

Syllabus for Biology 352: Principles of Anatomy & Physiology II

Overview

BBio 352 is one half of a two-quarter series in comparative animal anatomy and physiology. BBio 352 focuses on the skeletal, muscular, digestive, osmoregulatory, cardiovascular, and respiratory systems, while BBio 351 focuses on other systems (endocrine, nervous, reproductive, sensory). BBio 351 and 352 are appropriate for students who intend to work in health sciences-related fields and will include some clinically oriented examples; however, these courses have a strong **comparative** theme, meaning that we will examine structures and functions of diverse animals, rather than restricting ourselves to humans. It may seem paradoxical that our understanding of *human* physiology can be deepened immensely by studying other species, but it's true!

Website

All important course information – assignments, announcements, grades, etc. – will be posted to Canvas: <https://canvas.uw.edu/courses/977347/>. I will also occasionally send messages to individuals via Canvas's messaging system.

Basic requirements

- Prerequisite: BBio 220.
- Lectures: Mondays and Wednesdays, 8:45 to 10:45am, Discovery Hall 162.
- Labs: Tuesdays (2 to 5pm) or Fridays (1:15 to 4:15pm), Discovery Hall 267.
- Textbook: *Animal Physiology: From Genes to Organisms* by Sherwood, Klandorf, and Yancey. You should have access to either a hard copy or an online version ("e-book"). The 2nd edition (2013) is the current and best version of this textbook; while you may use an older edition, be warned that my materials will refer to 2nd-edition figure and question numbers, and these figures and questions may be different or missing in older editions.
- Consistent access to the Internet and a printer.



Skills and outcomes

By the end of this course, you should be able to:

- Identify gross and microscopic components of the skeletal, muscular, digestive, osmoregulatory, cardiovascular, and respiratory systems.
- Explain the how structures (anatomy) of these components support their functions (physiology) at the molecular, cellular, and tissue/organ levels.
- Provide examples of how the skeletal, muscular, digestive, osmoregulatory, cardiovascular, and respiratory systems maintain homeostasis.
- Predict and interpret outcomes of experiments in which the skeletal, muscular, digestive, osmoregulatory, cardiovascular, and/or respiratory systems are perturbed.

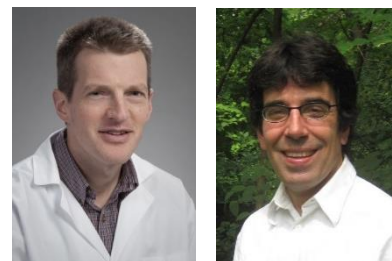
Schedule

Dates of quizzes, exams, labs, and group presentations will not change. Other aspects of the schedule may be adjusted as the quarter progresses. Relevant textbook pages are listed in parentheses, but you will not be tested on textbook material that is not covered in lecture, lab, or homework assignments.

Dates	Mon (8:45-10:45am)	Tues (2-5pm)	Wed (8:45-10:45am)	Fri (1:15-4:15pm)
3/30-4/3	Introduction (pp. 1-22)	No lab	Skeletons (pp. 356-7); Quiz 1	No lab
4/6-4/10	Skeletons (pp. 293-4, 323-32)	Lab 1: skeletons	Muscles (pp. 348-58); Quiz 2	Lab 1: skeletons
4/13-4/17	Muscles (pp. 341-48, 366-8)	Lab 2: muscles	Digestion (pp. 654-64); Quiz 3	Lab 2: muscles
4/20-4/24	Digestion (pp. 670-712)	Lab 3: musculoskeletal integration & EMG	Digestion (pp. 670-712, 724-8); Quiz 4	Lab 3: musculoskeletal integration & EMG
4/27-5/1	Osmoregulation (pp. 557-65)	Lab 4: prey capture & EMG	Exam 1	Lab 4: prey capture & EMG
5/4-5/8	Osmoregulation (pp. 616-28)	Lab 5: shark/cat dissection 1	Osmoregulation (pp. 593-604); Quiz 5	Lab 5: shark/cat dissection 1
5/11-5/15	Circulation (pp. 385-94)	Lab 6: shark/cat dissection 2	Circulation (pp. 400-14); Quiz 6	Lab 6: shark/cat dissection 2
5/18-5/22	Circulation (pp. 419-22, 425-9)	Lab 7: aortic arches	Exam 2	Lab 7: aortic arches
5/25-5/29	No class (Memorial Day)	Lab 8: circulation	Group presentations; NO QUIZ	Lab 8: circulation
6/1-6/5	No class (Dr. C traveling); e-lecture on respiration (pp. 493-502, 519-25, 547-53)	Lab 9: respiration	Group presentations; Quiz 7	Lab 9: respiration
6/8-6/12	No class	No lab	Exam 3	No lab

Instructors and office hours

I, Greg Crowther, am excited to be your main tour guide on this journey through the world of animal anatomy and physiology. I am fascinated by this material both as a scientist and as a long-distance runner. (My Ph.D. research was on energy metabolism in exercising leg muscles.) My office is in room 452 of Discovery Hall. In general, the best ways to reach me are via email (crowther@uw.edu) and/or via Canvas messages/comments.



My spring 2015 office hours will be on Mondays from 11:00am to 12:30pm, on Thursdays from 1:45pm to 3:15pm, and by appointment. I will also hold an online office hour on Tuesdays from 9:00pm to

10:00pm. To interact with me during online office hours, go to the Chat page of the course website (<https://canvas.uw.edu/courses/977347/>) and use Canvas's Chat function or send me a private message. I will respond to questions in the order that I receive them, as quickly as I can.

Jeff Jensen (jjensen@uwb.edu) is the instructor for Tuesday labs (section AA). Jeff was the original designer of this course, including its labs, so we are lucky that he is involved again this quarter. Jeff's research takes an ecological and evolutionary approach to the biomechanics of fish feeding. Jeff will hold "office hours" at the lab (Discovery Hall 267) on Tuesdays from 1:00pm to 2:00pm, and by appointment.

Disability accommodations

Your instructors are dedicated to providing a supportive environment for all students, including students with disabilities. If you have a disability that affects your performance in the class, or if you think you might, please contact Disability Support Services.

Assignments and grades

Your overall grade will depend on your performance on several different types of assignments, as follows:

- Quizzes are low-stakes checkups; they are not individually worth a lot of points, but should motivate you to keep up with the material and should let you know how you're doing.
- Exams will be cumulative, to encourage longer-term retention of the material, but will emphasize material covered since the previous exam.
- In lab, you will be given points for completing the hands-on activities and turning in worksheets of short-answer questions.
- At the end of the course, groups of 3 to 4 students will do 20- to 25-minute presentations on a piece of primary literature.

Your final grade will be calculated as follows.

Exams (3; none dropped)	300 points
Quizzes (8; lowest 1 dropped)	140 points
Lab worksheets (9; lowest 1 dropped)	160 points
Group presentation	40 points
TOTAL	640 points

Because some assignments will ultimately be dropped, intermediate calculations of your grade in Canvas may be misleading. If you are unsure of how you are doing, please ask me.

Homework assignments and in-class participation are not explicitly counted in your grade. However, since quizzes and exams will be based heavily on in-class activities and homework problems, I urge you to attend all class sessions and do all homework problems.

In general, quizzes and labs cannot be made up after being missed. If you miss a quiz or lab, you will receive a 0 for it. However, your lowest lab score and your lowest quiz score will be dropped. Do NOT plan to skip a particular quiz or lab that you are able to complete -- save your droppable 0s for unavoidable absences.

In general, assignments will not be graded on a curve. If an assignment turns out to be unusually hard, I reserve the right to curve the scores upward for that assignment.

Final grades will be based on the percentage of total points earned, according to the chart below.

99% => 4.0	89% => 3.4	79% => 2.4	69% => 1.4
98% => 4.0	88% => 3.3	78% => 2.3	68% => 1.3
97% => 4.0	87% => 3.2	77% => 2.2	67% => 1.2
96% => 4.0	86% => 3.1	76% => 2.1	66% => 1.1
95% => 4.0	85% => 3.0	75% => 2.0	65% => 1.0
94% => 3.9	84% => 2.9	74% => 1.9	64% => 0.9
93% => 3.8	83% => 2.8	73% => 1.8	63% => 0.9
92% => 3.7	82% => 2.7	72% => 1.7	62% => 0.8
91% => 3.6	81% => 2.6	71% => 1.6	61% => 0.8
90% => 3.5	80% => 2.5	70% => 1.5	60% => 0.7

Collaboration, attribution, and academic honesty

For quizzes and exams, working with other students is NOT allowed (unless stated otherwise). For all other assignments, working together IS allowed (unless stated otherwise).

If you use a source other than the instructor or textbook – a website, a classmate, a library book, etc. – you must cite that source. Examples:

- You work with a classmate on a homework assignment:
 - *Note: Phil, Jane, and I discussed questions #2, #3, and #4.*
- You quote the exact words used by another source, **using quotation marks**:
 - *According to Wikipedia, cartilage cells “produce a large amount of extracellular matrix composed of collagen fibers, abundant ground substance rich in proteoglycan, and elastin fibers” (source: <http://en.wikipedia.org/wiki/Cartilage>).*
- You gather information from another source and put it in your own words:
 - *Cartilage contains high levels of the proteins collagen and elastin (source: <http://en.wikipedia.org/wiki/Cartilage>).*

If you have any questions about appropriate use of sources, please ask me. I do not hesitate to penalize students for plagiarism, but I strongly prefer that everyone simply follow good attribution practices.

Tips for success

- *Get help when you’re starting to struggle, not after weeks of confusion.* Let’s try to solve small problems before they become big problems.
- *Read over your notes soon after each class and “clean them up,” clarifying any confusing points.* That way, when you return to these notes when studying for a test, you won’t have to do a lot of last-minute deciphering. (This simple strategy helped me a LOT as an undergraduate.)

- *Work together.* This can be done both online (via Canvas Discussion posts and Chats) and in person. Form study groups and help each other out! Just be sure that your official, submitted work reflects your own understanding and isn't just copied blindly from a classmate.
- *Practice metacognition.* Metacognition means "thinking about how you think." Try to figure out which approaches to the material work best for you. For example, with an assigned reading, should you plow straight through from beginning to end, look first at subject headers and vocabulary words before going back to fill in the details, or adopt some other method? Different styles may work best for different students!
- *Use limited time to maximize the points earned.* When your time is severely limited, think carefully about how to minimize the damage to your overall grade. For example, imagine that it's the last week of the quarter and you only have time to go to lab OR study for a quiz. If your lab grades have all been good up to this point but your quiz grades have not, you may want to skip the lab (thus receiving a 0 that will be dropped) and focus on quiz preparation.
- *Respect each other and me.* Respectful behavior includes: listening carefully when spoken to; giving others the space to think and to ask and answer questions; refraining from harsh or persistent criticism; avoiding language, attire, or movements that are likely to annoy or distract others; restricting conversations to those relevant to the course material; maintaining control over one's emotions; and giving me adequate time to respond to requests.