
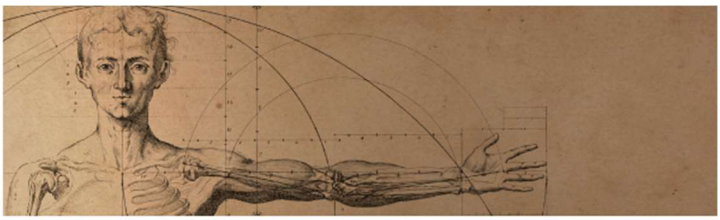

Bio Sci 203: Anatomy and Physiology II
Spring 2023 Course Syllabus

Anatomy and physiology of the human body including cardiovascular, respiratory, digestive, excretory, endocrine, and reproductive systems. 3 hours lecture, 3 hours lab. Cannot be combined with Bio Sci 150 & 202 for more than a total of 9 credits toward bio sci major. Cell & Molec Bio. Prereq: C or better in either Bio Sci 202(P) or 315(P).

Course Logistics

Time: M/W 8-9:15 AM

Place: Lapham 162

Credit hours: 4

Lab: see your course schedule

Instructor: Ann Raddant, Ph.D (she/her/hers)

Office: Lapham N201

Office Phone: 414-229-4889

E-mail: raddant@uwm.edu

Office Hours: Tuesday 9:30-10:30 AM, Wednesday 10-11 AM, or by appointment. I prefer to meet via Zoom but will be available in my office during these times.

Course website: Canvas will be used to distribute all course materials and information. Please check this site and your UWM email regularly. A Frequently Asked Questions page is provided in the Syllabus area of the lecture Canvas site.

Course materials – available for purchase via https://uwm.ecampus.com/

1. Required: this course will utilize an online program called Connect. An ebook is embedded within this software. If you used this software in Bio Sci 202, you **do not need to re-purchase**. ISBN: 9781264421008. A loose leaf version of the text is available to purchase through the website. If you prefer a hardcover book, you may purchase any recent (10-12th) edition of *Seeley's Anatomy & Physiology* by Vanputte, Regan, and Russo.

2. Recommended: a lab coat is recommended, especially for dissection weeks.

Course Schedule: a daily schedule for this course is provided at the end of this document. Please refer to Canvas for individual assignment due dates.

Learning Outcomes

1. Explain how human cells use oxygen to generate ATP.
2. Explain basic anatomical and physiological concepts and integrate these into a working model of the human body.
3. Discuss the structure and function of the endocrine and reproductive systems and relate these functions to actual or hypothetical disease states.
4. Acquire an understanding of the components and functions of blood and of the steps necessary in hemostasis.
5. Develop an understanding of the structure and function of the heart and of cardiac muscle and explain how the heart, vessels, and blood work together to transport gases, nutrients, and wastes throughout the body.
6. Describe the components of the respiratory system and explain ventilation, gas transport and exchange, and neural regulation of respiration.
7. Develop an understanding of the structure and function of the immune system including the types of specific and non-specific mechanisms the body uses to protect itself.
8. Describe how the digestive system works to provide nutrients to cells of the body.
9. Examine the anatomy of the urogenital system.
10. Describe how the kidneys filter blood and participate in the regulation of blood volume and pH.
11. Describe human reproduction.

Specific learning objectives for individual video lectures and other assignments will be provided. These objectives provide a road map to guide your study for quizzes in this course. I recommend spending time writing out responses to each prompt in your own words as part of your preparation for each quiz in this course.

Course Format

Learning A&P (especially complex physiology concepts) is **not** simply the acquisition of correct information. Learning requires integrating new information with existing knowledge gained in A&P I or Cell Biology and other related courses. Therefore, you will have to take an active role in the learning process to comprehend and apply these concepts. This course will be taught in a **flipped format.** That means that instead of listening to me lecture during class and then studying on your own in between classes, you will prepare for class by viewing video lectures and then do activities in class that replace a portion of your typical study time.

You will earn credit for correctly answering quiz questions embedded in the video lectures, and there will also be points available for in-class assignments. If a situation arises that prevents you from coming to class, there will be an alternative assignment that can be completed. Please do not come to class if you are sick!

Grading

In both lecture and lab, weighted averages of a variety of assignment types will be used. However, every 10 points earned will be **approximately** equal to 1% of the final course score. No extra credit is available in this course. Letter grades will be assigned as shown here.

A passing grade in both lecture and lab is necessary to pass the course. Students who end the semester with less than 60% in either lecture or lab will receive an F.

Final letter grades	
A: 93-100	C: 73-76.99
A-: 90-92.99	C-: 70-72.99
B+: 87-89.99	D+: 67-69.99
B: 83-86.99	D: 63-66.99
B-: 80-82.99	D-: 60-62.99
C+ 77-79.99	F: <60

Video lecture quizzes (7.5% course grade)

Videos lectures will be used to provide most of the content in the course, similar to what you have experienced in face-to-face classes. The content for each week will be broken down into multiple, short (8-15 minutes) segments that you can watch on your own schedule. There will be multiple choice or true/false questions embedded in these videos. The **purpose** of these assignments is to **deliver course content** and **assess your understanding of the content**. You will have unlimited attempts on each quiz and only your high score will be counted. The number of videos and questions per video will vary throughout the semester.

In-class assignments (7.5% course grade)

During class time, you will be working on a variety of tasks to help you assess and improve your understanding of course content. Your participation will be assessed in a variety of ways, including Canvas assignments or hard copy submission. The **purpose** of these assignments is to **hold you accountable** to attending and participating in class activities. Note: all of these assignments can be completed online for full credit by students who cannot attend class for any reason!

Connect assignments (15% course grade)

SmartBook assignments: these assignments are associated with textbook content and require you to complete a specific number of learning items related to the reading. The **purpose** of these assignments is to provide you with a **review** and **practice** of ideas and terminology that we covered in lecture videos. These assignments are graded for completeness at the time they are due.

Interactive animations and questions: these assignments will contain an interactive animation and associated question bank questions. The **purpose** of these assignments is to **deepen your understanding** of especially tricky topics and to help you **make connections** between the different levels of organization (molecule vs. cell vs. organ and organ system) that we will see in the body. You will have multiple attempts on these assignments and your best score will be counted.

APR assignments: these assignments will guide you through animations or dissections in Anatomy and Physiology Revealed. The **purpose** of these assignments is to **guide you to additional resources** to increase your understanding.

Progressive Quizzes (30% course grade)

The way that we interact with information is rapidly evolving: facts about pretty much any field can be accessed almost instantly using just a smartphone. Since you can look up facts, the summative

assessments in this course is designed to test your understanding and ability to apply facts, not memorize them. Even though there is a huge volume of content in this course, quizzes will focus primarily on ideas that it is absolutely critical you take from this class into your other course work and careers. The purpose of these quizzes is to assess your understanding of course content.

Progressive quizzes will be completed on Canvas outside of class time. The primary format of questions will be multiple-choice, but there will be occasional matching, ordering, and true/false questions. You will have a single attempt and quizzes will be timed with 1.5 minutes per question. You may use any resources you find useful (notes, ebook, internet), but I expect you to be working on your own. Question banks will be used. All quizzes will contain new and cumulative content; specific learning objectives will be provided on Canvas.

During the class session immediately after a Progressive Quiz is due, students will have an opportunity to view their questions and answers, and work on correcting their mistakes. In order to be eligible to complete a corrections assignment, students must have earned all of the possible points on video lectures, Connect assignments, and in-class work in the modules associated with the new content on the quiz being corrected. Students may correct up to 5 incorrect questions, excluding true/false questions.

Lab (40% course grade)

Please refer to your lab syllabus/Canvas site for additional information.

Course Policies

Late submissions

Late work will not receive any credit; however, students will start the semester with 10 tokens that can be used to add a 1-week extension for up to 10 assignments. Unused tokens will be converted to extra credit at the end of the semester. Learn more about the token policy on the late assignment policy page, which can be found on the Syllabus page in the lab Canvas site.

Cell phone/tablet/computer policy

During some portion of this course, the use of electronic resources in the classroom can enable learning. In these cases, please stay on task and do not interact with social media or email accounts.

I recommend taking notes by hand.

Unauthorized use of cell phones/laptops/tablets is not permitted. Please silence all devices before entering the classroom. Any student that disrupts class with noise from anything with a battery may be asked to leave lecture.

Time commitment

For each credit hour earned in the course, students are expected to invest at least 3 hours of work per week in addition to their time in lecture and laboratory courses. For this 4-credit course (lecture and lab), students are expected to complete *at least* 12 hours of study time *per week* to meet the learning goals of this course.

University Policies

Students with disabilities

The University of Wisconsin Milwaukee supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute

(36.12) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform me of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Please contact me in person or via email. I will work either directly with the you or in coordination with the Accessibility Resource Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Academic misconduct

My goal for you in this course is for you to develop an understanding of how the different organ systems within the human body function together to keep us alive. The only way for you to achieve that goal is to put in the necessary work to figure it out. If you do the work with the intention of learning, I am certain that you will achieve that goal. If you click mindlessly or Google until you find an answer, you will likely feel frustrated and unsuccessful. Collaborating with peers to reach a deeper understanding is expected, as is the utilization of appropriate resources throughout the course. Cheating on exams looks different in an open resource environment. Actions such as having a different person complete your quiz or answer specific questions are both cheating, as well as posting exam materials for other students to utilize. Plagiarism in this course includes submitting any work completed by another individual, such as projects from previous semesters or text copied and pasted from any source. Cheating on exams and plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. Specific UWM policies can be viewed at https://uwm.edu/deanofstudents/academic-misconduct-2/

COVID-19

Panther Community Health and Safety Standards: UWM has implemented health and safety protocols, taking into account recommendations by local, state, and national public health authorities, in response to the COVID-19 pandemic. As a member of our campus community, you are expected to abide by the Panther Interim COVID-Related Health & Safety Policy, which was developed in accordance with public health guidelines. These standards apply to anyone who is physically present on campus, UWM grounds, or participating in a UWM-sponsored activity:

- UWM recommends that all individuals visiting UWM facilities wear face coverings while indoors.
- UWM recommends getting vaccinated for COVID-19 and getting the most recent booster shot available to you.
- UWM requires that you check daily for COVID-19 symptoms and not come to campus if you are feeling sick. If you are feeling sick, get tested for COVID-19 and quarantine until symptoms subside. Use the CDC Quarantine and Isolation Calculator to determine next steps.

- If you test positive for COVID-19, UWM requires that you self-report at the Dean of Students Reporting Form . Use the CDC Quarantine and Isolation Calculator to determine next steps.

Additional university policies regarding religious observances, students called to active military duty, incomplete grades, discriminatory conduct, complaint and grade appeal procedures, and LGBT+ resources can be found at http://uwm.edu/secu/syllabus-links

GER Credit Statement

The general education requirement (GER) is met by providing 1) basic knowledge of human physiology from which students can interpret the anatomy and functions of their bodily systems, such as cardiovascular, pulmonary, gastrointestinal, renal, endocrine and reproductive systems; and learn of the latest advances in biomedicine. 2) Some specific goals which serve as a basis for classroom assessment are to increase the student's comprehension of the interactions of bodily systems with the external environment; analyze and interpret their daily diets; be exposed to the latest developments in assisted reproduction, HIV/AIDS, etc.; to read critically and compare lay-oriented news coverage of biomedicine with actual peer-reviewed publications; and to satisfy their natural curiosity about their bodies and bodily functions. The laboratory portion of the course then allows the student to extrapolate practical application from the lecture material and learn how to perform and interpret EKGs, assess lung function, perform animal dissections, etc. These goals are evaluated in both lecture and laboratory throughout the semester via examinations; weekly laboratory quizzes; 3) demonstration to the laboratory instructor of student learning by mastery of the dissected material, for example; and laboratory homework assignments such as 4) creating a written, software-guided Nutrition Project to evaluate personal dietary intake and compare with an "ideal" diet.

Disclaimer

Policies and schedules contained within this syllabus are subject to change due to unforeseen circumstances. I reserve the right to make these changes and communicate them to the class via the course Canvas site and/or email. There is also a potential for us to move fully online at some point during this semester. If that occurs, both lecture and lab will be conducted asynchronously.

Unit	Date	Day	Topics	Pages	Lab
Unit 1: Cell biology, metabolism, and endocrine system	1/23	M	Course Introduction		No Lab
	1/25	W	Cell biology review	74-119	
	1/30	M	Metabolism	972-994	Graphs, Directional terms
	2/1	W	Pancreas, chemical nature of hormones	663-667, 612-634	
	2/6	M	Hypothalamus and pituitary gland	637-647	Endocrine system
	2/8	W	Thyroid and adrenal glands	648-663	
Unit 2: Blood and heart	2/13	M	PQ 1 review		Heart
	2/15	W	Blood type	699-706	
	2/20	M	Blood composition	682-694	Blood
	2/22	W	Heart anatomy and conducting system	712-727	
	2/27	M	Cardiac cycle	727-738	Vessels
	3/1	W	Regulation of cardiac output	738-748	
	3/6	M	Review Progressive Quiz 2		Dissection 1
Unit 3: vessels and respiratory system	3/8	W	Vessel structure; blood pressure	756-762; 784-790	
	3/13	M	Regulation of mean arterial pressure	794-811	Lab Exam 1
	3/15	W	Capillary exchange	758-761;791-793	
	3/20-3/26: No class – Spring Break				

	3/27	M	Ventilation and pulmonary gas exchange	858-890	Respiratory system
	3/29	W	Gas transport and systemic gas exchange	890-911	
	4/3	M	Review Progressive Quiz 3		Abdominal cavity anatomy
Unit 4: digestion and immunity	4/5	W	Digestive system anatomy and functions	913-920	
	4/10	M	Digestion	929-948	Urogenital anatomy
	4/12	W	Absorption	948-970	
	4/17	M	Lymphatic system and innate immunity	814-830	Dissection 2
	4/19	W	Adaptive immunity	831-857	
Unit 5: Urogenital system	4/24	M	Review Progressive Quiz 4		Lab Exam 2
	4/26	W	Urinary system introduction	1006-1015	
	5/1	M	Urine production	1015-1028; 1038-1040	Urinary physiology
	5/3	W	Hormonal control of urine volume	1029-1038;- 1040-1051	
	5/8	M	Gamete production Sperm and testosterone	1081-1098	No Lab
	5/10	W	Menstrual cycle, pregnancy and lactation	1099-1029; 1155-1161	
	5/15	M	Progressive Quiz 5 due 9:30 AM		