11	HS 120
July 1-2	Q4, then Brain Imaging Helpful Fox text pp and Figs: 209-210, 14.22	HS 266
<b>July 3</b>	<b>NO LAB</b>	<b>NO LAB</b>
<b>July 4</b>	<b>NO LAB, NO LECTURE</b>	<b>NO LAB</b>
July 8-9	Q5, then Bioelectricity of Skeletal Muscle Helpful Fox text pp and Figs:	HS 120
July 10-11	Q6, then Bioelectricity of Cardiac Muscle Helpful Fox text pp and Figs: 420-6, 434-437, 14.1	HS 120
July 15-16	Q7, then Leukocyte Physiology & Blood Typing Helpful Fox text pp and Figs: 13.36, 13.37, 13.38, 404-410, 15.1,15.6	HS 120
July 17-18	Q8, then Ventilation Helpful Fox text pp and Figs: 533-6	HS 120
July 22-23	Q9, then Urinalysis	HS 120
July 24-25	Q10, then Capstone: Diabetes Helpful Fox text pp and Figs: 674-8	HS 266
July 29-30	Q11, then Film & Discussion: Is it a boy or a girl?*	HS 266
<b>Jul 31-Aug 1</b>	<b>NO LAB</b>	<b>NO LAB</b>

\*Exam 3 will contain questions on this lab