

Biol 151: Anatomy & Physiology II

Spring 2023 (2644)

Lecture (Park 159): MWF 11:10AM – 12:00 PM

Lab (Park 127): W 1:10-4:00PM

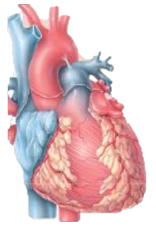
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he / him/ his

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Office hours: M 12:10-1PM and
by appointment



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Welcome to the second half of Anatomy and Physiology!

Last semester, you built a vocabulary and literacy of anatomy and physiology by examining the four tissue types in the body and how they contribute to homeostasis. In this semester we will apply these tools to other systems, many with greater specificity than those we covered last semester, including the endocrine, cardiovascular, circulatory, respiratory, digestive, urinary, and reproductive systems.

Course Goals

Below are a few goals to focus on as we progress throughout the course. These are the big ideas that you should walk away with and hold on to by the time class is over. Specifically, at the end of this course, you should be able to:

- Use appropriate terminology to effectively discuss human anatomy
- Recognize recurring themes in physiological processes
- Identify anatomical structures in the major organ systems of the human body and explain how form and function are related
- Recognize and explain the interrelationships within and between the systems of the human body
- Predict physiological consequences using anatomical principles, and vice versa
- Evaluate real-world clinical case studies by applying anatomical and physiological principles
- Integrate across levels of organization to understand how mechanisms and whole-body outcomes are linked
- Use dissections, models, and computer resources to identify and describe anatomical structures

Course Materials

Books: Principles of Anatomy and Physiology, by Tortora and Derrickson or whatever textbook you used last semester

Visible Body: Your subscription is good for an entire year.

Course Structure and Components

Lecture and Lab Components: In the lecture component of this class, I will present in traditional lecture style, but this will be punctuated with practice activities, discussions, and opportunities for you to share expertise from knowledge and experiences gained outside of class. In lecture, we will focus on understanding principles of how the structure and function of bodies interact, as well as physiological processes at multiple levels of organization.

In the lab we will focus on a thorough study of the structures of the human body by combining a hands-on approach through the inspection and investigation of plastic models of the human body and preserved animal material, dissection of animal tissues, and with the analysis of a virtual cadaver (the Visible Body apps). We will also use in-vitro demonstrations of physiological processes and concepts, as well as experiments and measurements you conduct on your own and classmates' bodies (with consent: no one is required to supply their own body

for the sake of class activities and will not be penalized for declining to be a subject). Through the lecture and lab components, you will not only learn the essentials of human anatomy and physiology, but you will learn how they are essential towards evaluating real-life situations and having agency in the context of your own body.

Material covered: I intend to be transparent about what material you I expect you to know when being assessed in this course. Each lecture and lab will start with a list of terms and concepts that you will be responsible for, as well as learning goals. You will not have to remember information that is not a part of those lists. I will not test you on information that you would have to acquire outside of class time (e.g. no required reading) excepting materials from Visible Body that will also be listed in your lab materials.

Much of anatomy and physiology are cumulative, meaning that if you are struggling with a topic early on, you may continue to have difficulties. (Or not. Often putting the more foundational concepts into context makes them make sense.) I am most interested in you learning anatomy and physiology, not necessarily learning them at a certain speed. I'll do my best to observe your progress and give feedback and assistance, but I will appreciate your self-awareness and open communication to ask for what you need from me and the class.

Assignments: Anatomy and physiology are broad and dense topics that for many people require considerable study time to integrate. Because of this, ~47% of your grade in the course will come from engaging in activities that will contribute to that studying. Or more plainly, participate, turn something in, try and you will get the points.

- **Syllabus feedback:** Having done A&P I with me last semester, you probably have ideas about what worked well for you and what you wish were changed. In this syllabus, I'm highlighting changes from last semester and asking for your preferences between options. There is a survey up on Moodle, worth 2 points for completing.
- **Updates:** Your update will be a short reflection, critical question, sharing of expertise, etc. relating to the topic. My goals for this practice are to give you structure to engage with the material outside of its course context, to encourage you to tie together concepts that we might not plan to address, and to identify your expertise. Each of the 12 updates are worth 5 points. Under each topic header on Moodle, there are one or more update forums. You can post anonymously or with your name. If you do not want anyone else to see your update, email it to me with the subject "Update" and the topic.
- **Lecture assessments:** These are quizzes, but will be graded based on doing them, not on getting correct answers. They'll be 5-7 questions long. I will post them on Friday afternoons to be completed by the following Monday's class time. Please treat these as closed book, closed note quizzes. We will discuss the answers at the beginning of class on Mondays. I'll use these to assess MY performance, as well as to give you a sense of what you've integrated and where you may need to focus your studying / ask questions. We both get the data, you get 4 points.
- **Visible Body assessments:** These are actual graded quizzes worth 10 points each that you'll find on the Visible Body site. You'll have one that corresponds with every lab and will be due a week later. The focus will be on visual information, specifically that which you are responsible for within Visible body's tools. I would like you to take it individually and without notes. You can take the assessment as many times as you want and your highest score will be your grade. You will not receive a lower score if you score lower on subsequent attempts, so feel free to use this as a study tool. The questions will usually

come from a question bank, so each time you take it, the quiz will likely be different than the last attempt.

- **Homework:** Every other week, I will assign homework that involves practice problems and/or problem solving that encompasses material beyond what we have covered in class. This is for you to practice concepts and potentially think about material in different ways. The key will be available on Moodle once you submit your answers and you will get 5 points for completing the assignment.
- **Lab contribution:** Labs will be mainly focus on dissections, but will also include examining models, slides, or performing activities or experiments. You will earn up to 14 points for your efforts in lab each week. If you will miss a lab, let's discuss makeup options ASAP. Whenever you are in lab, make sure to wear clothing that covers your legs and ankles, as well as closed topped, closed toed shoes.
- **Post-lab:** After you've completed all the activities for the weekly lab, you will write one or two paragraphs on how what you did ties to the topic we're covering and what you learned from the experience. These will be due a week later for 4 points each.
- **Lab practicals:** There will be two lab practical exams in the lab component of this course. These exams will assess your in-depth knowledge of anatomical structures, but may also include the physiological processes related to those structure. You will rotate through stations to identify structures that have been tagged on models, images, or from the Visible Body atlas, and may include processes illustrated in benchtop demonstrations. The first lab practical is worth 70 points and covers the first 5 labs and the second is worth 85 points for the last 6 labs. After the practical, you will be responsible for the initial grading of your exam.
- **Midterms:** There will be two take-home midterm exams to assess your in-depth knowledge and mastery of the lecture material using a variety of question formats. The midterms are worth 95 points each. The exams are cumulative, but the focus will be on the new material. You will receive up to 10 points for **self-grading** each of your midterms.
- **Creative project:** You will produce a creative interpretation of an anatomical or physiological concept. This will be worth 20 points and we will discuss further logistics in class.
- **Final exam:** The final exam will be worth 167 points and include question styles similar to those on the midterms, but will also include some more integrative synthesis type questions. It will be half focused on material covered since the second midterm, and half before. The final will be available as a take-home exam during finals week

Learning Objectives: I value being clear and transparent. In order for you to do well in this course, you will need to know exactly what I want you to be able to, and this is where learning objectives come in. At the beginning of every day of class, I will present learning objectives that clearly state what I expect you to be able to do. (Let me know if it isn't clear!). For example, "At the end of this class session, you will be able to identify and explain the functions and characteristics of the types of vertebrae." Learning objectives are things that you can actually DO, so you will be able to tell whether or not you really know the material. Learning objectives

***Tip:** Make sure that you can actually DO each learning objective – these are the keys to doing well in the course!*

come in all levels, from the very basic to the very complex, and you will be challenged at all levels in this course.

Grading Breakdown

Syllabus feedback	0.2%	2 points	
Updates	6.0%	60 points	(12 at 5 pts each)
Lecture assessments	4.8%	48 points	(12 at 4 pts each)
Homework	3.0%	30 points	(6 at 5 pts each)
Visible Body assessments	11.0%	110 points	(11 at 10 pts each)
Lab contribution	15.4%	154 points	(11 at 14 pts each)
Post-lab	4.4%	44 points	(11 at 4 pts each)
Lab practicals	15.5%	155 points	(#1: 70 pts, #2: 85 pts)
Midterms	19.0%	190 points	(2 at 95 pts each)
Self-grading	2.0%	20 points	(2 at 10 pts each)
Creative project	2.0%	20 points	
Final exam	16.7%	167 points	
Total	100.0%	1000 points	

Based on the above point structure, you can calculate your grade at any time during the semester (ask for help if you need it), and you should calculate your grade regularly to keep track of how you are doing in the course. The number of points will be converted to letter grades based on the following scale. NOTE: The grading scale is subject to change at the discretion of the instructor and will not be considered final until all assignments have been completed.

4.0	925 – 1000 points	2.7	795 – 824 points	1.3	655 – 694 points
3.7	895 – 924 points	2.3	755 – 794 points	1.0	600 – 654 points
3.3	855 – 894 points	2.0	725 – 754 points	0	Less than 599 points
3.0	825 – 854 points	1.7	695 – 724 points		

Course Policies

Courtesy to Fellow Students: I'd like to have a positive learning environment in this class where we have the space to succeed, fail, be vulnerable, and be genuine. If something is distracting or detrimental to your learning, let's shift course policies to make the environment work for you. Courtesy to your fellow students and to me is imperative—with a caveat. Because we are talking about human experiences and bodies, I'd like to acknowledge that experiences and identities that have been marginalized by dominant power structures can be further harmed by insisting on civility when experiencing or pushing back against harm being done. However, I am committed to assuming best intentions and treating this as a learning space—please do the same with me and with each other and keep communication open.

If any of my actions are harmful to you or a community you're knowledgeable about, I would like to know. I intend to respond with gratitude and take action to fix the problem. If this constitutes you doing substantial labor in relation to marginalized status (e.g. gendered, racial, disability), let's discuss how I can appropriately recognize that labor.

Tip: Come see Dr. Wehrle ASAP if you need help with any aspect of the course. If you wait too long he might not be able to help you!

Attendance and Recording: While attending lecture may enrich both yours and the rest of the class's experience of the material, I want you to do what is best for your health and learning. I intend to record each lecture and make it available. Do note that this means that you may be recorded while in class. I will make sure to get your permission explicitly in writing, but until then, this serves as your notice. I will not be recording lab sessions. If you miss a lab, please contact me ASAP to work out to make it up. If you know you will miss a lab, please let me know as soon as you know.

If you are not feeling well and either need to take care of yourself or may be contagious to others, please do not come to class. While we will be taking precautions to mitigate spread of infectious disease, avoiding exposure is ideal. If your ailment is not contagious, please act in the way that is best for your overall wellbeing. In either case, please contact me so we can work out makeup/ alternate options.

Late Work: I recommend turning work in on time. That said, I am more interested in you learning anatomy and physiology than doing so at a particular speed. If you will be turning in your work outside of the expected timeframe, please keep me updated so I can appropriately budget my time to respond to it. I reserve the right to subtract points for late work, but I very much do not want to use point subtraction as a punitive tool. I would rather your grade be a reflection of your mastery of the material. I will not be able to accept work after the last day of class without us both jumping through administrative hoops.

Getting Help Outside of Class: I will have one scheduled office hour per week on Monday right after class, and I am open to (but not required to accept) appointments at other times. You may come ask questions, listen, or chat about course, professional, or college relevant topics. If scheduling permits, I can open the lab during my office hour for you to have open study time with the lab materials. If possible, don't ask content questions via email but instead post on the Moodle Discussions board where you can benefit from your classmates' input, clarify their questions, or alert me that a concept was tricky for most of the class.

Policy on Health and Accommodations: Bryn Mawr College is committed to providing equal access to students with a documented disability. Students needing academic accommodations for a disability must first register with Access Services. Students can call 610-526-7516 to make an appointment with the Director of Access Services, Deb Alder, or email her at dalder@brynmawr.edu to begin this confidential process. Once registered, students should schedule an appointment with me as early in the semester as possible to share the verification form and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement. More information can be obtained at the Access Services website. (<http://www.brynmawr.edu/access-services/>).

Haverford Students: Haverford College is committed to providing equal access to students with a disability. If you have (or think you have) a learning difference or disability – including mental health, medical, or physical impairment – please contact the Office of Access and Disability Services (ADS) at hc-ads@haverford.edu. The Director will confidentially discuss the process to establish reasonable accommodations. Students who have already been approved to receive academic accommodations and want to use their accommodations in this course should share their verification letter and make arrangements to meet with me as soon as possible to discuss their accommodations. Please note that accommodations are not retroactive and require advance notice to implement.

If you suspect you would benefit from accommodations but are not yet registered, I am happy to talk to you about the process and your options. If you notice that something in class could be more accessible (whether it directly affects you or not), I'd like to know!

If you are sick and contagious, I ask that you not attend class (to protect your classmates from your microbes) and contact me for potential arrangements as soon as possible. To accommodate my health needs, I ask for you not to wear strongly scented colognes, perfumes, lotions, etc. to lecture, lab, or my office hours.

Masking Policy and Ventilation: Masks are required in all indoor class spaces (lecture, lab, my office) and encouraged in other indoor areas. Please wear a well fitted N95, equivalent (e.g. KN95, KF94), or better (e.g. P100, R100) rated mask that covers your nose and mouth with no gaps. If you are not wearing a mask when you arrive at class, I will provide you with one (likely a 3M V-flex or Aura).

If your mask has slipped or is not fitting well, expect that I will bring it to your attention. **If you need to remove your mask** (e.g. to drink water, eat, readjust), **you must exit the classroom** and preferably go outside until you put your mask back on. We'll make sure that doesn't cause anyone to miss any course material!

If you wear a respirator with an exhaust valve, please filter your outgoing air. I am happy to help with solutions for that.

I intend to have a HEPA air purifier running in our classroom and lab.

Policy on Children in Class: While I have a standing policy on children in class for when there is not an active pandemic, it may not be tenable at this time. I encourage you to talk with me about what needs you may have in this area so that we may find the best solution.

Life: Pretty much, if it would help you succeed in this class, let me know and I'll see what I can do.

Academic integrity: It is expected that all students in this course will uphold the honor code which demands that each student live with integrity and discretion in their own life. All assignments, quizzes and exams submitted by students should be of your own hard work and knowledge. The work you do in this class will reflect your retention and comprehension of the material which will benefit you in your future endeavors. As the honor code states: At the heart of growth is the process of learning!

Actually, it does hurt to ask: The grading scale for the course is fixed-- please do not ask me to alter it. I realize that grades can be very important to many students. If you have a grade you're aiming for, it is your responsibility to earn it. I am happy to help you meet your goals and brainstorm learning strategies throughout the course. If you find a grading error on any of your assignments, it is your responsibility to let me know as soon as possible. However, if you ask to have your grade changed (outside of a grading error), I will automatically subtract up to 10 points for the first infraction (and up to 20 for any subsequent infractions).

Course Schedule

The following is the schedule for the course. The readings are matched up to the 15th edition of Principles of Anatomy and Physiology. You are not responsible for any material in the text that we do not cover in class, but the reading may give you more depth or a better perspective to understand the topic.

The schedule is subject to change and likely will. Consider this a general outline.

Lesson	Date	Topic	Assigned	Due	Chapter
	Wed Jan 18	Review and logistics			Ch. 18
1	Fri Jan 20	Endocrine system	Lecture assessment 1		
2	Mon Jan 23	Endocrine system		Lecture assessment 1	
3	Wed Jan 25	Endocrine system	VB assessment 1		
		Lab 1: Endocrine system			
4	Fri Jan 27	Endocrine system	Lecture assessment 2, Homework 1		
5	Mon Jan 30	Cardiovascular system		Lecture assessment 2	Ch. 19
6	Wed Feb 1	Cardiovascular system	VB assessment 2	VB assessment 1	
		Lab 2: Blood			
7	Fri Feb 3	Cardiovascular system	Lecture assessment 3		Ch. 20
8	Mon Feb 6	Cardiovascular system		Lecture assessment 3	
9	Wed Feb 8	Cardiovascular system	VB assessment 3	VB assessment 2	Ch. 21
		Lab 3: Heart			
10	Fri Feb 10	Cardiovascular system	Lecture assessment 4, Homework 2	Homework 1	
11	Mon Feb 13	Lymphatic / Immune Systems		Lecture assessment 4	Ch. 22
12	Wed Feb 15	Lymphatic / Immune Systems	VB assessment 4	VB assessment 3	
		Lab 4: Circulatory			
13	Fri Feb 17	Lymphatic / Immune Systems	Lecture assessment 5		
14	Mon Feb 20	Respiratory system	Midterm 1: Lessons 1-13	Lecture assessment 5	Ch. 23
15	Wed Feb 22	Respiratory system	VB assessment 5	VB assessment 4	
		Lab 5: Respiratory system			
16	Fri Feb 24	Respiratory system	Lecture assessment 6, Homework 3	Homework 2	
17	Mon Feb 27	Respiratory system		Lecture assessment 6 Midterm 1	
18	Wed Mar 1	Digestive system		VB assessment 5	Ch. 24
		Lab practical 1			
19	Fri Mar 3	Digestive system			
Spring break					
20	Mon Mar 13	Digestive system			
21	Wed Mar 15	Digestive system	VB assessment 6		
		Lab 6: Digestive system			
22	Fri Mar 17	Metabolism / Energetics	Lecture assessment 7, Homework 4	Homework 3	Ch. 25
23	Mon Mar 20	Metabolism / Energetics		Lecture assessment 7	
24	Wed Mar 22	Metabolism / Energetics	VB assessment 7	VB assessment 6	
		Lab 7: Metabolism			
25	Fri Mar 24	Thermoregulation	Lecture assessment 8		
26	Mon Mar 27	Thermoregulation		Lecture assessment 8	
27	Wed Mar 29	Urinary System	VB assessment 8	VB assessment 7	Ch. 26
		Lab 8: Thermoregulation	Midterm 2: lessons 14-26		
28	Fri Mar 31	Urinary System	Lecture assessment 9, Homework 5	Homework 4	
29	Mon Apr 3	Urinary System		Lecture assessment 9	
30	Wed Apr 5	Urinary System	VB assessment 9	VB assessment 8 Midterm 2	
		Lab 9: Urinary system			
31	Fri Apr 7	Urinary System	Lecture assessment 10		
32	Mon Apr 10	Fluid, Electrolyte, and Acid-Base Homeostasis		Lecture assessment 10	Ch. 27
33	Wed Apr 12	Fluid, Electrolyte, and Acid-Base Homeostasis	VB assessment 10	VB assessment 9	

Lab 10: Fluid, Electrolyte, and
Acid-Base Homeostasis

34	Fri Apr 14	Reproductive system	Lecture assessment 11, Homework 6	Homework 5	Ch. 28
35	Mon Apr 17	Reproductive system		Lecture assessment 11	
36	Wed Apr 19	Reproductive system Lab 11: Reproductive System	VB assessment 11	VB assessment 10	
37	Fri Apr 21	Reproductive system	Lecture assessment 12		
38	Mon Apr 24	Reproductive system		Lecture assessment 12	
39	Wed Apr 26	Putting it all together Lab practical 2		VB assessment 11	
40	Fri Apr 28	Putting it all together		Homework 6	
Finals week	Mon May 1		Final exam: cumulative		
	Sat May 6			Final exam	