

Spring 2026

Biology 1040: Human Anatomy and Physiology 2
 3 units

section 1

Latter 101: MWF 11:00 a.m.—11:55 a.m.
 Final Exam, **section 1**: May 6 (W), 10:30 a.m.—1:00 p.m.

section 4

Latter 101: MWF 8:30 a.m.—9:25 a.m.
 Final Exam, **section 4**: May 4 (M), 7:30 a.m.—10:00 a.m.

Bio 1040L: Human Anatomy and Physiology 2 lab
 1 unit

Sator 117

1a: Tu, 7:45 a.m.—10:45 a.m.

1b: Tu, 11:00 a.m.—2:00 p.m.

1c: Tu, 2:15 p.m.—5:15 p.m.

1d: Th, 6:00 p.m.—9:00 p.m.

instructor:	Dr. Rebecca J. Flietstra
office:	1 st floor Rohr Science in the Biology Department Suite
phone:	x2718
e-mail:	rflietst@pointloma.edu
office hours:	MWF: 1:00—3:00 p.m.

I want you to do well in this course. Towards that goal, I encourage questions during lectures and labs. If you have questions outside of class, feel free to email me. I can email an answer or set up a time to meet. I prefer to meet during drop-in hours, but can meet at other times, depending on my schedule.

PLNU Mission: To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Course Description: Bio 1040

The second semester of a sequence which examines the human body from an integrated perspective emphasizing the interrelationship of structure and function. Topics include sensory and autonomic nervous system, endocrine system and reproduction, cardiovascular system, immune system, respiratory system, digestive system, and urinary system. 3 units

Co-requisite: Bio 1040L

This A&P laboratory is a Bio 1040 co-requisite. Students enrolled in Bio 1040 must be enrolled in Bio 1040L, and vice versa. If Bio 1040 is dropped, Bio 1040L must also be dropped. Offered every year. Letter graded. Your grade for Bio 1040 and Bio 1040L will be calculated together and the same grade applied to both. 1 unit

Pre-requisites:

Successful completion (with a passing grade) of **Bio 1030**, and **Che 1003 or Che 1052** (or their equivalent) is a **prerequisite** to admission to this course. If you failed either one of these, you are not eligible to enroll in Bio 1040. This course is the second of a two-semester sequence where the structure and function of various systems of the body are studied in an integrated fashion. If you did not take Biology 1030 at PLNU, you should see me to be sure that your background is appropriate for this course.

Course Learning Outcomes:

1. Students will be able to identify the anatomy of, and blood flow through, the mammalian heart.
2. Students will be able to identify major blood vessels of the human and the cat, and the regions supplied by these blood vessels.
3. Students will understand the basic anatomy and physiology of the sensory and autonomic nervous systems, endocrine system, cardiovascular system, immune system, respiratory system, digestive system, and urinary system.
4. Students will be able to describe the symptoms and mechanisms of representative diseases and injuries, and explain how such pathophysiology relates to normal anatomy and physiology.

Required Texts and Materials:

Students are responsible for having the required course textbooks prior to the first day of class.

All supplemental materials posted on this course's Canvas site are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without permission of the copyright owner.

For each lecture there is an assigned reading. It is recommended that you read through these pages both prior to and following the related lecture. The textbook for this class will be used both semesters of the Human Anatomy and Physiology sequence (Bio 1030 & Bio 1040); the dissection kit is also used both semesters.

- Betts, DeSaix and Johnson, *Anatomy and Physiology* (2nd ed.), OpenStax, 2022.

This is available as a free etext or pdf at

<https://openstax.org/details/books/anatomy-and-physiology-2e>

Or you can order a hardcopy of the text by clicking the link on the above page, through the bookstore, or through Amazon.

ISBN-13: 978-1-71149-406-7

The following materials are required for work in various laboratories:

- Dissecting kit (available at bookstore)
- Safety glasses
- Old shirt or coat for dissecting work (recommended, not required)

For this course you will need to access Canvas:

- Canvas.pointloma.edu

This website will be your source for many handouts and course activities, including all lecture and laboratory handouts, online quizzes and course exams.

LomaBooks Instructions for Students:

*This course is part of our course material delivery program, **LomaBooks**. The bookstore will provide each student with a convenient package containing all required physical materials; all digitally delivered materials will be integrated into Canvas. You should have received an email from the bookstore confirming the list of materials that will be provided for each of your courses and asking you to select how you would like to receive any printed components (in-store pick up or home delivery). If you have not done so already, please confirm*

your fulfillment preference so the bookstore can prepare your materials. For more information about LomaBooks, please go: [HERE](#)

Evaluation:

Your grade for Bio 1040 and Bio 1040L will be calculated together and the same grade applied to both.

Based on an expected 1220+ total points:

Lecture points: at least 840 points

- 1) 5 non-cumulative exams (100 points/exam) = 500 points
- 2) 6 in-class quizzes (15 points/quiz) = 90 points
- 3) 20-25 on-line quizzes (5 points/quiz) = 100-125 points
- 3) one final, cumulative exam = 150 points
- 4) up to 50 points possible from unannounced in-class assignments

Laboratory points: 380 points

- 1) 12 lab quizzes (10 points/quiz + 10 points) = 130 points
- 2) 7 lab exercises (20 points/exercise) = 140 points
- 3) 1 lab exercise = 10 points
- 3) circulatory system lab practical = 100 points

Your letter grade will be determined from your cumulative percent score as follows:

A		B		C		D		F	
		B+	87.0—89.99	C+	77.0—79.99	D+	67.0—69.99	F	≤ 59.99
A	93.0—100	B	83.0—86.99	C	73.0—76.99	D	63.0—66.99		
A-	90.0—92.99	B-	80.0—82.99	C-	70.0—72.99	D-	60.0—62.99		

Extra Credit:

45 points—Although you only need to take six quizzes for class credit, up to nine quizzes (each worth 15 points) will be administered during the semester. When calculating your grades, every third quiz will be considered “extra credit”, as reflected in your cumulative score. By taking all of the quizzes (and doing well), you could potentially earn 135 points out of 90 points.

Spiritual Care

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#).

Lecture Participation:

Taking Notes:

For each topical section I will make an outline available on Canvas (canvas.pointloma.edu) at least two days prior to the first lecture for that topic. If possible, save a tree by printing these outlines as double-sided copies.

Studying:

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class (lecture and lab) meets the PLNU credit hour policy for a 4 unit class delivered over 15 weeks. It is highly anticipated that students will spend a minimum of 37.5 participating hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours meeting the course learning outcomes. Since Bio 1040 + Bio 1040L are worth four credits, **you should be studying at least 10 hours every single week**—and not just the week prior to an exam or practical. This studying should also be spread out during each week, not simply occurring before Friday’s quiz. While studying includes reading the assigned text, you should concentrate on the lecture material presented in class. Make sure that you not only **memorize** the information, but that you also **understand** the material.

Tutoring:

Tutors have been assigned to this class and they are available for individual and group tutoring. You can sign up for free tutoring using Brainfuse, the program the Tutorial Center uses to schedule tutoring sessions. Use either the link below or the QR code provided here.

<https://www.pointloma.edu/offices/tutorial-services>



Review sessions will be held on Wednesdays; the times and locations of these review sessions will be announced in class.

On-Line Quizzes:

Most Mondays and Wednesdays of this semester you will need to take a simple 5-point on-line quiz. This quiz is intended to help you keep up with all the material we are covering in class. Each quiz may cover material from the day's lecture, previous material, and even some textbook material that will not be covered in class (but may be covered on quizzes and exams).

Each quiz will be available from 8:00 a.m. on Monday or Wednesday until **7:59 a.m. the next morning**. The correct answers will be posted at 8:00 a.m. of that next morning. **BECAUSE THESE QUIZZES ARE WORTH ONLY 5 POINTS AND THE ANSWERS ARE POSTED IMMEDIATELY AFTER THE DUE DATE, THESE QUIZZES CANNOT BE RESCHEDULED FOR ANY REASON.** Although the quizzes are available before class, I recommend that you not take the quiz until after lecture.

Although each quiz is open book, it is highly recommended that you read the chapter associated with the day's lecture ahead of time. Indeed, you will be better able to learn the material if these quizzes you first study the material, then try to take the quiz without referring to your notes or textbook.

Feel free to take notes while you take these quizzes, but please **DO NOT** copy down questions and their answers, and **DO NOT** share answers with other members of the class. These quizzes are intended to help you and your classmates learn the material, so please do not undermine this goal by cheating.

In-Class Quizzes:

On the Fridays that do not have an exam, a **15-point quiz** will be administered at the start of class. These quizzes will consist of short answer and essay questions. The material covered by each quiz will be announced on the previous Wednesday. Typically for each quiz, **10-12 points** will cover new material and **3-5 points** will cover previously studied material. These quizzes have a time limit, so if you are late for class, you will have less time. These quizzes are **not** intended to give you "easy points" but are designed to help **focus your studying**. In general, these quizzes will be returned and discussed on the following Monday.

Exams:

The dates on which exams will be administered are indicated in the lecture schedule below. Exams can only be rescheduled with advance notice and with a valid reason, such as illness or a school-related activity (requiring prior notification from the administration and the student).

- Lecture exams will cover the material given in class as indicated in the syllabus.
- Each exam will be composed of multiple-choice questions and identify questions (80 pts total), and 20 points of short answer/essay questions.

Final Examination Policy:

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Class Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for **one** of those exams. However, **unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.**

Final Exam, **section 1:** May 6 (W), 10:30 a.m.—1:00 p.m.

Final Exam, **section 4:** May 4 (M), 7:30 a.m.—10:00 a.m.

Laptop Policy:

On occasion, we will use laptop computers in the lab. In the classroom, however, laptops tend to interfere with your education and can serve as a distraction for your neighbors. Numerous studies (some highlighted here) have confirmed that classroom laptop use can be detrimental to learning. For this reason, I do not allow the use of laptops in the classroom, except for exams. You may use other electronic devices to take notes, as long as you are using a stylus and not typing.

1. Laptops and other electronic devices enable more than just note-taking, introducing numerous distractions (web-surfing, homework for other classes, social media, etc.) for you and your neighbors. You may think that you can multitask, but studies show you can't.
http://www.slate.com/articles/health_and_science/science/2013/05/multitasking_while_studying_divided_attention_and_technological_gadgets.html
2. As already mentioned, using your laptop in class can be less than neighborly. Your classmates' grades can also suffer due to the distracting pull of the laptop.
<https://www.sciencedirect.com/science/article/pii/S0360131512002254>
3. Writing is a more effective way of learning material than is typing. With typing, each letter is pretty much the same thing for the brain. Writing, however, uses different muscle groups with each word and encourages the brain to integrate material during the writing process. Typing may be easy and fast, but by making the brain passive, it discourages learning.
<https://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away>
4. Using electronic devices in class also impairs long-term retention, with one study suggesting that cellphone use in class can lower one's grade by half a letter grade.
<https://www.insidehighered.com/news/2018/07/27/class-cellphone-and-laptop-use-lowers-exam-scores-new-study-shows>

Laboratory Participation:

Attendance:

Attendance is mandatory. You must stay for the **entire scheduled laboratory period** unless dismissed by the instructor. If you do not attend or fail to complete the scheduled laboratory, you will not receive any credit for that particular lab. This penalty also applies to the dissection labs. Individuals who do not fully participate in the dissection labs will have 25 points subtracted from their lab practical score for each laboratory dissection period missed. If participation in a school-sponsored activity or illness prevents you from attending your scheduled lab section during a particular week you *might* be able to attend another lab section during that same week. Such a switch requires the **prior** permission of the lab instructor and should not be viewed as an automatic privilege.

Laboratory Handouts:

Prepare for the laboratory exercise by reading the materials supplied ahead of time. Laboratory exercises will be posted on Canvas (canvas.pointloma.edu) at least one week prior to the lab. If possible, save a tree by printing these lab hand-outs as double-sided copies.

Textbook and Lecture Notes:

The lab exercises and write-up often refer to material found in your textbook and in the lecture notes. Both sources, therefore, should be brought to lab each week.

Laboratory Quizzes:

As indicated on the lab schedule, quizzes will be administered at the start of most laboratory sections. If you are late for lab, you will not be given the opportunity to take any missed quiz.

Circulatory System Practical:

The circulatory system laboratory practical is scheduled for **Tuesday, March 3** and will be administered in the one-hour blocks during normal school hours. Prior to the exam, you will be asked to indicate which time(s) are

amenable to your schedule. If you anticipate conflicts, please do your best to clear them prior to the circulatory system labs. The circulatory system laboratory practical will be worth **100 points**.

Laboratory Assignments:

Laboratory assignments will be due at the end of the lab period. You **cannot** hand in a laboratory write-up for a lab you did not attend. It is important that you recognize that these laboratory write-ups must **reflect your own work**, and not someone else's. This means that you can—and should—discuss the assignment with your classmates, but that you cannot copy their answers. Students who hand in identical assignments will not be given any credit for that particular assignment.

Laboratory Safety and Clean-Up:

No food (including gum) or water in the laboratory.

Keep all backpacks and other personal materials either on the lab bench (if there is room) or completely under the lab bench, such that no one could possibly trip over these items.

Enclosed shoes are mandatory. Open-toed shoes, clogs, backless shoes, or sandals are not permitted. You also cannot wear shoes that expose the top of the foot.

Students must wear safety glasses whenever they are handling dissection material.

At the end of each laboratory period make sure that your table, and the equipment you've used, has been **cleaned and returned** to its appropriate place. Points are deducted for messes not cleaned up.

Other Academic Issues:

CONTENT WARNING

I acknowledge that each of you comes to PLNU with your own unique life experiences. This contributes to the way you perceive various types of information. In Bio 1040 all the class content, including that which may be intellectually or emotionally challenging, has been intentionally curated to achieve the learning goals for this course. The decision to include such material is not taken lightly. These topics include several diseases which may have affected you, family members or friends. If you encounter a topic that is intellectually challenging for you, it can manifest in feelings of discomfort and upset. In response, I encourage you to come talk to me or your friends or family about it. Class topics are discussed for the sole purpose of expanding your intellectual engagement in Human Anatomy and Physiology and I will support you throughout your learning in this course.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#).

STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU RECORDING NOTIFICATION

PLNU Recording Notification In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students

and authorized personnel. Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

The laboratory portion of the course has two practical exams. Since these exams are administered in the lab, they cannot be given to the entire class at once, but must instead be given to smaller groups of students at separate times. Any discussion of the content of the exam between a student who has taken the practical exam with another student who has yet to take the exam will be considered to be cheating on the part of both students, and dealt with as described above.

ARTIFICIAL INTELLIGENCE (AI) POLICY

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc.) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

PLNU ACADEMIC ACCOMMODATIONS POLICY

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2533). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. Professors are able to view a student's approved accommodations through Accommodate.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any accommodations.

LANGUAGE AND BELONGING

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

If you (or someone you know) have experienced a bias incident regarding language, you can find more information on reporting and resources at www.pointloma.edu/bias.

SEXUAL MISCONDUCT AND DISCRIMINATION

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the

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If you (or someone you know) have experienced other forms of discrimination, you can find more information on reporting and resources at www.pointloma.edu/nondiscrimination.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university withdrawal date or, after that date, receive an “F” grade.

Tentative Lecture Schedule		
Jan 12 (M)	Spinal Reflexes <i>nervous system (452-457); neurons (459); spinal cord (509-510)</i>	chp. 14 pp. 539-542, 577-578
On Your Own	Categorizations of Sensory Receptors	
Jan 14(W)	Autonomic Nervous System <i>brain divisions (500-508); cranial nerves (522-525); spinal cord (509-510)</i>	chp. 15 pp. 589-620
Jan 16 (F)	General Senses (of skin) Chemical Senses: Gustation and Olfaction <i>cranial nerves (522-525)</i>	chp. 14 pp. 542-546
Jan 19 (M)	Martin Luther King Day	
Jan 21 (W)	Visual System <i>cranial nerves (522-525); motor units (373-374)</i>	chp. 14 pp. 552-558
Jan 23 (F)	Visual System <i>cranial nerves (522-525)</i>	chp. 14 pp. 552-558
Jan 26 (M)	Ear Anatomy <i>cranial nerves (522-525)</i>	chp. 14 pp. 546-551
Jan 28 (W)	Inner Ear Function: Hearing & Proprioception <i>cranial nerves (522-525)</i>	chp. 14 pp. 546-551
Jan 30 (F)	EXAM 1 Covers lecture material, on your own material and cranial nerves 1/12—1/26	
Feb 2 (M)	Overview of Endocrine System <i>exocytosis (90); glands (137-140)</i>	chp. 17 pp. 661-673
Feb 4 (W)	Pituitary and Hypothalamus <i>diencephalon (504-506)</i>	chp. 17 pp. 673-680
Feb 6 (F)	Other Endocrine Glands <i>Ca⁺⁺ homeostasis (217-220); sympathetic nervous system (590-593)</i>	chp. 17 pp. 680-692
Feb 9 (M)	Male Reproductive System <i>steroids (67-68); pituitary and hypothalamus (673-674)</i>	chp. 3 pp. 107-121 chp. 27 pp. 1186-1196
Feb 11 (W)	Female Reproductive System <i>steroids (67-68); pituitary and hypothalamus (673-674)</i>	chp. 27 pp. 1196-1212
Feb 13 (F)	EXAM 2 Covers lecture material 1/28—2/9	
Feb 16 (M)	Heart Anatomy and Histology; Cardiac Cycle <i>membrane junctions (132); serous membrane (129-130); skeletal muscle fibers (359-369)</i>	chp. 19 pp. 751-767; 784-787

Feb 18 (W)	Heart Electrical Properties <i>action potentials and skeletal muscle (473-475)</i>	chp. 19 pp. 772-783
Feb 20 (F)	Regulation of Cardiac Output <i>autonomic nervous system (589-620)</i>	chp. 19 pp. 788-799
Feb 23 (M)	Blood Vessels <i>histology (139-140)</i>	chp. 20 pp. 810-820
Feb 25 (W)	Blood Flow and Blood Pressure <i>reflex arc (599)</i>	chp. 20 pp. 821-830
Feb 27 (F)	EXAM 3 Covers lecture material 2/11—2/23	
Mar 2 (M)	Free Day	
Mar 3 (Tu)	Lab Practical Exam—all sections	
Mar 4 (W)	Blood <i>osmosis (86-87); bone marrow (194, 197)</i>	chp. 18 pp. 711-743
Mar 6 (F)	Blood <i>bone marrow (194, 197)</i>	chp. 18 pp. 711-743
March 9-13	Spring Break	
Mar 16 (M)	Innate Immunity <i>plasma membrane (82-84); phagocytosis (89); skin (164-167); hypothalamus (505-506)</i>	chp. 21 pp. 905-912
Mar 18 (W)	Adaptive Immunity <i>blood grouping & typing (739-743)</i>	chp. 21 pp. 912-934
Mar 20 (F)	Lymphatic System <i>osmosis (86-87)</i>	chp. 20 pp. 830-832 chp. 21 pp. 894-905
Mar 23 (M)	Respiratory System Anatomy & Volumes <i>epithelial tissues & glands (130-140); cartilage (145-146); olfaction (544-545); autonomic nervous system (589-620)</i>	chp. 22 pp. 947-961, 965-967
On Your Own	Pulmonary Air Volumes and Capacities	
Mar 25 (W)	Ventilation <i>inflammation (910-911); autonomic nervous system (589-620); pH (58-60); reflex arcs (599)</i>	chp. 22 pp. 961-970
Mar 27 (F)	Exam 4 Covers lecture and on your own material 2/25-3/23	
Mar 30 (M)	Gas Exchange, O ₂ transport <i>hemoglobin (722)</i>	chp. 22 pp. 970-979
Apr 1 (W)	CO ₂ , Respiratory Pathologies <i>pH (58-60)</i>	chp. 22 pp. 979-983
Apr 3 (F)	Easter Break	
Apr 6 (M)	Easter Break	
Apr 8 (W)	Urinary System Anatomy <i>membrane transport (84-90); capillaries (814-816)</i>	chp. 25 pp. 1109-1125
Apr 10 (F)	Urine Production <i>osmosis (86-87); capillaries (814-816)</i>	chp. 25 pp. 1119-1146
Apr 13 (M)	Regulation of Urine and Body Fluid <i>posterior pituitary (675-676); adrenal cortex (688-689)</i>	chp. 25 pp. 1119-1146
Apr 15 (W)	Regulation of MAP and Urine Volume	chp. 26 pp. 1119-1146
Apr 17 (F)	Exam 5 Covers lecture material 3/25-4/13	
Apr 20 (M)	Water Balance; pH Balance <i>pH (58-60); control of respiration (967-969)</i>	chp. 26 pp. 1155-1179
Apr 22 (W)	Pancreas and Diabetes Mellitus	chp. 17 pp. 693-697

	<i>pH (58-60); carbohydrates (62-65); oxygen transport (975-979); control of respiration (967-969); tubular reabsorption (1128-1133)</i>	
Apr 24 (F)	Digestive Processes; GI Anatomy <i>exocrine & endocrine glands (137-140); serous membranes (129-130)</i>	chp. 23 pp. 995-1047
Apr 27 (M)	Accessory Digestive Organs and Digestion <i>exocrine & endocrine glands (137-140); enzymes (54); pH (58-60); organic molecules (61-74)</i>	chp. 23 pp. 995-1047
Apr 29(W)	Large Intestines; GI Pathologies <i>osmosis and tonicity (86-87)</i>	chp. 23 pp. 995-1047
May 1 (F)	Quiz only	
May 4 (M)	FINAL EXAM for section 4, 10:30am—1:00pm	
May 6 (W)	FINAL EXAM for section 1, 10:30am—1:00pm	

Cranial Nerves

I	Olfactory	Sensory	smell
II	Optic	Sensory	vision
III	Oculomotor	Motor	contracts medial rectus, superior rectus, inferior rectus, and inferior oblique (extrinsic eye muscles) raises eyelid
		Parasympathetic	contracts intrinsic muscles of eye for near vision and pupil constriction
IV	Trochlear	Motor	contracts superior oblique (extrinsic eye muscle)
V	Trigeminal	Sensory	touch from face/upper cranium
		Motor	moves mandible (chewing; speech)
VI	Abducens	Motor	contracts lateral rectus (extrinsic eye muscle)
VII	Facial	Sensory	taste from the anterior 2/3 of tongue
		Motor	facial expression
		Parasympathetic	stimulates salivary glands and lacrimal glands
VIII	Vestibulocochlear	Sensory	hearing detects position/movement of the head for balance
		Sensory	taste from the posterior 1/3 of tongue
IX	Glossopharyngeal	Motor	swallowing
		Parasympathetic	stimulates salivary glands
		Sensory	taste; sensory from thoracic & abdominal organs
X	Vagus	Motor	tongue and throat
		Parasympathetic	decreases heart rate; increases digestion
		Motor	contracts sternocleidomastoid and trapezius
XII	Hypoglossal	Motor	contracts extrinsic and intrinsic muscles of tongue

Laboratory Schedule for Bio 1040, Spring 2026

Week of:	Lab Exercise	Quiz
Jan 12-16	Reflexes, Sensory Receptors, and Cranial Nerves	<i>cranial nerves</i>
Jan 19-23	Circulatory System Anatomy: Sheep Heart Cat Veins	<i>reflexes, sensory receptors, and cranial nerves</i>
Jan 26-30	Special Senses	<i>sheep heart & cat veins</i>
Feb 2-6	Circulatory System Anatomy: Cat Thoracic Arteries Human Heart Model Human Cerebral Arteries	<i>special senses</i>
Feb 9-13	Circulatory System Anatomy: Cat Abdominal Arteries Pig Organs	14 pt quiz: <i>cat thoracic arteries, human heart model and cerebral arteries, & review (sheep heart and cat veins)</i>
Feb 16-20	Circulatory System Anatomy: Review	16 pt quiz: <i>pig organs, cat abdominal arteries, & review</i>
Feb 23-27	Cardiovascular Physiology	<i>blood pressure</i>
Mar 2-6	Laboratory Exam: Cardiovascular Practical Tuesday, March 3 for all sections No Regularly Scheduled Laboratory Sections	
Mar. 9-13	NO LAB—Spring Break	
Mar 16-20	Diagnostic Blood Tests	<i>cardiovascular physiology</i>
Mar 23-25	Visit to Cadaver Lab	<i>diagnostic blood tests</i>
Mar 30-Apr 3	NO LAB—Easter Break	
Apr 6-10	Respiratory Physiology & Blood Typing	<i>human organs</i>
Apr 13-17	Urinalysis	<i>respiratory physiology & blood typing</i>
Apr 20-24	Osmosis and Tonicity	<i>urinalysis</i>
Apr 27-May 1	NO LAB	