

Biology 1040: Human Anatomy and Physiology 2  
section 1  
3 units  
Bio 1040L: Human Anatomy and Physiology 2 lab  
sections 1a, 1b, 1c  
1 unit  
Point Loma Nazarene University  
Spring 2021

<b>instructor:</b>	Dr. Rebecca J. Flietstra
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<b>lecture time/location:</b>	Latter 01 MWF: 11:00 a.m.—11:55 a.m.
<b>laboratory time/location:</b>	Sator Hall 117 section 1a: Tu, 7:45 a.m.—10:45 a.m. section 1b: Tu, 10:55 a.m.—1:55 p.m. section 1c: Tu, 2:05 p.m.—5:05 p.m.
<b>office hours:</b>	MWF: 1:00—2:30 p.m.

**Purple Tier:** When San Diego County is under Purple Tier restrictions, all lectures will be remote. Lectures on Monday and Wednesday will be synchronous/live over Zoom. On Fridays, quizzes and exams will be administered on Canvas through Honorlock. Friday's lecture will be a recorded lecture/asynchronous.

Labs in Purple Tier will be face-to-face, with half the lab (up to 12 students) meeting during the first half of the assigned lab time, and the other half of the lab meeting during the second half of the assigned time. You will be informed of your assigned time prior to the start of the semester. In lab you will be paired with one other student for the entire semester for easier contact tracing.

**Red Tier:** When San Diego County is under Red Tier restrictions, Monday and Wednesday lectures will become hybrid lectures, with half of the students in person on Mondays/remote on Wednesdays, and the other half remote on Mondays/in person on Wednesdays. As San Diego moves into the Red Tier, I will assign students to these two groups. On Fridays, quizzes and exams will be administered on Canvas through Honorlock. Friday's lecture will be a recorded lecture/asynchronous.

Labs in Red Tier will be face-to-face, with half the lab (up to 12 students) meeting during the first half of the assigned lab time, and the other half of the lab meeting during the second half of the assigned time. You will be informed of your assigned time prior to the start of the semester. In lab you will be paired with one other student for the entire semester for easier contact tracing.

At all times, a face mask (not a gaiter or loose cloth; face mask cannot have a valve or vent) must be worn properly in lab and when attending class face-to-face. Your face mask should completely **cover your nose and mouth** at all times. You should have several face masks in your possession, since you may wish to switch to a fresh mask once or twice a day. You will also want to have a good supply of cloth masks so that they can be washed frequently.

If you have any questions about the material in this course, feel free to email me or to attend the Zoom office hours.

### 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 anatomy and physiology laboratory is a co-requisite for Bio 1040. 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.

### Student 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:

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.

- Amerman, *Human Anatomy and Physiology* (2<sup>nd</sup> ed.), Pearson, 2019.  
Bundled with *Mastering A&P*

The following materials are required for work in various laboratories:

- Dissecting kit (available at bookstore)
- Old shirt or coat for dissecting work

For this course you will need to access two websites:

- Canvas.pointloma.edu  
*This website will be your source for all lecture and laboratory handouts.*
- www.masteringaandp.com  
*This website is available through your textbook—either included in the price of a new textbook, or a separate purchase with a used textbook. This website will serve as a resource for images and study guides, as well as the site you will use to access on-line quizzes.*

### Recommended Materials

These two items are for sale at the bookstore and may be helpful for learning the anatomical material this semester and next semester.

- Krieger, *A Visual Analogy Guide to Human Anatomy & Physiology*, Morton, 2013
- Hansen, *Netter's Anatomy Coloring Book*, Elsevier, 2010.

### Evaluation:

based on an expected **1210+ total points**

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

**Lecture points: at least 890 points**

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

**Laboratory points: 320 points**

- 1) 9 lab quizzes (10 points/quiz + 10 points) = 100 points
- 2) 6 lab exercises (20 points/exercise) = 120 points
- 3) circulatory system lab practical = 100 points

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

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

**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.

**Lecture Participation:****Taking Notes:**

For each topical section I will make an outline available on Canvas ([canvas.pointloma.edu](http://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:**

It is highly recommended that you study at least 2-3 hours for every credit hour. Since Bio 1040 + Bio 1040L are worth four credits, **you should be studying 8—12 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.

**MAP Quizzes:**

Unless you’ve purchased a different edition, your textbook comes with a free, 2-year access to Mastering A&P. If you are using a different version of the text, you will need to purchase this separately ([MasteringAandP.com](http://MasteringAandP.com); choose Amerman, Human Anatomy & Physiology, 1e). This website is used both semesters in all sections of Bio 1030/Bio 1040. The link to Mastering A&P for this course is found on the Canvas page.

Unless explicitly announced in class, every Monday and Wednesday 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 noon of Monday or Wednesday to 7:59 a.m. the next morning.**

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.

### Lecture Quizzes:

On the Fridays that do not have an exam, a **15-point quiz** will be administered at the start of class (11:00 am PT). These quizzes will consist of short answer and essay questions. The material to be covered by each quiz will be announced on the previous Wednesday. 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. These exams will be administered through Canvas, using Honorlock, on the scheduled day, 11:00am—12:00pm PT. Exams can only be rescheduled with advance notice and with a valid reason, such as illness (requiring a signed statement from a physician) or a school-related activity (requiring prior notification from the administration and the student). **The final cannot be rescheduled. This semester the final will be given on Friday, June 11, 10:30 a.m.—1:00 p.m.**

- Lecture exams will cover the material given in class up as indicated in the syllabus.
- Each exam will be composed of 40 multiple-choice questions (80 pts total) and 20 points of short answer/essay questions.

### Laboratory Participation:

#### Attendance:

**Attendance is mandatory.** You are expected to stay for the **entire scheduled laboratory period** (which, under COVID conditions, is half of the lab period) unless dismissed by the instructor. Each week, part of the lab will be completed inside the laboratory, and part will be completed online. Write-ups associated with the online portion will be due at 5:00pm PT on Fridays.

#### 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) d-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 17** 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:

The portion of the lab write-up based on the in-person portion of each lab 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.

Any write-up associated with the online portion of a lab will be due on Fridays at 5:00pm PT.

### Laboratory Safety and Clean-Up:

**At all times, a face mask** (not a gaiter or loose cloth; face mask cannot have a valve or vent) **must be worn properly** in lab. Your face mask should completely cover both your nose and mouth at all times. You should have several face masks in your possession, since you may wish to switch to a fresh mask once or twice a day. You will also want to have a good supply of cloth masks so they can be washed frequently.

**No food (including gum) or water in the laboratory.** You must leave the lab classroom to go outside and take a drink from a closed container. Closed beverage containers must be protected within a backpack or bag while in the lab, such that air particles cannot fall on the drinking surface.

Hands should be washed **thoroughly (20-30 sec) with soap both at the beginning and at the conclusion of each laboratory period.** Coronaviruses are effectively trapped by soap and removed from your hands if you thoroughly wash your hands with soap for at least 20-30 seconds, and then dry them completely. Hand sanitizer will be made available as well.

**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.**

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.

Disinfect your lab bench by thoroughly spraying its surface with the special covid-19 disinfectant. Let the disinfectant sit on the bench surface for a full minute (time this) before wiping it off.

As you use shared equipment, follow the instructions for cleaning it after each use.

**Do NOT touch your face while in lab**, regardless of whether or not you are wearing lab gloves. Do not touch your phone or laptop in lab until you have washed your hands or used hand sanitizer. Sanitize your hands after touching shared equipment.

## Other Academic Issues:

### 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.

### INCOMPLETES AND LATE ASSIGNMENTS

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

### 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 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.

### PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center ([DRC@pointloma.edu](mailto:DRC@pointloma.edu) or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that

**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 becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

### **PLNU ATTENDANCE AND PARTICIPATION POLICY**

Regular and punctual attendance at all **synchronous** class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), 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 drop date or, after that date, receive the appropriate grade for their work and participation. In some courses, a portion of the credit hour content will be delivered **asynchronously** and attendance will be determined by submitting the assignments by the posted due dates. See [Academic Policies](#) in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted. **Asynchronous Attendance/Participation Definition**  
A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

### **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](#)

### **USE OF TECHNOLOGY**

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](#) information. Additionally, students are required to have headphone speakers compatible with their computer available to use. If a student is in need of technological resources please contact [student-tech-request@pointloma.edu](mailto:student-tech-request@pointloma.edu).  
Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

Topic 1	Nervous System
Topic 2	Endocrine System
Topic 3	Cardiovascular System
Topic 4	Immune System
Topic 5	Respiratory System
Topic 6	Digestive System
Topic 7	Urinary System
Topic 8	Diabetes Mellitus

## Tentative Lecture Schedule

<b>Mar 1 (M)</b>	Sensory Receptors; Spinal Reflexes <i>nervous system (382-383); neurons (384-387); spinal cord (455-459)</i>	chp. 13 pp. 497-504, 506-511
<b>On Your Own</b>	Categorizations of Sensory Receptors	
<b>Mar 3 (W)</b>	Autonomic Nervous System <i>brain divisions (426); cranial nerves (479-487); spinal cord (455-459)</i>	chp. 14 pp. 516-533
<b>Mar 5 (F)</b>	Chemical Senses: Gustation and Olfaction <i>cranial nerves (479-487)</i>	chp. 15 pp. 536-543
<b>Mar 8 (M)</b>	Visual System <i>cranial nerves (479-487); motor units (368-369)</i>	chp. 15 pp. 544-562
<b>Mar 10 (W)</b>	Visual System <i>cranial nerves (479-487)</i>	chp. 15 pp. 544-562
<b>Mar 12 (F)</b>	Ear Anatomy <i>cranial nerves (479-487)</i>	chp. 15 pp. 562-577
<b>Mar 15 (M)</b>	Inner Ear Function: Hearing & Proprioception <i>cranial nerves (479-487)</i>	chp. 15 pp. 562-577
<b>Mar 17 (W)</b>	Overview of Endocrine System <i>exocytosis (84); glands (135-137)</i>	chp. 16 pp. 584-592
<b>Mar 19 (F)</b>	<b>EXAM 1</b> Covers lecture, on your own and cranial nerves 3/1—3/15	
<b>Mar 22 (M)</b>	Pituitary and Hypothalamus <i>diencephalon (433-435)</i>	chp. 16 pp. 593-600
<b>Mar 24 (W)</b>	Other Endocrine Glands <i>Ca<sup>++</sup> homeostasis (203-204); sympathetic nervous system (519-526)</i>	chp. 16 pp. 601-621
<b>Mar 26 (F)</b>	Male Reproductive System <i>steroids (63); pituitary and hypothalamus (593-600)</i>	chp. 3 pp. 111-116 chp. 26 pp. 1022-1039
<b>Mar 29 (M)</b>	Female Reproductive System <i>steroids (63); pituitary and hypothalamus (593-600)</i>	chp. 26 pp. 1039-1058
<b>Mar 31 (W)</b>	<b>MENTAL HEALTH WEDNESDAY—NO CLASS</b>	
<b>Apr 2 (F)</b>	Heart Anatomy and Histology; Cardiac Cycle <i>membrane junctions (126-127); serous membrane (19-20); skeletal muscle fibers (148-149)</i>	chp. 17 pp. 630-646; 655-661
<b>Apr 5 (M)</b>	Heart Electrical Properties <i>action potentials and skeletal muscle (347-358)</i>	chp. 17 pp. 647-661
<b>Apr 7 (W)</b>	Regulation of Cardiac Output <i>autonomic nervous system (510-533)</i>	chp. 17 pp. 662-666
<b>Apr 9 (F)</b>	<b>EXAM 2</b> Covers lecture material 3/17—4/5	
<b>Apr 12 (M)</b>	Blood Vessels <i>histology (127-150)</i>	chp. 18 pp. 670-675, 687-692
<b>Apr 14 (W)</b>	Blood Flow and Blood Pressure <i>reflex arc (506)</i>	chp. 18 pp. 675-687
<b>Apr 16 (F)</b>	Blood—1 <i>reversible reactions (42); osmosis (76-79); bone marrow (188)</i>	chp. 19 pp. 723-751

<b>Apr 19 (M)</b>	Blood—2 <i>bone marrow (188)</i>	chp. 19 pp. 723-751
<b>Apr 21 (W)</b>	Lymphatic System <i>osmosis (76-79)</i>	chp. 20 pp. 754-762
<b>Apr 23 (F)</b>	<b>EXAM 3</b> Covers lecture material 4/7—4/19	
<b>Apr 26 (M)</b>	Innate Immunity <i>plasma membrane (70-74); phagocytosis (83); skin (160-173); hypothalamus (433)</i>	chp. 20 pp. 763-772 chp. 23 pp. 929-932
<b>Apr 28 (W)</b>	Adaptive Immunity <i>blood grouping &amp; typing (746-750)</i>	chp. 20 pp. 772-787
<b>Apr 30 (F)</b>	Respiratory System Anatomy & Volumes <i>epithelial tissues &amp; glands (127-137); cartilage (142-143); olfaction (537-540); autonomic nervous system (516-533)</i>	chp. 21 pp. 802-817, 825-827
<b>On Your Own</b>	Pulmonary Air Volumes and Capacities	
<b>May 3 (M)</b>	Ventilation <i>inflammation (768-771); autonomic nervous system (516-533); pH (47-50); reflex arcs (506)</i>	chp. 21 pp. 818-825, 840-843
<b>May 5 (W)</b>	<b>MENTAL HEALTH WEDNESDAY—NO CLASS</b>	
<b>May 7 (F)</b>	Gas Exchange, O <sub>2</sub> transport <i>hemoglobin (726-727)</i>	chp. 21 pp. 827-835
<b>May 10 (M)</b>	CO <sub>2</sub> , Respiratory Pathologies <i>pH (47-50)</i>	chp. 21 pp. 835-846
<b>May 12 (W)</b>	Digestive Processes; GI Anatomy <i>exocrine &amp; endocrine glands (134-137); serous membranes (19-20)</i>	chp. 22 pp. 851-868, 872-876
<b>May 14 (F)</b>	<b>Exam 4</b> Covers lecture and on your own material 4/21—5/10	
<b>May 17 (M)</b>	<b>FREE DAY</b>	
<b>Apr 20 (Tu)</b>	<b>Lab Practical Exam—all sections</b>	
<b>May 19 (W)</b>	Accessory Digestive Organs and Digestion <i>glands (134-137); enzymes (43-45); pH (47-50); o-chem (50-64)</i>	chp. 22 pp. 861-864, 868-871, 879-894
<b>May 21 (F)</b>	Large Intestines; GI Pathologies <i>osmosis and tonicity (76-80)</i>	chp. 22 pp. 876-878
<b>May 24 (M)</b>	Urinary System Anatomy <i>membrane transport (80-82); capillaries (687-689)</i>	chp. 24 pp. 947-956
<b>May 26 (W)</b>	Urine Production <i>osmosis (76-80); capillaries (687-689)</i>	chp. 24 pp. 957-981
<b>May 28 (F)</b>	<b>Exam 5</b> Covers lecture material 5/12—5/24	
<b>May 31 (M)</b>	Regulation of MAP, Urine Composition & Urine Volume <i>posterior pituitary (594-596); adrenal cortex (608-612)</i>	chp. 24 pp. 957-981 chp. 25 pp. 984-987
<b>June 2 (W)</b>	pH Balance <i>pH (47-50); control of respiration (840-843)</i>	chp. 25 pp. 1008-1018
<b>June 4 (F)</b>	Pancreas and Diabetes Mellitus <i>pH (47-50); carbohydrates (51-52); oxygen transport (832-850); control of respiration (840-843); tubular reabsorption (967-971)</i>	chp. 16 pp. 614-618 chp. 22 pp. 879-880
<b>June 11 (F)</b>	<b>Final exam, 10:30a.m.—1:00 p.m. PT</b>	

# Cranial Nerves

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

## Laboratory Schedule for Bio 1040, Spring 2021

<b>Week of:</b>	<b>Lab Exercise</b>	<b>Quiz</b>
<b>Mar. 1-5</b>	Brain and Cranial Nerves	<i>cranial nerves</i>
<b>Mar. 8-12</b>	Reflexes and Sensory Receptors	<i>brain and cranial nerves</i>
<b>Mar. 15-19</b>	Special Senses	<i>reflexes &amp; sensory receptors</i>
<b>Mar 22-26</b>	Anatomy: Sheep Heart Human Veins	<i>special senses</i>
<b>Mar. 29-Apr. 2</b>	<b>No lab</b>	
<b>Apr. 5-9</b>	Anatomy: Fetal Pig Organs Human Organs Upper Human Arteries	<i>sheep heart &amp; human veins</i>
<b>Apr 12-16</b>	Cardiovascular Physiology	<b>14 pt quiz:</b> <i>organs of fetal pig and human, upper human arteries &amp; review (sheep heart and human veins)</i>
<b>Apr. 19-23</b>	Anatomy: Human Heart Model Lower Human Arteries Human Cerebral Arteries	<i>cardiovascular physiology</i>
<b>Apr. 26-30</b>	Diagnostic Blood Tests	<b>16 pt quiz:</b> <i>human heart model, lower human arteries, human cerebral arteries &amp; review</i>
<b>May 3-7</b>	<b>No lab</b>	
<b>May 10-14</b>	Anatomy: Review	<i>diagnostic blood tests</i>
<b>May 17-21</b>	<b><u>Laboratory Exam: Anatomy Practical</u></b> <b><u>Tuesday, May 18 for all sections</u></b> No Regularly Scheduled Laboratory Sections	
<b>May 24-28</b>	Urinalysis	<i>No lab quiz</i>
<b>May 31-June 4</b>	<b>No lab</b>	