



MEDS 320: Human Cadaveric Anatomy

Units: 4

Spring 2024 — Tuesdays & Thursdays — 1:30 - 3:20 pm

Location:

Lectures will be held on Tuesdays and laboratories will be held on Thursdays. The first lecture will be in-person at the Keck School of Medicine (USC Health Sciences Campus) in McKibbin Hall Addition (MCA) room 149. All subsequent lectures will be virtual with links to be posted on Blackboard.

Laboratory sessions will be held in-person in the Gross Anatomy Lab at the Keck School of Medicine, in Bishop Medical Teaching and Research [BMT] building basement room B53. Labs are required. Due to the nature of dissections, no make-up lab time will be provided. Exceptions for late arrival or early dismissal cannot be granted. Email mhcs@usc.edu with any questions.

Office hours: Office hours will be held in-person on Thursdays, 12:20 – 1:20 pm in BMT 403.

Email: Emails will be answered within 48 hours on weekdays. Emails are not checked on weekends.

Instructor: Dr. Zana Sims

Office: BMT 403, Keck School of Medicine Health Sciences Campus

Contact Info: zsims@usc.edu

Instructor: Dr. Steven Heritage

Office: BMT 305D, Keck School of Medicine Health Sciences Campus

Contact Info: steven.heritage@usc.edu

Instructor: Dr. Wren Edwards (she/her)

Office: BMT 403, Keck School of Medicine Health Sciences Campus

Contact Info: wren.edwards@usc.edu

IT Help: The usual UPC IT assistance is available to you; there will be no extra IT requirements for this class. The Anatomy Laboratory has monitors which will allow you to access class resources while working there.

Special Considerations: We have the privilege and responsibilities associated with working in the Gross Anatomy Lab with donor bodies from the Willed Body Program at the Keck School of Medicine. Your enrollment in this course includes your agreement to abide by all guidelines for this activity, which will be explained during our first session. ***Any infraction of these guidelines will result in disciplinary action.***

Course Description

Human Gross Anatomy is foundational to comprehensive health care training. This course will provide pre-med level instruction on the human body using a regions-based approach (Thorax, Abdomen, Pelvis, and Perineum; Back, Shoulder, and Limbs; Head and Neck). Through a combination of lectures and donor-based cadaveric demonstrations in the anatomy lab at the Keck School of Medicine, students will learn to identify and describe anatomical structures and their functions. Relevant clinical examples will be used to develop a higher-order understanding of the complex interactions permitted or inhibited during normal system function, disorder, or failure.

Learning Objectives

Students who successfully complete this course should be able to demonstrate the following skills:

1. Appropriate use and understanding of anatomical terminology.
2. An understanding of the adult skeletal system and its relationship to the soft tissue structures found in each region.
3. Identification and description of anatomical structures throughout the body using both absolute locations and relative spatial relationships.
4. Knowledge of the basic function of the anatomy covered in each region including clinical associations.

Prerequisite(s): BISC 220 or BISC 221

Co-Requisite(s): none required.

Concurrent Enrollment: none required.

Recommended Preparation: Students will be utilizing human remains in a medical school environment. Appropriate attire and conduct are expected, as described below.

Course Notes

This course consists of lecture topics that will cover the anatomy of the major regions of the body and will emphasize key features of clinical interest. Anatomic terminology, principles and function will be presented along with specific structures in each body region over multiple pre-recorded lectures. Links to these lectures will be posted to Blackboard at 1:30 pm on Tuesday and will be taken down at 1:20 pm on Thursday each week. Instructors will be available on zoom 2:50 – 3:20 pm (last 30 min of class) on Tuesdays to answer questions about the lecture. The structures, relationships, and clinical applications of each week's lecture will be visualized and demonstrated on donor bodies in the laboratory sessions which will be taught in the Gross Anatomy laboratory on the HSC campus.

Technological Proficiency and Hardware/Software Required

Because this is a hybrid course, students will need to have access to a computer with reliable internet access. Please note that the [USC Computing Center Laptop Loaner Program](#) is available to all USC students.

Additional technological support may be found at the following links:

- [Zoom information for students](#)
- [Blackboard help for students](#)
- [Software available to USC Campus](#)

Required Readings and Supplementary Materials

There are no required readings for this course.

Optional Readings and Supplementary Materials

Students may find their learning enhanced by the additional resources provided below. We recommend the use of an atlas of anatomy, which contains labeled anatomical drawings or photographs.

Recommended texts (one of the following):

- **Gray's Anatomy for Students** (2024). Drake RL, Richard L, Vogl W, Mitchell AWM. Fifth Edition. Elsevier. [Available online at USC Library](#)
- **Clinically Oriented Anatomy** (2018). Moore KL, Agur AMR, Dalley AF. Eighth edition. Wolters Kluwer. [Available online at USC Library](#)

Recommended atlases (one of the following):

- **Photographic atlas of anatomy** (2022). Rohen, Johannes W.; Yokochi, Chihiro.; Lütjen-Drecoll, Elke. Ninth Edition. Wolters Kluwer. [Available online at USC Library](#)
- **Netter's Atlas of Human Anatomy** (2023). Netter FH, Machado CAG, Neumann PE, et al. Eighth edition. (Neumann PE, Tubbs RS, Brueckner JK, et al., eds.). Elsevier. [Available online at USC Library](#). *Note: this can also be purchased as an app for iOS. Make sure that if you buy the app, that it is the interactive version.*

Description and Assessment of Assignments

Anatomy is best learned in an interactive, experiential environment. All students are expected to attend lectures and laboratory sessions. Active discussion of clinical cases and the anatomy on which they are based is a required part of the course. Grades will be based on the following:

- **Quizzes (25%):** There will be 11 graded quizzes (5 questions each), administered at the beginning of the laboratory session on selected Thursdays. These quizzes are non-cumulative and designed to assess students' understanding of key concepts from that week's lecture. The lowest quiz grade will be dropped.
- **Three exams (25% each):** Each exam will have two parts including the identification of pinned structures on donor bodies in the lab (practical exam) and written questions addressing theory based on lectures and reading.

Grading Breakdown

Assessment Tool	% of Grade
Quizzes (highest 10 of 11)	25
Exam 1	25
Exam 2	25
Exam 3	25
TOTAL	100

Grading Scale

Course final grades will be determined using the following scale:

Letter grade	Corresponding numerical point range	Letter grade	Corresponding numerical point range
A	95-100	C	73-76
A-	90-94	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 and below
C	73-76		

Assignment Submission Policy

There are no specific assignments; however, students are expected to actively participate in discussions and be prepared for laboratory sessions.

Grading Timeline

Exams and quizzes will be graded and posted to Blackboard within 1 week of administration. If students wish to review their exam, they must make an appointment with an instructor after grades are posted.

Course Specific Policies

Students needing accommodations must submit appropriate requests at the beginning of the course. Powerpoints will be posted on Blackboard for lectures, but by themselves will not be adequate for learning since additional material will be discussed. If you must miss lecture or lab, please notify course instructors as early as possible. You are responsible for obtaining written notes and listening to the lecture recording. All students are required to watch posted pre-recorded lectures prior to attending laboratory sessions.

Attendance

Lab attendance is mandatory. Students who give advance notice (in writing) of religious observation or holidays may be exempted from lab attendance, and a make-up quiz will be provided.

Gross Anatomy Laboratory Rules

Anatomical Gift Program

All bodies in the anatomy courses at USC are donated through the University's Anatomical Gift Program administered by the Department of Integrative Anatomical Sciences. Concerned citizens living within 150 miles of Los Angeles donate their remains to USC by enrolling in the program prior to their death. Thus, it is out of respect for this ultimate gift that we refer to the bodies as donors, not cadavers. The university does not make use of unclaimed bodies or purchase bodies from other sources. All donors are transported immediately after death to the USC morgue. The bodies are tested for infectious diseases (HIV, hepatitis, COVID-19, etc.), embalmed, and then stored in crypts adjacent to the dissection laboratory for 3 to 6 months. At the end of the course, all bodies are individually cremated, and the ashes are returned to the family when requested by the donor or the donor's family, or the remains are interred in a local cemetery. Consequently, all dissected body parts for an individual are kept together for final cremation.

Respect and Care Toward Donors

People who will their bodies for study are concerned about the welfare of humankind, with donation of their body after death being their final contribution. The nature and depth of their generosity is a gift that is impossible to repay. You can only guarantee privacy, respect, and as much care as possible during your time in the lab. Knowledge that you do so is a great comfort to the relatives of the deceased, as well as to future donors. By enrolling in this course, you agree to share these responsibilities. Your respectful and professional demeanor toward those who have generously given their remains for your education is deeply appreciated.

Anatomy Lab Code of Conduct

- **Human remains.** There is a strict policy against removing anatomical materials of any kind from the laboratory. This includes human tissues, skeletons, radiographs, and others human materials found in the lab. Removal of human tissues or dissected parts from the laboratory is considered a FELONY.
- **No visitors.** KSOM faculty and students not affiliated with the anatomy course are not permitted in the lab without approval. No other visitors are permitted in the lab at any time.
- **No photography or videography.** There is a strict policy prohibiting photography or video recording of any kind in the laboratory. This includes the use of mobile and smart phone cameras. We are obliged to preserve anonymity and respect for those who have donated their bodies to medical science. If there is a need to take a photograph (this includes taking photos of notes made on dry-erase boards) students must

first consult with a faculty member. Students will be asked to leave the lab if seen taking photos without permission. Violating the strict no photography rule will result in immediate disciplinary action.

- **No eating, drinking, smoking, or vaping in the laboratory.** These actions are unsafe, disrespectful to the donors, and strictly forbidden.
- **Surveillance.** Lab security includes surveillance cameras that have been installed in the gross anatomy lab. These cameras operate 24/7.

Anatomy Lab Safety

Because formaldehyde and phenol are included at low levels in our embalming fluid and are considered hazardous chemicals, students need to adhere to the following safety guidelines mandated by CAL-OSHA and the Environmental, Health and Safety Office of USC. Students will be asked to leave the lab if they do not conform to these guidelines.

- **Protective clothing.** All students are required to wear closed-toe shoes and long pants. Students may choose to wear scrubs in lab.
- **Protective eyewear.** Protective eyewear is strongly suggested in the lab.
- **Masks.** Because of the ongoing possibility of COVID-19 transmission between students and faculty working in close proximity, masking is still mandatory.
- **First-Aid.** *First-aid kits* are attached to the privacy wall near the main entrance on the side opposite the bulletin board, and near the sinks at the rear of the anatomy lab. If you are cut or injured, please inform an instructor immediately and they will help you.
- **Safety showers.** In the case of chemical accident, safety showers are located in two places in the lab: one to the left and one to the right of the main entry.

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Course Schedule

Week	Date	Topics	Quiz	Instructor
Week 1	9-Jan	Introduction/ Anatomy concepts/ Thorax osteology		Z. Sims, S. Heritage & W. Edwards
	11-Jan	Lab: Introduction/ Osteological overview		Z. Sims
Week 2	16-Jan	Thorax/ Lungs/ Heart		S. Heritage
	18-Jan	Lab: Thorax/ Lungs/ Heart	Q1	S. Heritage
Week 3	23-Jan	Abdomen/Viscera		W. Edwards
	25-Jan	Lab: Abdomen/ viscera	Q2	W. Edwards
Week 4	30-Jan	Pelvis/ Perineum		Z. Sims
	1-Feb	Lab: Pelvis/ Perineum	Q3	Z. Sims
Week 5	6-Feb	<i>EXAM REVIEW</i>		<i>All</i>
	8-Feb	<i>EXAM 1: Thorax/ Abdomen/ Pelvis/ Perineum</i>		<i>All</i>
Week 6	13-Feb	Intro muscles/ Joints/ Back/ PNS		Z. Sims
	15-Feb	Lab: Joints and Back	Q4	Z. Sims
Week 7	20-Feb	Lower limb		S. Heritage
	22-Feb	Lab: Lower limb	Q5	S. Heritage
Week 8	27-Feb	Shoulder/ Arm/ Brachial plexus		W. Edwards
	29-Feb	Lab: Shoulder/ Arm/ Brachial plexus	Q6	W. Edwards

Week	Date	Topics	Quiz	Instructor
Week 9	5-Mar	Forearm/Hand		W. Edwards
	7-Mar	Lab: Forearm/Hand	Q7	W. Edwards
	12-Mar	<i>NO CLASS [Spring Break]</i>		
	14-Mar	<i>NO CLASS [Spring Break]</i>		
Week 10	19-Mar	<i>EXAM REVIEW</i>		<i>All</i>
	21-Mar	<i>EXAM 2: Axial/ Limbs</i>		<i>All</i>
Week 11	26-Mar	Intro: Skull/Brain/Cranial nerves		Z. Sims
	28-Mar	Lab: Skull and Brain	Q8	Z. Sims
Week 12	2-Apr	Neck		S. Heritage
	4-Apr	Lab: Neck	Q9	S. Heritage
Week 13	9-Apr	Eye and orbit		S. Heritage
	11-Apr	Lab: Eye and orbit	Q10	S. Heritage
Week 14	16-Apr	Face and Muscles of Facial Expression		W. Edwards
	18-Apr	Lab: Face and Muscles of Facial Expression	Q11	W. Edwards
Week 15	23-Apr	Oral cavity and mastication		Z. Sims
	25-Apr	Lab: Oral cavity and Mastication		Z. Sims
STUDY DAYS	30-Apr	NO CLASS: Open Lab Hours		All
FINAL EXAM WEEK	2-May 2-4pm	<i>FINAL EXAM: Head/Neck</i>		<i>All</i>

Statement on Academic Conduct and Support Systems

Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, compromises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining

custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.