

Anatomical Principles of Surgery (ANAT 510) Syllabus, Summer 2024

Mondays, generally 9:00 am - 1:00 pm (lecture + lab; see schedule for exceptions)
Surgical Training and Research (STAR) Lab (Wks. 1-7) and Robbins E301 (Week 8 only)

Course Director

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Other Faculty

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Course description

In this team-taught course, students learn how anatomic relationships and considerations affect surgical decision making. It meets once per week during the eight-week summer session, with each week focusing on a different surgical specialty, including general, vascular, neurological, urological, orthopedic, and head and neck (otolaryngology). Students build on their pre-existing knowledge of human anatomy and learn through a combination of framing lectures and cadaveric surgical simulations directed by clinical surgical faculty. It is a 3-credit course.

Class Format

Classes will take place in the [Surgical Training and Research \(STAR\) Lab](#), a core facility located in the Animal Resource Center in the basement of the Biomedical Research Building. Special key card access is required to enter (and exit!) the STAR facility, and this will be requested for all students registered for the course. The STAR lab will supply surgical gowns and other PPE in addition to scalpels and other surgical tools. You must wear scrubs and suitable shoes to lab (additional details below).

On the first day of class, you should meet Dr. Croft at the BRB guard desk at 8:30 am. From there, we will go to the STAR lab and briefly review the syllabus. This will be followed by a 3-hour lab activity facilitated by General Surgery residents that will cover sterility and aseptic technique, suturing, and knot-tying, all skills essential for surgery that will be used in subsequent labs. After this lab session, the director of the STAR lab (Dr. Steve Schomisch), will give an orientation to the facility. Class will conclude at 12:30 pm.

On "typical" class days (weeks 2-7), lectures will take place in the STAR lab conference room and generally last around an hour. This will be followed by a three-hour lab, during which students will work in groups of four on lightly embalmed cadavers to perform 2-3 common surgical procedures. Students should arrive to class in scrubs.

The final day of class will consist of final presentations and will take place in E301.

Prerequisites and intended student population

This course is intended for MS and MD students in the School of Medicine. Course director permission is required to enroll. In addition, a student must have experience with cadaveric human anatomy through one of the following courses:

- ANAT 401, Multimodal Human Anatomy
- ANAT 411, Gross Anatomy
- Block 7 Structure (WR2/MD curriculum)

Enrollment is limited to 16 students due to constraints of the STAR lab, and priority will be given to students who have taken ANAT 411.

Learning Resources

Pre-readings for each week will be available on Canvas. In addition, a digital version of the 9th Edition of *Moore's Clinically Oriented Anatomy* can be accessed via [this link](#) (CWRU single sign-in required).

Learning Objectives

Upon completing this course, students will be able to:

- Demonstrate basic surgical technical skills including maintaining sterility, suturing, knot tying, instrument handling, and tissue dissection
- Demonstrate the steps of each of the basic surgical procedures addressed in this course (detailed below)
- Explain at least two common pathological conditions commonly treated by each surgical procedure discussed in this course
- Describe the key anatomic structures, relationships, and principles that determine the specific design and execution of each surgical procedure in this course
- Compare and contrast the approaches and anatomical realms of the seven surgical specialties included in the course

Specific learning objectives for each lab will be listed on Canvas.

Course Schedule

Week	Date	Topic	Surgeon	Procedures
1	June 3 *8:30 am*	Essential Surgical Skills	Boutros, Hungate	• Sterility • Suturing and knot-tying • Surgical tools
2	June 10	Vascular Surgery	Hubbard	• Carotid endarterectomy • Common femoral and profunda endarterectomy
3	June 17 *8:00 am*	Urology	Shoag	• Radical cystectomy • Pelvic lymph node dissection • Ileal conduit
4	June 24	General Surgery	Donatelli-Seyler	• Open cholecystectomy • Anastomosis of colon versus creation of end colostomy • Open appendectomy
5	July 1	Otolaryngology	Shah	• Thyroidectomy • Submandibular gland excision
-	(July 8)	(no class)	-	-
6	July 15	Neurosurgery	Tomei	• Pterional craniotomy and anterior skull base exposure • Suboccipital craniotomy and 4 th ventricle access
7	July 22	Orthopedic Surgery	Beucler	• Carpal tunnel release • Trigger thumb procedure
8	July 29	Final Presentations	n/a	*Class in E301*

Attendance, Assessment, and Grading

Since this is a lab-based course that only meets eight times during the summer, attendance is mandatory. Each class missed will result in a student's final grade dropping by one letter grade over what would have been earned otherwise (e.g., from an A to a B or from a B to a C). If you cannot attend all eight sessions, you should not enroll in the course. Missing a class will only be excused in the case of a medical emergency (which must be verified by documentation from a physician) or death of an immediate family member.

Grades will generally be assigned as follows: A= 90-100%; B= 80-89%; C= 70-79%; D= 60-69%; F= 59% and below. The passing score for a medical student is 80%. The final grade will be calculated based on the following components:

- Weekly quizzes (50% of final grade):
 - During weeks 2-7 of the course, you will take a quiz covering the week's lecture material and lab procedures.
 - Each quiz will be open Wednesday from 7 am to 7 pm. If you know you will not be available to take the quiz during that interval, contact Dr. Croft to arrange taking it early. If you miss the quiz, you may take it late, but 2 points will be deducted from your score.
 - Quizzes will be administered via Canvas and use Respondus Lockdown Browser. Before the course begins, you should visit [U]Tech's [Respondus LockDown Browser page](#) and download the Getting Started for Students Guide. If you have trouble installing the software, contact [U]Tech.
- Anatomy Review Presentation and Lab Feedback (20% of final grade):
 - You will be assigned to one of the weekly modules and will produce a 25- to 30-minute presentation (or a series of shorter presentations) that review(s) the relevant anatomy for that week. You will work with 1 or 2 other student(s). Creativity is encouraged!
 - Your presentation(s) must be submitted via Canvas by 5 pm on the Friday before the corresponding class. For example, the presentation reviewing the anatomy for the vascular surgery lab on June 10th must be uploaded by 5 pm on June 7th. Scores for late submissions will be reduced by 10% if submitted Friday night after 5 pm, 20% if submitted on Saturday, and 30% if submitted on Sunday.
 - If you upload more than one file for this group assignment, let Dr. Croft know so that he knows to look for more than one submission file.
 - Your presentation will be graded following a rubric available on Canvas.
 - After the corresponding lab, your group must submit feedback on the pre-readings, preparatory lecture, and the lab itself. This will be due the next day (Tues.) at 5 pm. Note what you liked and what you think could be improved as well as any ideas you have.
- Final Presentation (20% of final grade):
 - You will be assigned a surgical specialty for the final presentation that is different from your review presentation surgical specialty.
 - Your presentation should be ~10 minutes and cover a common surgical procedure in that area (excluding ones done in lab). It should include the key anatomical landmarks, relationships, and principles that are important for its successful execution, and creativity is encouraged.
 - Clinical faculty can serve as mentors for these presentations. Therefore, you should reach out to the corresponding faculty member before or during lab to get their thoughts and perspective. Note that some faculty may not respond quickly to emails.
 - You must include at least five literature citations (i.e., journals or reference resources, like the pre-readings) and not simply rely on websites or videos
 - Presentations will take place during the final class, and you will be required to submit feedback on a three peer presentations. This will be due at 10 pm on the final day of

class, and the quality of feedback will factor into your score. Guidance on providing feedback will be available on Canvas.

- Professionalism (10% of final grade) will be based on:
 - Teamwork and collaboration, as evaluated by the course director and reflected in any peer feedback.
 - Punctuality and contributions to lab activities (e.g., cadaver transport, dissection, maintaining a clean lab table and equipment, etc.)

Lab Supplies

You must obtain scrubs from E430 before the first lab. Soiled scrubs must be returned to the same room. All other lab supplies and PPE will be provided in the STAR lab.

Lab Specimens

This course uses lightly embalmed cadavers that will be stored in the cold room at the far end of the hall opposite the large ground floor anatomy lab (EG 24). These cadavers will need to be moved to the STAR lab during weeks 2-7. Students will be divided into two cadaver transport teams (A Team and B Team). On the days your team is designated to move cadavers, you must be at the cooler by 8:45 am (7:45 am on June 17th) to help with this task. Your team will also be responsible for returning the cadavers to the cooler at the end of lab.

Lab Safety

Please be very careful with scalpels, needles, and all other sharp tools to avoid injury. Do not try to balance them on the cadaver or leave them in a place where they might accidentally injure someone. Best practice is to store them in an emesis basin when they are not in use. Sharp instruments must be disposed of in the sharps container.

If you are injured in lab, you should report the injury to Dr. Croft, who can help with basic first aid. You should also report the injury to [Heath Services](#) (216-368-2450).

If you feel lightheaded or queasy at any time during lab, you should immediately find a place to sit down; you do not want to risk fainting and injuring yourself in a fall.

Lockers

You will be assigned a hallway locker on the fourth floor of Robbins where you can store street clothes and other items during lab. If you took ANAT 411 in the spring, you will be assigned the same locker. Items such as backpacks and computers can be left in the STAR conference room during lab.

Diversity and Inclusion

It is the intent that all students regardless of their background and perspective be well-served by this class. Further, we intend to present material whose content is respectful of diversity (gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture) and deliver it in a way that respects these differences as well. We expect that all students, instructors, and guests will help foster an atmosphere of respect, trust and safety in the classroom.

Students should reach out to the instructor with any suggestions for how to make the class content or environment more inclusive or to report a specific incident. If a student is not comfortable reaching out to the instructor, other options include the School of Medicine Graduate Education Office (som-geo@case.edu) and the Office of Inclusion, Diversity and Equal Opportunity (OIDEO) (oideo@case.edu).

More information about CWRU's policies and resources is available on [OIDEO's website](#).

Disability Accommodations

In accordance with federal law, if a student has a documented disability, they may be eligible to request accommodations from Disability Resources. In order to be considered for accommodations, a student must first register with the Disability Resources office by calling

216.368.5230 or getting more information [here](#) on how to begin the process. Accommodations are not retroactive.

Mental Health Resources

CWRU is committed to supporting and advancing the mental health and well-being of our students. During the course of your academic career, you may experience personal challenges that represent barriers in learning. While some stress is to be expected in the higher education experience, it can be compounded by unexpected setbacks or life changes outside the classroom. You should contact an instructor about any issue that could affect your education and contact support services on campus that have staff stand ready to assist you:

[University Health & Counseling Services](#) (UH&CS)

Counseling Services and 24/7 on-call counselor 216/368-5872

[Health Services](#) and 24/7 Nurse on-call 216/368-2450

Dean of Students Office; 216/368-1527; <https://case.edu/studentlife/dean/>

CWRU Dispatch

216/368-3333 emergencies

216/368-3300 non-emergency

Academic Integrity

The university's research, scholarship, teaching, and community service are central to its mission. To achieve that mission, it is critical that the highest standards of academic integrity are articulated to all members of the university community: faculty, students, and staff. All members of the community are expected to interact professionally in those endeavors that promote and facilitate the university's common mission. Adherence to professional codes of ethical conduct can and do play a central role in the matter.

Students, faculty and administrators share responsibility for determining and preserving standards of academic integrity. Each must adhere to their own personal code of integrity and must be prepared to educate others about the importance of academic integrity, to take reasonable precaution to discourage violations of academic integrity, and to adjudicate violations.

For students, education about the importance of academic integrity begins during the admissions process. The centrality of integrity to the academic enterprise is reinforced during new student orientation when students engage in discussion about academic integrity. Specific mention of academic integrity and course-specific guidelines also may be presented in all classes. Programs and instruction about academic integrity guidelines are available throughout students' graduate school career.

Students are expected to uphold standards of academic integrity by taking reasonable precaution in the academic arena. Reasonable precaution involves implementing measures that reduce the opportunities for academic misconduct but do not inhibit inquiry, create disruption or distraction in the testing environment, or create an atmosphere of mistrust.

The vitality of academic integrity is dependent upon the willingness of community members to confront instances of suspected wrongdoing. Faculties have specific responsibility to address suspected or reported violations as indicated below. All other members of the academic community are expected to report directly and confidentially their suspicion of violation to a faculty member or a dean or to approach suspected violators and to remind them of their obligation to uphold standards of academic integrity. To the extent possible, the identity of individuals reporting academic misconduct will be kept confidential.

Download the full text of the [Academic Integrity Standards and Policies](#).

To report academic misconduct, submit an [Academic Integrity Violation Report](#) and supporting evidence to the Senior Associate Dean, [Lynmarie Hamel](#).