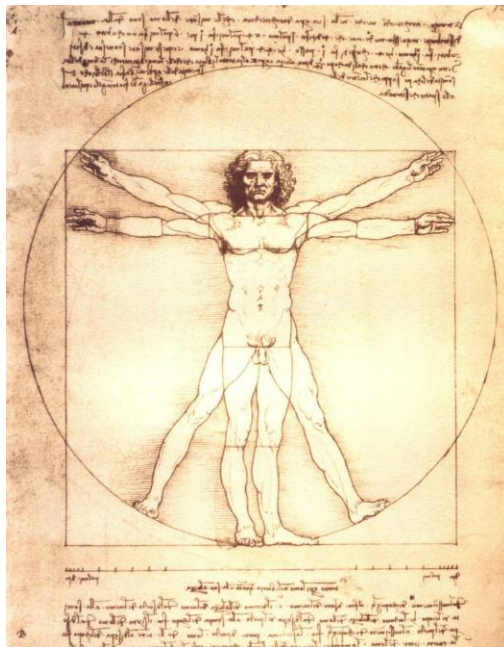


BISC-104 (Human Anatomy and Physiology, *How the Body Works*) Lecture Syllabus

University of Southern California (USC), Fall 2023



One of Leonardo Da Vinci's most famous contributions to the field of human anatomy was his drawing of the "**Vitruvian Man**", which represents his perspective on the proportions of the human body, and includes handwritten notes based on the work of the Roman architect Vitruvius.

Image Credit: [The Vitruvian Man](#)

Summary and Purpose

The overarching goal of this general education (GE) course is to provide undergraduate students with an introduction to and appreciation for the complexity and emergent properties of human anatomy and physiology. While there are no specific prerequisites for this course, general knowledge of high school-level biology and chemistry is helpful. Please note that this course is not designed for students majoring in biology or related health science disciplines. BISC-104 does not satisfy the requirements for pre-health admissions, and those intending to or currently majoring in a health sciences field should consider enrolling in BISC-307, a more in-depth review of human anatomy and physiology designed for biology and pre-health majors.

Learning Objectives

By the end of the semester, students will be able to:

- **Describe** the general mechanisms that facilitate the function of major human physiological systems.
- **Summarize** the types of cellular communication mechanisms that work to maintain homeostasis.
- **Identify** key anatomical structures and landmarks in various organ systems, and their associated functions.
- **Explain** the ways in which genetic and environmental factors can influence underlying physiology and ultimately, human health.

Instructor: Rita Barakat ["REE-duh BEAR-uh-CAT", she/ her], PhD, rbarakat@usc.edu

Office Hours: Thursdays, 1:00 - 3:00 pm OR by appointment via Zoom (appointments must be made *at least 24 hours in advance*)

Laboratory Director: Michael Moore, PhD, moore@usc.edu, **Office:** ZHS 371B

Graduate Student Teaching Assistants:

- **TBD, Lab Sections:** Tuesdays from 10:00 - 11:50 am and 2:00 - 3:50 pm, Wednesdays from 2:00 - 3:50 pm
Office Hours: TBD
- **TBD, Lab Sections:** Wednesdays and Thursdays from 10:00 - 11:50 am, Thursdays from 2:00 - 3:50 pm
Office Hours: TBD

Recommended Textbook: [*Visualizing Human Biology \(5th Edition\)*](#), by Kathleen Ann Ireland. Published by Wiley, ISBN: 978-1-119-39826-4.

Assigned Readings

All assigned readings listed on the course syllabus are recommendations, but are not required readings. Exam questions will not be based on information that is only included in the textbook, though information presented in lectures will be aligned to and overlap with information included in these assigned readings.

Lectures

All lectures will be held in-person in the Zumberge Hall of Science (ZHS), Room 159. Lectures will also be streamed live and recorded via Zoom, and the Zoom meeting information will be made available on the course Blackboard page. Lectures take place live on Mondays and Wednesdays from 1:00 - 1:50 pm (PT), as per the USC Fall 2023 Schedule of Classes. All lectures will be recorded and automatically made available via the course Blackboard page within 24 hours of the live lecture broadcast.

Attendance at lecture is not mandatory, however, unforeseen technical issues may result in a delay in uploading or complete loss of a lecture recording, and thus, it is in your best interest to attend the live in-person lectures whenever possible. Recurring schedule conflicts with live lectures require a formal petition from the Registrar's Office, please contact the course instructor and lab director if you anticipate that you will have this kind of conflict with the lecture (or lab) portions of the course.

Laboratory

Please make sure to review the associated *Laboratory Course Syllabus/ Manual* to ensure that you have all the necessary information and materials for the lab portion of the course. Attendance in the lab section of the course is mandatory, and failure to attend lab sections will result in a significant loss of lab section points. Any foreseeable conflict(s) with lab sections should be indicated to the course lab director and the teaching assistant for that section in writing as soon as possible to avoid loss of lab section points.

Exams

Content: The four exams will be based on content presented in the lecture portion of the course. While the exams are not strictly "cumulative", the nature of the course content is such that understanding of foundational concepts presented early in the course will be necessary for understanding future topics. Thus, it is recommended that you review select topics from previous sections of the course prior to each exam, and these specific topics will be mentioned in lecture and exam review sessions leading up to each exam.

Dates: Exams will take place in-person in the regular lecture hall (CPA 258), unless otherwise noted. Students with OSAS-approved accommodations will be notified in advance of any alternative locations. Please mark the following dates and times for the four lecture exams in your calendar.

Lecture Exam 1: Friday, 9/15 from 1:00 - 1:50 pm (PT)

Lecture Exam 2: Wednesday, 10/11 from 1:00 - 1:50 pm (PT)

Lecture Exam 3: Monday, 11/6, from 1:00 - 1:50 pm (PT)

Lecture Exam 4: Wednesday, 12/13, from 11:00 am - 12:30 pm (PT)

See the *Absences, Extensions and Make-ups* and *Technology* sections below for more information on the administration of lecture exams.

Regrade Policy: Exam regrade requests will only be accepted if they are submitted in writing within 24 hours of receiving your exam grade and include the information in the *Exam Regrade Request Form*, which can be found on the course Blackboard page.

Grading

Your overall course grade will be broken down into the following categories/ point values, for a total of 500 points. There are no extra credit opportunities in this course, so please do not ask about them.

Deliverable	Points
Lecture Exam 1 (Friday, 9/15)	100
Lecture Exam 2 (Wednesday, 10/11)	100
Lecture Exam 3 (Monday, 11/6)	100
Lecture Exam 4 (Wednesday, 12/13)	100
Laboratory	100
TOTAL	500

It is not our intention to curve course grades, however, there historically have been independent curves for each exam. Please note that any curves are not indicative of the final course grades, as these curves will vary based on overall course performance on individual exams and in lab sections.

Communication

If you ever need to communicate with the course instructor outside of class, please visit during scheduled office hours, or you can send an email with **your name and “BISC-104” in the subject line** to rbarakat@usc.edu to make an appointment for office hours or share written inquiries. All emails sent after 6:30 pm (PT) may not receive a response until the following day. In general, all emails sent during a weekday (Monday - Friday) will receive a response within 24 hours, and all emails sent during a weekend (Saturday - Sunday) will receive a response within 48 hours, with some exceptions for holidays. It is strongly recommended that you check in with the course instructor and/ or lab director at least once throughout the semester in office hours, and we recommend that you set up an appointment at least 24 hours in advance to best accommodate your schedule. Questions about lecture content should be first directed to your assigned teaching assistant, and if they are unable to answer your question and/ or if you would like further clarification, you may contact the course instructor and/ or lab director. All questions about grading, OSAS accommodations or excused absences should be directed to the instructor and laboratory manager for the course. Teaching assistants will not respond to any grading-related inquiries.

Absences, Extensions and Make-ups

Please read this section carefully, and if you have any questions about these policies, do not hesitate to reach out to the instructor (rbarakat@usc.edu) and the laboratory directory (moore@usc.edu).

There are absolutely no extensions, make-up exams or make-up lab assignments in this course, except in the case of certain extenuating (and documented) circumstances.

- If you miss one exam in the course for a valid (documented) reason, your exam grade will be an average of your other three exam scores. Otherwise, you will receive a “0” for the missed exam.
- If you miss the final exam in the course, you will receive an Incomplete (I) grade for the course.
- If you miss two or more exams for valid (documented) reasons, you will receive an Incomplete (I) grade for the course.

As we will be conducting the course in-person, it is important that you follow the guidelines below as it relates to your physical health and well-being. Despite the lack of restrictive public health policies and requirements in-place, COVID-19 and other infectious diseases are still prevalent in the community, so in order to protect yourself and your classmates, please make sure to do the following:

- **If you feel sick, notify the lab director and teaching assistant via email *immediately* and *do not attend the lecture or laboratory sections in-person.***
- Explain your *valid reason* for being absent (physical/ mental health-related or family emergency).

Provide information about how you intend to *stay on top of the information* presented in the section(s) you missed (i.e. scheduling a visit for office hours with the instructor, lab director and/ or teaching assistant).

Technology

A computer with stable internet access, a functioning microphone, a webcam, and the latest version of [Zoom](#) installed are strongly recommended for participation in this course. Please take the necessary steps before each class to ensure that all these technological requirements are met. If you have any questions, comments or concerns regarding these technological requirements, please contact the course instructor, lab director and if necessary, [Information Technology Services](#) (ITS, consult@usc.edu) as soon as possible so that we can help to accommodate your needs.

Diversity, Equity and Inclusion

The BISC-104 faculty and teaching assistants take issues regarding diversity, equity and inclusion very seriously when it comes to curricula, student engagement and beyond. As a result, we expect you to be kind, courteous, patient and open-minded at all times during your participation in this course, and to be empathetic towards your peers and instructors, as their lived experiences and beliefs may differ from yours but are equally important and valid. If you or a colleague in the course is concerned about any harassment, discrimination or any other troubling behavior, please notify the course instructor and/or lab director immediately. In addition, the [Student Health Center](#), the [Ombuds Office](#) and [Title IX Office](#) are all resources available to you to address issues related to harassment and discrimination of any kind.

Special Accommodations

If you require any special accommodations (including, but not limited to: closed captions during discussion sections via Zoom/ Google Slides, additional time to complete written exercises and quizzes, alternative assignments due to a physical or mental/ psychological condition, etc.), please let the course instructor and lab manager know so we can do our best to accommodate your needs. In addition, please ensure that you are registered with the [Office of Student Accessibility Services \(OSAS\)](#) so that your accommodations are met in a timely manner.

Academic Integrity

There is a [zero-tolerance policy](#) for any cheating or plagiarism of any kind in this course. Those who are caught engaging in this breach of academic conduct will automatically receive a zero grade for the assignment in question, and potentially other consequences as dictated by [USC Code of Ethics](#).

Lecture Calendar (*this calendar is subject to change*)

Week	Lecture	Date	Topic(s)	Optional (Textbook) Reading
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1	1	Monday, 8/21	Course Overview and History of the Field	
	2	Wednesday, 8/23	Organization of the Human Body	Chapters 1 - 2
	3	Friday, 8/25	A (brief) Chemistry Review	Chapter 3
2	4	Monday, 8/28	Macromolecules	
	5	Wednesday, 8/30	Cell Structure and Function	Chapter 4
	6	Friday, 9/1	Chemical Signaling Messengers	
3		Monday, 9/4	Labor Day (No Lecture)	
	7	Wednesday, 9/6	Body Tissues	Chapter 5
	8	Friday, 9/8	Bones and Joints	Chapter 6
4	9	Monday, 9/11	Musculoskeletal System	
		Wednesday, 9/13	Lecture Exam 1 Review	
		Friday, 9/15	Lecture Exam 1 (Lectures 2 - 9, Chapters 1 - 6)	
5	10	Monday, 9/18	Muscle Contraction	Chapter 6
	11	Wednesday, 9/20	The Action Potential	Chapter 7
	12	Friday, 9/22	Synaptic Transmission	
6	13	Monday, 9/25	Organization of the Nervous System	Chapter 7
	14	Wednesday, 9/27	Your Brain on Drugs	
	15	Friday, 9/29	The Special Senses	Chapter 8
7	16	Monday, 10/2	The Chemical Senses	
	17	Wednesday, 10/4	The Visual System	
	18	Friday, 10/6		
8		Monday, 10/9	Lecture Exam 2 Review	

		Wednesday, 10/11	Lecture Exam 2 (Lectures 10 - 18, Chapters 6 - 8)	
		Friday, 10/13	USC Fall Recess (No Lecture)	
9	19	Monday, 10/16	The Immune System	Chapters 9 - 10
	20	Wednesday, 10/18	The Cardiovascular System	Chapter 12
	21	Friday, 10/20		
10	22	Monday, 10/23		
	23	Wednesday, 10/25	The Respiratory System	Chapter 13
	24	Friday, 10/27		
25	Monday, 10/30			
11	26	Wednesday, 11/1	The Digestive System and Nutrition	Chapters 14 - 15
		Friday, 11/3	Lecture Exam 3 Review	
	12		Monday, 11/6	Lecture Exam 3 (Lectures 19 - 26, Chapters 9 - 15)
27		Wednesday, 11/8	The Renal System	Chapter 16
		Friday, 11/10	Veterans Day (No Lecture)	
13	28	Monday, 11/13	The Endocrine System	Chapter 17
	29	Wednesday, 11/15		
	30	Friday, 11/17	The (Male) Reproductive System	Chapter 18
14	31	Monday, 11/20	Pre-recorded Lecture: The (Female) Reproductive System	
		Wednesday, 11/22	Thanksgiving Holiday (No Lecture)	
		Friday, 11/24		
15	32	Monday, 11/27	Fertilization and Pregnancy	Chapter 19
	33	Wednesday, 11/29	Genetics and Biotechnology	Chapter 20

		<i>Friday, 12/1</i>	Lecture Exam 4 Review	
16		<i>Wednesday, 12/13</i>	Lecture Exam 4 (Chapters 16-20)	