

BIOL 252 Human Anatomy and Physiology Dr. Gidi Shemer

Fall 2020 TR 11:30- 12:45 Online class Sections 003-004

Human A&P is an advanced course that investigates the form and the function of the human body. You should expect a comprehensive, demanding, and rigorous class in the next semester.

The course is composed of two online class meetings each week. Most of you will also take the lab (252L). The lab will get into the details of the anatomy of the human body. The course itself will focus on how human physiology follows our basic anatomy, and will cover our twelve body systems. **This is NOT a class for passive learners. You are expected to be actively engaged in this course through online class discussions, class activities and pre- as well as post-lecture assignments and readings.** You are expected to **visit peer-mentors** routinely. Check in regularly, maybe with a buddy or small group. Form your own study groups too. Attend **SI sessions** to review material with your SI leaders.

This semester, due to COVID 19, we will run the course remotely. I will offer synchronous online lectures that will involve student activities. The lectures will be recorded and shared. Attendance is NOT mandatory. You do not have to join our synchronous meetings, but you are responsible for all the material covered in those recorded meetings, assigned readings, and online assignments.

For a detailed schedule, please read the “detailed scheduled” document on Sakai (under “Syllabus”). Each week- zoom IDs will be posted on the sakai main site.

Prerequisites

BIOL 101 and BIOL 101L

Your Instructor

Dr. Gidi Shemer

Coker Hall 213A

Office hours: Check the course Sakai site

Web page: <http://www.bio.unc.edu/Faculty/Shemer/>

Email: bishemer@email.unc.edu



Supplemental Instruction (SI)

Dimitry Shitarev

Hannah Rayala

Course Learning Outcomes

At the end of this semester you should be able to:

- Define anatomy and physiology and explain the relationship between structure and function
- Define homeostasis and explain why it is important for proper body functions
- Predict the physiological outcomes of homeostatic imbalances
- Integrate the knowledge you gained in different parts of the course
- Apply one’s knowledge of human anatomy and physiology to real life examples

Textbook

The textbook comes with a web-based software package called MasteringAP that will be the platform through which you will be quizzed and receive short pre-lecture assignments. The package also includes an interactive eBook. There are also other purchase options of the textbook. Details on the purchase options can be found on the Sakai Syllabus folder and the file "Details about eBook and purchase options"

In order to register to MasteringAP, check the Sakai Syllabus folder and the file "MasteringAP registration instructions" (**enrollment into the MasteringAP course will start**). Course ID is- **shemer95874**

Peer-mentors

Several of my best students who excelled in this class in the past will serve as peer mentors. They will be present in class (online) and assist during class activities and each will **offer a weekly 1.5 hours of one-on-one mentoring session** (check piazza and our sakai site for updated mentoring session hrs.)

Supplemental Instruction (SI)

Twice a week, we will offer supplemental instruction (SI) sessions (days- TBA). The sessions will be led by two undergraduate students who excelled in this class in the past and already served as peer mentors. The SI sessions will allow you to process and actively practice material that was taught in the previous week. Students referred to the SI sessions in the past as one of the most significant tools that improved their learning

Class Attendance

Students are not required to participate in the online synchronous meetings, but they are recommended to, as they will benefit from in-class activities. Students are responsible for all the materials covered in these sessions though (sessions will be recorded and shared). **Most of the material discussed in lecture will not be found in the textbook.** You are responsible **for all material and announcements made in lectures.** You are also responsible for material **covered by your assigned reading and voicethread or Zoom online lectures**

Assignments

Each week you will have **pre-class, in-class, and sometimes post-class assignments:**

- The pre-class assignments will be based on **assigned readings from the textbook** and in some cases- **online lectures** that you will view via the **VoiceThread** tool on Sakai. The assignments will be given via the **MasteringAP** system and via **Sakai Assignments.**
- In-class assignments will include **Learning Catalytics** (see below), notecards, and other activities
- Post-class assignments will include mostly **MasteringAP, Sakai assignments** and **PeerWise** activities (see below)

The due dates for submitting your assignments can be found on the **class detailed schedule** posted on Sakai. **I will NOT send reminders. You are responsible to follow the schedule and submit the assignments on time.** There will be no "second chances" in this case. Make sure you check the schedule and plan your time carefully. The time for all **due dates is 10:00 am**

Interactive educational tools

Learning Catalytics

During class time we will use Learning Catalytics (LC), an interactive program that will allow you to participate in assignments through your device. LC comes as part of a package when you purchase the MasteringAP and the textbook. For accessing LC, check the Sakai Syllabus folder and the file "Learning Catalytics access instructions"

PeerWise

One of your assignments during the semester will be to create multiple choice questions that address the material we learn. Asking questions and evaluate your peers' questions has been shown to be an invaluable tool in developing deep learning. Posting and reviewing questions will be done through an interactive system called PeerWise. Instructions on how to register and how to use PeerWise will be given during the semester.

VoiceThread

In addition to the readings, in some cases the background will be given as mini-lectures that you will access through the VoiceThread tool on Sakai. We will also use this system to cover the **Integumentary system** and the **Respiratory system** that will not be covered during class meetings.

Piazza

We will be using an online platform called "Piazza" this semester. You may post any questions that you have about the course to this site at any time and they will be answered by either a fellow student, a mentor, or me. Your questions may be more general and may relate to the course itself or they may be more specific and instead relate directly to content and/or material from class. You should not post anything unrelated to the class. No personal attacks or usage of offensive language will be allowed. No posts that directly give the answers to assignments are allowed. For instance "The answer to #5 is C". That being said, you are allowed to ask questions concerning the assignments, and your classmates are allowed to respond, as long as the conceptual framework is being discussed.

Grading

Your grade for this course will be determined as follows:

2 midterm exams + 1 (non-cumulative) final exam = 26% each	= 78%
MasteringAP assignments	= 6%
Assignments (Sakai & PeerWise)	= 16%

Letter grades will not be assigned for individual exams, only scores. Final letter grades will be assigned based on the total number of points for the entire semester:

A (93-100) A- (90-92) B+ (87-89) B (83-86) B- (80-82) C+ (77-79) C (73-76) C- (70-72) D+ (66-69) D (60-65) F (<60)

Your grade will be based on your performance and not on comparing your performance to your peers'. Exam questions will be taken **mainly from lectures**, and to some extent- from assigned readings and pre-class online lectures. **Grades will not round up.** B= 83, NOT 82.96. Exams must be taken on the dates indicated during the regular class period; no makeup exams except in special circumstances, i.e. medical or family emergency documented in writing.

All course materials including your notes and assignments are covered by University Copyright Policy, @ <http://www.unc.edu/campus/policies/copyright%20policy%2000008319.pdf>

This means it is illegal and an honor code offense to share your notes or any other course materials with anyone not directly affiliated with this class.

THE PROFESSOR RESERVES THE RIGHT TO MAKE CHANGES TO THE SYLLABUS, INCLUDING PROJECT DUE DATES AND TEST DATES. THESE CHANGES WILL BE ANNOUNCED AS EARLY AS POSSIBLE.

Schedule Below you will find a general schedule. This schedule might change during the semester. For a detailed schedule, including assigned readings and assignments schedule, please read the **Detailed course schedule** found on our Sakai website under the Syllabus folder

Date			Class	Lab	
T	Aug	11	1	Introduction to A&P and to the nervous system	
R	Aug	13	2	Cells of the nervous system	
T	Aug	18	3	Neurophysiology- membrane potentials	Spinal cord
R	Aug	20	4	Action potential	
T	Aug	25	5	Synaptic activity	Brain
R	Aug	27	6	Brain I	
T	Sep	1	7	Brain II	Lab Quiz I
R	Sep	3	8	Sensation	
T	Sep	8	9	Endocrine System I: Basic mechanisms and hypothalamic control	Axial Skeleton
R	Sep	10	10	Endocrine System II: other glands	
T	Sep	15	11	Skeletal System I: Bone structure and function	Appendicular Skeleton
R	Sep	17		EXAM I (Lectures 1-10)	
T	Sep	22	12	Skeletal System II: Bone growth and development	Lab Quiz II
R	Sep	24	13	Muscular System I: How the muscle cell contracts	
T	Sep	29	14	Muscular System II: Physiology of the muscle organ	Muscles of Upper limb
R	Oct	1	15	Muscular System III	
T	Oct	6	16	Cardiovascular - Heart I	Muscles of Lower limb
R	Oct	8	17	Cardiovascular- Heart II	
T	Oct	13	18	Cardiovascular- blood vessels I	Lab Quiz III
R	Oct	15	19	Cardiovascular- Blood vessels II	
T	Oct	20		EXAM II (Lectures 11-19)	Cardiovascular & respiratory
R	Oct	22	20	Immune system I + Integumentary online	
T	Oct	27	21	Immune system II	Digestive & Urogenital
R	Oct	29	22	Digestive System I	
T	Nov	3	23	Digestive System II + Respiratory online	Lab Quiz IV
R	Nov	5	24	Digestive System III	
T	Nov	10	25	Urinary System	Cumulative Lab Exam
R	Nov	12	26	Reproductive system- male	
T	Nov	17	27	Reproductive system- female	
				FINAL EXAM (Lectures 20-27 + online systems)	

As part of the General Education curriculum, Biology 252 will enable you to learn how to make and interpret scientific descriptions and explanations of the natural world, practice the skills of scientific inquiry, and evaluate scientific evidence within the contexts of both scientific communities and society.

Questions to consider as a student

1. What rules govern the natural world and how are they discovered, tested, and validated?
2. What is distinctive about the approach to understanding employed in the natural sciences?
3. What challenges are encountered in making measurements of the natural world?
4. What are the limits of investigation in the natural sciences?

General Education Natural Scientific Investigation Learning Outcomes

1. Demonstrate the ability to use scientific knowledge, logic, and imagination to construct and justify scientific claims about phenomena, including validation through rigorous empirical testing.
2. Analyze and apply processes of natural scientific inquiry as dictated by the phenomena and questions at hand. These include generating and testing hypotheses or theories; using logic and creativity to design investigations to test these hypotheses; collecting and interpreting data; making inferences that respect measurement error; building and justifying arguments and explanations; communicating and defending conclusions; revising arguments and conclusions based on new evidence and/or feedback from peers; and synthesizing new knowledge into broader scientific understanding.
3. Evaluate science-related claims and information from popular and/or peer-reviewed sources by examining the relationship between the evidence, arguments, and conclusions presented and by assessing consistency with existing knowledge from valid and reliable scientific sources.
4. Identify, assess, and make informed decisions about ethical issues at the intersections of the sciences and society.

Students will encounter capacities in gen ed class to reinforce specific ideas and skills:

Pose problems and questions that require systematic thinking about evidence, argument and uncertainty.

In Biology 252, you will have multiple opportunities to examine evidence from data from real experiments and published papers. You will find uncertainty in data interpretation, as well as scientific debates in various fields of physiology (e.g. nutrition recommendations with regards to the digestive system). We will address competing hypotheses at times, and we will evaluate the strength of evidence that support those hypotheses.

Consider its content in the context of human difference between and within societies; the full range of legitimate debate in its field; and/or change over time. In Biology 252 we will investigate differences and similarities between individuals and between communities, as our physiology is affected by both genetic and environmental factors that vary among those groups. For example, we will discuss how genetic as well as socio-economic backgrounds affects the risks and the pathophysiology of diabetes type 2. As mentioned above, we will address debates in different physiology-related fields (e.g. effects of different nutritional approaches on the digestive and the cardiovascular systems) and evaluate the scientific evidence that supports those approaches.

Writing totaling at least 10 pages in length, or the intellectual equivalent. We will not have one long assignment, but a variety of short writing assignments in class and beyond, as well as daily writing assignments based on reading comprehension (guided reading questions). Many of these will be graded for completion and some will be graded for quality.

Presenting material to the class, small groups, or the public through oral presentations, webpages, or other means that enable corroboration of fact and argument. We will not have one large presentation, but a variety of daily assignments to present your ideas to classmates in small group discussions and to the larger class in lecture.

Collaborating in pairs or groups to learn, design, solve, create, build, research or similar. Throughout the semester you will work with your peers in groups or pairs to address challenging questions that will be presented to you during the class meetings. In addition, throughout the semester you will use an online tool called PeerWise to create and solve practice problems, as well as to evaluate and provide feedback to your peers.