

Anatomical Principles of Surgery (ANAT 510)
Syllabus, Summer 2022

Mondays, 1:00-2:00 pm (lecture), 2:00-5:00 pm (lab)
Surgical Training and Research (STAR) Lab, E301 (last day)

Course Directors

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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 plastic, 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. The lab will supply surgical gowns and other PPE in addition to scalpels and other surgical tools. Students must wear scrubs and suitable shoes to lab (additional details provided below).

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.

On the first day of class, students should meet Dr. Croft [at the BRB guard desk](#). Special permission is required to enter the STAR facility, and such access will be requested for students after they participate in a brief orientation to the facility conducted by its director (Dr. Steven Schomisch) on the first day.

Prerequisites and intended student population

This course is primarily intended for MS students in the School of Medicine, particularly those in the MS in Applied Anatomy program. 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)

Learning Resources

Pre-readings for each week will be available on Canvas. In addition, a digital version of the 8th 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 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 6	Plastic Surgery	Davidson	• Innervated gracilis muscle for facial reanimation with cross facial nerve grafting and master motor nerve input
2	June 13	Otolaryngology	Shah	• Parotidectomy • Thyroidectomy • Submandibular gland excision
3	June 20	Vascular Surgery	Harth	• Carotid endarterectomy • Common femoral and profunda endarterectomy
4	June 27	Neurosurgery	Tomei	• Pterional craniotomy and anterior skull base exposure • Suboccipital craniotomy and 4 th ventricle access
-	(July 4)	(no class)	-	-
5	July 11	General Surgery	Donatelli-Seyler	• Open cholecystectomy • Anastomosis of colon versus creation of end colostomy • Open appendectomy
6	July 18	Orthopedic Surgery	Hardesty	• Distal radius fracture (Henry's approach) • Total hip arthroplasty
7	July 25	Urology	Woo	• Pyeloplasty or ureteroureterostomy • Radical nephrectomy +/- lymph node dissection or Partial nephrectomy • Radical cystectomy • Radical orchiectomy • Scrotal exploration/simple orchiectomy
8	Aug. 1	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 final grade will be calculated based on the following components:

- Weekly quizzes (50% of final grade): During each of the first seven weeks of the course, students will take a quiz covering the week's lecture material and lab procedures. Each quiz will be open Thursday from 7 am to 10 pm. A quiz cannot be taken late, but it can be taken early if necessary. 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 (20% of final grade): Students 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 reviews the relevant anatomy for the upcoming week. Creativity is encouraged, and the 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 general surgery class on June 13th must be uploaded by 5 pm on June 10th. 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 by Sunday
- Final Presentation (20% of final grade): Each student, mentored by one of the faculty instructors, will identify an anatomic landmark, relationship, or principle and create a presentation that illustrates its implications for surgery. As with the review presentation, creativity is encouraged. Presentations will take place during the final class, and students will be required to submit feedback on a subset of the presentations of their peers (via Canvas). Each student will be assigned a final presentation surgical specialty that is different from the one for which they created a review presentation.
- Professionalism (10% of final grade): Student teamwork and collaboration during class and while working on class activities will be evaluated by faculty and peers and contribute 10% to the final grade. Contributions to lab activities (e.g., moving cadavers to and from the STAR lab, maintaining a clean lab table and equipment, etc.) will also factor into a student's professionalism grade, as will feedback on final presentations.

Lab Supplies

All students must obtain scrubs prior to the first lab. Students registered for the course will be able to obtain them free of charge in E430. Soiled scrubs must be returned to the same room. All other lab supplies 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 for each lab day. 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 12:45 pm to help with this task. Your team will also be responsible for returning the cadavers to the cooler at the end of the day.

Lockers

You will be assigned a hallway locker on the third floor of Robbins for storing items during lab. If you took ANAT 411 in the spring, you will be assigned the same locker.

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

Any violation of the University's Code of Ethics will not be tolerated. All forms of academic dishonesty including cheating, plagiarism, misrepresentation, and obstruction are violations of academic integrity standards and will result in a minimum penalty of receiving a zero for the assignment, the potential for failing the entire course. Cheating includes copying from another's work, falsifying problem solutions or laboratory reports, or using unauthorized sources, notes or computer programs. Plagiarism includes the presentation, without proper

attribution, of another's words or ideas from printed or electronic sources. It is also plagiarism to submit, without the instructor's consent, an assignment in one class previously submitted in another. Misrepresentation includes forgery of official academic documents, the presentation of altered or falsified documents or testimony to a university office or official, taking an exam for another student, or lying about personal circumstances to postpone tests or assignments. Obstruction occurs when a student engages in unreasonable conduct that interferes with another's ability to conduct scholarly activity. Destroying a student's computer file, stealing a student's notebook, and stealing a book on reserve in the library are examples of obstruction.

In addition, the incident will be reported to the Dean of Undergraduate Studies and Academic Review Board for undergraduates or Senior Associate Dean of Graduate Studies, for Graduate Students. The CWRU Statement of Ethics for graduate students can be found here: <http://case.edu/gradstudies/about-the-school/policies-procedures/>