

PHYSIOLOGY 335 (5 Credits)
Fall 2014 Syllabus

LECTURES: 8:50-9:40 MWF (B10 Ingraham)

LECTURERS: Kevin Strang, PhD
Room 137/139 SMI
Phone: 262-8298
kstrang@wisc.edu

Andrew Lokuta, PhD
Room 136B SMI
Phone: 263-7488
ajlokuta@wisc.edu

Beth Altschafel, PhD
Room 137 SMI
Phone: 890-1865
altschafel@wisc.edu

LAB INSTRUCTOR:

Grace Lee, PhD
Room 137 SMI
Phone: 265-3362
glee1@wisc.edu

TEACHING ASSISTANTS:

Sonalee Barthakur
Devon Moloney
Ashley Mulchrone
Kriti Rishi
Joe Sepe
Stephanie VanRiper

barthakur@wisc.edu
ddmoloney@wisc.edu
amulchrone@wisc.edu
krishi@wisc.edu
sepe@wisc.edu
svanriper@wisc.edu

PREREQUISITE COURSES: At a minimum, background knowledge gained in Introductory Biology and Chemistry is assumed.

WEB PAGE: Grades, announcements, and course materials will be posted electronically on Learn@UW: <https://learnuw.wisc.edu> If you are unfamiliar with this web tool, or experience difficulties accessing the site, please contact Dr. Altschafel or call the DoIT Help Desk (264-4357).

PURPOSE OF THE COURSE: Physiology is one of the most fascinating and relevant of all college subjects. In this one-semester course you will study all of the major systems of the human body so that you can develop a broad, integrated understanding of function from the cellular to the organ-system level. This information is essential foundation for students from a wide variety of basic science and pre-clinical majors, including: Nursing, Pharmacy, Biology, Kinesiology, Biomedical Engineering, Dietetics, Biochemistry, Physician Assistant, Zoology, and many others. But Physiology is far more than just an academic prerequisite. It is an instruction manual for your body! Each one of us faces a *lifetime* of decisions about things affecting our health and happiness: eating, dieting, dietary supplements, exercise, illness, accidents, surgery, over-the-counter medications, prescription medications, recreational drugs, aging, and dying. An understanding of physiology will help you make good, informed decisions, and protect you from the clamor of marketers who are focused more on your dollars than on your health. Regardless of whether you are taking Physiology to prepare for a healthcare career, to become an informed consumer, or simply to indulge your curiosity about the human body, if you apply yourself we're certain you'll learn something useful.

NOTES: Course packets should be purchased from Student Print Services at 333 East Campus Mall Room 3301. Additional handouts will be distributed in class, on Learn@UW, or in lab.

LAB: The lab experiments provide active hands-on learning. The *Laboratory Manual for Elementary Physiology* prepared by Department of Physiology Staff should be purchased from Student Print Services at 333 East Campus Mall Room 3301. Pre-lab assignments are to be completed before the beginning of your scheduled laboratory session. Post-lab quizzes will be completed during laboratory sessions and are closed-book.

DISCUSSION: Weekly discussions led by teaching assistants give students an opportunity to ask questions in a small-group setting. Because we want you to succeed in the class and data show that discussion attendance helps learning, a 0.5% addition to the final score will be given to all students who attend 10 or more discussions.

EXAMS: Four multiple choice electronically scored exams will be given during the semester. The examination schedule is as follows (note *evening times* except for final):

EXAM I	Tuesday Sept 30 th	7:15-9:15 pm
EXAM II	Thursday Oct 23 rd	7:15-9:15 pm
EXAM III	Tuesday Nov 18 th	7:15-9:15 pm
EXAM IV	Saturday Dec 20 th	10:05 am-12:05 pm

FINAL GRADES:

Final grades are based on the following:

Exam 1: 18% of the final grade

Exam 2: 18% of the final grade

Exam 3: 18% of the final grade

Exam 4: 18% of the final grade

LearnSmart Assignments: 8% of the final grade (2% for each unit)

Lab: 20% of the final grade

Hope and Grit Grading Bonus for Improvement

In addition to rewarding students for discussion attendance, we will also reward improvement in exam scores. Bonus points will be awarded at the end of the semester, in proportion to the steepness of the slope of a regression line fitted to your four exam scores. Details will be explained later in the semester, but the general idea is to provide HOPE to students who do poorly on the first two exams but who have the GRIT to keep working hard through the end of the semester.

After all points have been determined, grades will be assigned according to the following absolute scale. *This scale is strictly enforced with no exceptions and no extra credit allowed.*

A	90.00-100%	AB	89.00-89.99%
B	80.00-88.99%	BC	79.00-79.99%
C	70.00-78.99%		
D	60.00-69.99%		
F	59.99-And Below		

More information about exams and grading is outlined below.

COURSE POLICIES AND PROCEDURES

Although large class size helps keep a university education affordable, it has a major impact on instructor/student communication and testing/grading policies. In particular, it makes it difficult or sometimes impossible to accommodate individual students' preferences. We don't want you to think that we don't care about you as individuals (we do!!), and don't want to make you feel like a "number" in Physiology. However, to maintain our priority of being equally fair to all students while ensuring that the course is manageable to teach, the following policies and procedures are necessary.

COMMON COURTESY AND TOLERANCE

If you arrive early to lecture, please fill every seat beginning from the center of each row. That way, late-arriving students won't have to trip over your backpack and step on your new cell phone as they struggle to get to the empty seats. Also, please arrive on time and quiet down immediately when the lecture begins, so we can get the microphone level adjusted for everyone to hear. **Laptops and other wireless devices may not be used during class.** [Why not? It's not just because they distract your attention and that of students around you. Students actually don't learn as much when they take notes on a laptop! See this study:

<http://pss.sagepub.com/content/early/2014/04/22/0956797614524581.full.pdf>]

We also ask that you turn OFF cell phones and refrain from sending or receiving text messages for the duration of the class. Finally, please wait until the period has ended before closing notebooks, packing backpacks, etc, so all can hear the exam answers usually given at the end of class ☺.

In addition, we feel that all students deserve a safe, welcoming environment in which to learn. We expect you to show each other (and the staff) sensitivity and respect with regard to individual differences including gender, race, culture, religion, and sexual orientation. Please talk to your instructors immediately if you feel that anyone behaves in a way that deprives you of the welcoming climate we intend.

EMAIL

Email is a very convenient way for instructors and students to communicate about the course. We will regularly send messages to you via the Phys335 classlist with announcements, content updates, and important course information. Email is also a great way for you to arrange appointments and get answers to your questions about course logistics. However, in a class this large email can quickly become more of a burden than a benefit. The following rules will help minimize difficulties:

1. **Students cannot send messages to the classlist.** Only instructors are approved to send the class messages; we can forward messages/announcements from students as appropriate.
2. Do not "Cc" or "Bcc" multiple staff members on emails. It wastes significant staff time when more than one of us responds to the same question. Send your email to the *one* person you think is most likely to have the answer you need; that person will forward the email if necessary to get you the best answer.
3. Try to compose emails in a way that doesn't require lengthy replies. You can certainly get help via email, but it works best if you pose your questions as brief-answer or yes/no questions. For example, when you pose a question, write-out the answer *you* think is correct, and we'll reply with a "yes," or a brief "no, and here's why." We attempt to respond to every email sent to us, but please don't be surprised or offended if our reply says "answer too long, please come to office hours."
4. Email is not real-time, so don't use it to contact us about emergencies or if you need a quick answer! For example, if you send us an email at 5:00 Thursday evening to tell us you cannot attend an exam that day, we may not see your email until the next day. Though we usually check email more often, you should assume that we will only check once each weekday. If you send us an email from an account other than your @wisconsin.edu

account, and days go by without any response, there's a good chance that our overzealous spam filters have unjustly junked it. When a timely response is important, pick up the phone and call, or talk to us in person.

EXAMS

It is a challenge to administer and grade 500 tests. Although multiple-choice questions may not be a *perfect* way to assess knowledge, in a class this large it's the most practical way. We cannot offer alternate test styles to individuals who request them, because it would be impossible to offer them to all. Taking this type of test is something everyone can improve on, with practice. Other exam policies include:

1. Exam conflicts: During the first week of class, you should check ALL of our exam dates/times against other class schedules. If you have another exam occurring at the same time as one of ours, first ask the professor of the smallest class to arrange an alternate time. If your other professors refuse to accommodate you, email Dr. Altschafel with the name and phone number of that professor. She will then work with you to arrange an early exam in our class or in the other class. As a rule, we do not offer late exams because it delays the entire class from getting exam results back.

2. If you have a personal crisis that prevents you from attending an exam, contact the your Physiology instructor *by phone* as soon as possible, and also contact the Office of the Dean of Students (263-5702) to notify them of your crisis. (The Dean's office can be VERY helpful when it comes to notifying professors of crises and helping you make accommodations.) Conflict with a work schedule does *not* constitute an excuse for missing an exam. If you have a job, *let your employer know at the beginning of the semester* when our exams will be, and make it clear that you cannot work at those times.

3. Although you will need a calculator on exams, you cannot use the type that is programmable (those that allow entry of text, formulas, etc). You will be allowed to use a basic scientific calculator with log functions. In the event that you don't have one of those and it would present a financial hardship to obtain one, a calculator will be available to borrow during exams. Cell phones and other mobile electronic devices must be OFF (not on "vibrate") and out of sight during exams. You may NOT bring your own scratch paper or notes into the exam room.

4. Exams will be available for review in discussions that following each exam. ***You will not be allowed to keep the exams, and if you don't show up to the exam review sessions, you forfeit the chance to review your test.*** After reviewing your test and discussing it with a TA, if you would like to question a particular test item, you have one week to present your case to the instructor. Submit a concise explanation via email, citing textbook or other references where appropriate, and the instructor will return a decision within one week of receiving your email.

5. Cheating: Please don't. Cheating is an insult to the honest majority of students, and also deals a subconscious blow to a cheater's own self-worth. When you knowingly cheat, you're pretty much confessing to yourself that you're a loser who is either too lazy to work or too much of a coward to accept the grade that you deserve. Students caught cheating will be prosecuted according to the University Academic Dishonesty Policies and Procedures.

GRADING

We do not set grade quotas in this class (i.e., final scores are not "curved" so that only a small percentage of you can receive A's). Our grading standards are "absolute," meaning that if the entire class earns over 90%, you will all get A's. We hope this encourages a climate where you will study together and help each other learn ("helpfulness" does NOT include letting someone cheat off of your work, however).

Unfortunately, when final grades are being tallied there are generally numerous students who are only fractions of a point below posted borderlines. While it is agonizing when only one more correct test question would have

gotten you a higher grade, you may not go back and reexamine earlier tests to find a question to argue about (see the procedure for disputing questions above). And we can't simply lower the borderline for an individual student. That only transfers the agony to students just below the new borderline. Thus, grade borderlines are absolute, and unless there is an error recording or calculating your scores, your final posted grade cannot be changed. To guard against scoring errors and to make sure you are not unpleasantly surprised at the end of the semester, please keep close track of all test, quiz, and lab scores throughout the semester, and report errors immediately. *Finally, since we don't have sufficient staff time or resources to offer extra credit assignments to everyone in the class, we can't offer them to anyone.*

AVOID ONLINE SCAMMERS LIKE STUDY BLUE

We provide you with access to course materials that contain copyrighted material. Please do NOT upload them to online sites like Study Blue that would turn around and sell them back to students. It is against the law, and publishers are beginning to prosecute individual students and companies involved. These companies are lying to students. Buying someone else's flash cards or lecture notes or answer key will NOT make you more successful in our class. Taking your *own* notes, working out your *own* answers, and making your *own* flashcards will make you smarter. We are notified when Phys 335 students join Study Blue, and keep track of their success. **In the most recent semester, students who joined Study Blue averaged 79.37% in the class, while those who did not join Study Blue averaged 83.75%. That's the difference between a C and a B in the class. Don't waste time or money on Study Blue or any similar marketing ploys!**

SUGGESTIONS TO HELP YOU SUCCEED IN PHYSIOLOGY

TEACHING VS LEARNING:

*A man points to his dog and tells his wife, "I taught Sparky to talk!" In amazement, she prompts the dog, "Say something, Sparky!" Sparky wags his tail and replies, "Woof!" She says to her husband, "What a liar, you said he could talk!" To which the man explains, "I said I **taught** him to talk...I didn't say he **learned** to."*

A misconception held by some students (and professors) is that once something has been "taught," it has been "learned." There's a great difference, however, between receiving information (reading, hearing a lecture, looking at a diagram), and being able to reproduce or use that information correctly. The only way to demonstrate that you "know" something is to reproduce it in a context where it can be evaluated, like in a discussion, a practice online quiz, or on an exam. Unfortunately, exams are sometimes the first opportunity students use to assess their learning, and they find out the hard way that although they were taught a concept, they didn't really learn it. Seek opportunities to check your understanding before the exam by being an active participant in your education. Volunteer answers to questions in discussion, verbalize your understanding of concepts to a study group, take a blank piece of paper and see if you can reproduce and explain a complicated figure (to Sparky, if no one else is around).

Learning is a process involving long-term (perhaps permanent) transformation of brain structure and function. It requires self-motivation, focused attention, assignment of priority to the subject, and a willingness to incorporate new ideas into your understanding of the world. It also takes time, effort, and repetition—learning takes work! There isn't a pill or a clever invention that you can buy to make it easier. Learning well simply requires hard work. The Physiology 335 staff will make great efforts to teach well, but the ultimate responsibility for learning (and thus your grade) depends upon you, and how hard you work. Though it can be challenging, Physiology is a fascinating subject with relevance to your life, and we hope you enjoy learning it as much as we enjoy teaching it.

LEARNING TIPS:

Based on the experience of former students, we'd like to offer some advice on how to make the most of the learning experience and to perform up to your potential in our class:

1. **Keep up** with the material, rather than trying to cram during the two or three days before an exam.
2. **Attend every lecture** (as well as discussions and laboratories). The textbook readings cover a large range of concepts, and the best way to figure out which topics will be emphasized on exams is to hear what is emphasized in lectures. Furthermore, cognitive research suggests that something you learn by hearing and seeing stays in your memory 5 times better than if you just read about it. You should participate actively in lectures: pay attention, take notes, respond to questions, and ask questions. We don't take attendance and thus might not know how many days you skip class. But we think it only fair to warn you that previous students who have taken advantage of their anonymity by skipping class regularly have tended to get poor grades.
3. **Don't be a technology-victim.** While modern communication technology can do amazing things to enhance our lives, education experts are increasingly alarmed at the modern trend toward decreasing attention spans and intellectual achievements among high school and college students. Initially, multi-tasking in the current generation of students was rationalized as being adaptive, but data are emerging suggesting that it might actually be harming intellectual success. In a culture where multi-tasking is the norm, many students think nothing of reading a textbook in front of the TV, with Facebook running on the laptop next to them, and pausing at regular intervals to respond to text messages. It's becoming increasingly clear: If you don't take time to focus your mind fully on a task, you simply will not achieve your full learning potential. And not reaching your learning potential may keep you from realizing your career potential. Furthermore, some experts believe that constantly dividing your attention contributes to hyper-vigilance, anxiety, and the sort of stress that causes mental block when it comes to retrieving information on exams. The communication technology available to the modern student can be an awesome thing, but you must have the self-discipline to turn it off sometimes.
4. **University guidelines recommend that you should study at least two hours** outside of class for every hour in lecture. Some productive ways to spend that time would be to:
 - Look ahead at lecture notes, discussion questions or end of chapter book questions before lectures, so you'll recognize answers when you hear or read them.
 - Pay attention in lecture; ask questions when you hear something you don't understand. Turn your cell phones and laptops OFF during lectures. Maintain focus on physiology for the whole class period.
 - Read assigned text pages and do LearnSmart assignments within 24 hours of lecture, reading most closely the topics explicitly covered in lecture.
 - Before each lecture, rewrite previous lecture notes and answer discussion questions about them.
 - Work with a study group; discuss the material and compare answers to discussion or book questions.
 - Attend office hours whenever you have questions. Instructors and TA's will hold office hours each week—help is available! (You should feel free to visit any TA's office hours.) Like discussions, office hours are an opportunity to ask more in-depth questions, and get thorough answers. DON'T put off asking your questions until just before a test. You're sharing the teaching staff with many other students, and it may be difficult for us to answer all of your questions at the last minute!
 - Finally, and most important of all, have FUN learning Physiology! When you can find enjoyment in learning something new, it doesn't seem like work at all!

Lecture #	Day	Date	Topic
1	Wed	Sept 3 rd	Course Intro and Homeostasis
2	Fri	5 th	Cell & Molecular Physiology
3	Mon	8 th	Cell & Molecular Physiology
4	Wed	10 th	Cell & Molecular Physiology
5	Fri	12 th	Neuro Physiology
6	Mon	15 th	Neuro Physiology
7	Wed	17 th	Neuro Physiology
8	Fri	19 th	Neuro Physiology
9	Mon	22 nd	Neuro Physiology
10	Wed	24 th	Neuro Physiology

1	Fri	Sept 26 th	Endocrine Physiology
2	Mon	29 th	Endocrine Physiology

Unit 1 Exam **Tuesday** **Sept 30th** **7:15-9:15 pm**

3	Wed	Oct 1 st	Endocrine Physiology
4	Fri	3 rd	Endocrine Physiology
5	Mon	6 th	Endocrine Physiology
6	Wed	8 th	Endocrine Physiology
7	Fri	10 th	Skeletal Muscle Physiology
8	Mon	13 th	Skeletal Muscle Physiology
9	Wed	15 th	Skeletal Muscle Physiology
10	Fri	19 th	Smooth Muscle Physiology
11	Mon	20 th	Smooth Muscle Physiology

1	Wed	Oct 22 nd	Cardiovascular Physiology
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Unit 2 Exam **Thursday** **Oct 23rd** **7:15-9:15 pm**

2	Fri	24 th	Cardiovascular Physiology
3	Mon	27 th	Cardiovascular Physiology
4	Wed	29 th	Cardiovascular Physiology
5	Fri	31 st	Cardiovascular Physiology
6	Mon	Nov 3 rd	Cardiovascular Physiology
7	Wed	5 th	Cardiovascular Physiology
8	Fri	7 th	Cardiovascular Physiology
9	Mon	10 th	Cardiovascular Physiology
10	Wed	12 th	Cardiovascular Physiology

1	Fri	14 th	Respiratory Physiology
2	Mon	17 th	Respiratory Physiology

Unit 3 Exam **Tuesday** **Nov 18th** **7:15-9:15 pm**

3	Wed	19 th	Respiratory Physiology
4	Fri	21 st	Respiratory Physiology
5	Mon	24 th	Respiratory/Renal Physiology

6 Wed 26th Renal Physiology

NOVEMBER 27th THROUGH NOVEMBER 30TH THANKSGIVING BREAK

7	Mon	Dec	1 st	Renal Physiology
8	Wed		3 rd	Renal Physiology
9	Fri		5 th	Renal Physiology
10	Mon		8 th	Gastrointestinal Physiology
11	Wed		10 th	Gastrointestinal Physiology
12	Fri		12 th	Gastrointestinal Physiology

Unit 4 Exam Saturday December 20th 10:05 am - 12:05 pm