ANATOMY 411: Gross Anatomy
Spring 2021
Lecture: Recorded and asynchronous (on Canvas)
Lab: M/W/F 1:00-4:00 pm, EG20 and 24

Instructors

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Course Schedule:

DATE	LECTURE TOPIC	LAB	FACULTY
	THORAX	Ch. 3 (and 2), Grant's Dissector	
Feb. 1	Introduction, nervous system overview	(none)	Croft
Feb. 3	Anterior thoracic wall	• Introduction • Pectoral region (Ch. 2) • Muscles of the pectoral region (Ch. 2)	Flannery
Feb. 5	Pleural cavity and lungs ***Nervous system quiz***	• Intercostal space & intercostal muscles; • Removal of the anterior thoracic wall; the pleural cavities • Lungs	Croft
Feb. 8	Heart and mediastinum	• Mediastinum • External features of the heart • Internal features of the heart	Croft
Feb. 10	Posterior & superior mediastinum	• Superior mediastinum • Posterior mediastinum	Flannery
Feb. 12	Review	***Practice practical exam***	Croft
Feb. 15	**Thorax Lecture Exam**	**Thorax Practical Exam**	Croft
	ABDOMEN	Ch. 4, Grant's Dissector	
Feb. 17	Inguinal region, spermatic cord, testis	• Superficial fascia & muscles of the anterior abdominal wall • Refection of abdominal wall	Singelyn
Feb. 19	Upper abdomen	• Peritoneum & peritoneal cavity • Celiac trunk, stomach, spleen, liver, & gallbladder	Singelyn
Feb. 22	Lower abdomen	• Superior mesenteric artery & small intestine • Inferior mesenteric artery & large intestine • Duodenum, pancreas, & hepatic portal vein	Singelyn

DATE	LECTURE TOPIC	LAB	FACULTY
Feb. 24	Kidneys & posterior abdominal wall	• Removal of the GI tract • Posterior abdominal viscera • Posterior abdominal wall • Diaphragm	Singelyn
Feb. 26	**Abdomen Lecture Exam**	**Abdomen Practical Exam**	Singelyn
	PELVIS AND PERINEUM	Ch. 5, Grant's Dissector	
March 1	Pelvic cavity, floor, gluteal region	• Anal triangle	Singelyn
March 3	Male/female perineum	• Male/female external genitalia & perineum • Male/female urogenital triangle	Singelyn
March 5	Male/female reproductive systems	• Male/female pelvic cavity • Urinary bladder, rectum, & anal canal • Internal iliac artery & sacral plexus • Pelvic diaphragm	Singelyn
March 8	Reproductive systems and review	(Complete dissections and review)	Singelyn
March 10	**Pelvis and Perineum Exam**	**Pelvis and Perineum Exam**	Singelyn
	UPPER LIMB AND BACK	Ch. 1-2, Grant's Dissector	
March 12	Bones & joints of pectoral girdle; glenohumeral joint; posterior axio-appendicular muscles; scapulohumeral muscles	• Introduction (Ch. 1) • Skin & superficial fascia (up to Vertebral Column) • Superficial muscles of the back	Wish-Baratz, Crofton
March 15	Spine; deep back	• Skin & superficial fascia (Vertebral Column onward) • Intermediate & deep back muscles • Suboccipital region • Vertebral canal, spinal cord & meninges	Enterline
March 17	Anterior axio-appendicular muscles; axilla; brachial plexus	• Axilla (Ch. 2)	
March 19	Brachium; cubital fossa; bones and joints of forearm, elbow, & wrist; arteries, veins, & nerves of upper limb	• Arm (brachium) & cubital fossa • Scapular region & posterior compartment of the arm	Wish-Baratz, Crofton
March 22	Anterior & posterior compartments of forearm; bones and joints of hand	• Flexor region of the forearm • Extensor region of the forearm & dorsum of the hand	Wish-Baratz, Crofton
March 24	(no class)	(no class)	-
March 26	Fascia of palm; intrinsic muscles of hand	• Palm of the hand	Wish-Baratz, Crofton
March 29	**Upper Limb Exam**	**Upper Limb Exam**	Wish-Baratz, Crofton
	LOWER LIMB	Ch. 6, Grant's Dissector	
March 31	Introduction, anterior & medial thigh	• Superficial veins & cutaneous nerves • Anterior compartment of the thigh • Medial compartment of the thigh	Simpson
April 2	Gluteal region, post. thigh, popliteal fossa	• Gluteal region • Posterior compartment of the thigh & popliteal region	Simpson
April 5	Hip, knee, & leg	• Posterior compartment of the leg • Lateral compartment of the leg • Sole of the foot	Simpson
April 7	Ankle, foot, & function	• Anterior compartment of the leg & dorsum of the foot • Joints of the lower limb	Simpson
April 9	**Lower Limb Exam**	**Lower Limb Exam**	Simpson

DATE	LECTURE TOPIC	LAB	FACULTY
	HEAD AND NECK	Ch. 7, Grant's Dissector	
April 12	Overview & skull	• Cranial osteology ***Remote (Zoom) Lab***	Croft
April 14	Cranial nerves	***Osteology Quiz* (no lab)**	Croft
April 16	Face, scalp, vasculature	• Face • Parotid region	Croft
April 19	Cranial cavity	• Scalp • Interior of the skull • Removal of the brain • Dural inholdings & dural venous sinuses • Cranial fossae	Flannery
April 21	Orbit and eye	• Orbit ***Group Practical***	Croft
April 23	Organization of the neck	• Introduction • Anterior triangle of the neck • Thyroid and parathyroid glans	Croft
April 26	Laryngeal region	• Root of the neck	Flannery
April 28	Ear	• Ear ***Group Practical***	Croft
April 30	Oral region	• Temporal region	Croft
May 3	Nasopharynx	• Disarticulation of the head • Pharynx ***Do one or the other, not both***	Flannery
May 5	Head autonomics	(complete previous dissections)	Croft
May 7	Review	(review) ***Group Practical***	Croft
May 10	**Head and Neck Exam**	**Head and Neck Exam**	Croft

Course Description

ANAT 411 is an in-depth, cadaver dissection-based course that covers all aspects of human gross anatomy. The course is modeled after a traditional medical school gross anatomy curriculum and is divided into six stand-alone sections: thorax, abdomen, pelvis and perineum, upper limb and back, lower limb, and head and neck. By the end of the course, students will have a detailed understanding of the gross anatomy of the entire human body.

Class Format

The typical class format is a one-hour framing lecture followed by a three-hour dissection lab, though this may vary from section to section to some extent. This is a team-taught course, and each professor has different teaching styles and preferences for resources.

Lectures generally review concepts important for understanding the anatomy that will be seen in the dissection lab the same day. Significant clinical correlations are also discussed. This year, due to the COVID-19 pandemic, lectures will be pre-recorded and posted to Canvas by 9 am on the day they are scheduled (some may be posted earlier). Students should plan to watch the lecture video(s) prior to coming to campus for lab in the afternoon. Lecture outlines and/or PowerPoint slides will be posted to Canvas.

Students are assigned to a specific table for dissection, and these assignments may change during the course of the semester. There are generally four students per lab group, though in some cases there may be three or five. Labs are relatively unstructured, and lab groups are allowed to work at their own pace to complete the day's dissections, using Grant's Dissector as a guide. Prior to each lab, the teaching assistants prepare a prosection so

students can visualize the structures that should be exposed and identified. During lab, teaching assistants and faculty rotate among lab groups to facilitate dissections and to help identify key structures. Due to the COVID-19 pandemic, we will be using specific procedures before, during and after lab to minimize the risk of transmission. Students must carefully read and abide by the guidelines described in the Lab Procedures 2021 document on Canvas.

Learning Resources:

Textbook: The recommended text is *Moore's Clinically Oriented Anatomy* (by Moore, Dalley, and Agur). A digital version of the 8th edition can be accessed on campus via this link. Off campus, it is necessary to use the CWRU VPN client for access; instructions for using VPN are available here. You can use a different textbook if you prefer. Any required reading materials will be available on Canvas.

Atlas: An atlas is highly recommended, but any atlas is suitable. Some students prefer Netter's Atlas of Human Anatomy, whereas others prefer the Thieme atlas or Grant's. There are also photographic atlases of human anatomy. You will likely want to have one at home you can use for studying. They are also very useful in lab, but you will not want to use your home version in the lab or vice versa. A limited number of used atlases will be available for use in lab. Students can consider sharing the cost of a lab atlas among the members of their dissection group.

Dissector: Dissections follow *Grant's Dissector* (by Detton and Tank). A digital version of the 16th Edition can be accessed on campus via this link. Some used copies of older editions will likely be available in lab. The most important structures to learn are generally those listed in Grant's Dissector in bold font.

Digital Resources: You will have access to two digital resources during this course: Complete Anatomy 2020 (from 3D4Medical) and the VH Dissector (from Touch of Life Technologies). Complete Anatomy is excellent for 3D visualization of anatomical structures, and VH Dissector is very useful to understanding positional relationships though axial, coronal, and sagittal sections.

Lab Supplies

You should obtain the following equipment before the first lab:

Gloves: Be sure to purchase nitrile (non-latex) gloves. Latex can cause an allergic reaction and does not hold up well against formaldehyde. Purchase whatever thickness you prefer. You will find that dissection is difficult if your gloves are too large, so be sure to purchase the correct size.

Scalpel blades: Size #10, one box per lab group will be plenty for the semester.

Shoes: Purchase an inexpensive pair that you can use exclusively in lab. You should get something that you will be comfortable standing in for several hours that has good traction and that does not have large holes (in case of spills).

Scrubs: These can be obtained free of charge with your student ID (or Cintas card, supplied by the Course Director) from the vending machines in E430. See the "Scrubs Information 2021" document on Canvas for details.

Goggles or other protective eyewear: This is required in 2021 to help prevent COVID-19 transmission, as detailed in the "Lab Procedures 2021" document on Canvas.

The Anatomy Department will supply face masks and surgical gowns, which are required in lab in 2021.

If you would like to use a respirator in lab, one can be purchased through CWRU.

Lockers

If you are not a CWRU medical student, you will be assigned a hallway locker outside lab or one on the third floor of Robbins to store your equipment. If you are assigned a ground floor locker, you must supply your own combination lock. Medical students should use their locker on the third floor of Robbins due to limited availability of ground floor lockers.

Assessment and Grading

Graduate and undergraduate students must take the course for a letter grade. Medical students may take the course pass/fail.

You will receive a separate score for each section of the course; there is no cumulative final exam at the end of the course. Each section of the course contributes to the final grade as follows: Thorax: 15%; Abdomen: 12.5%; Pelvis and perineum: 12.5%; Upper limb and back: 15%; Lower limb: 15%; Head and neck: 30%.

Each section will have a final lecture exam and a final lab exam that will contribute equally to a student's score for that section of the course. The format of the lecture exam will vary by section according to the preferences of the faculty member(s) teaching that section. Lab exams are practical exams in which students rotate among stations every 75 seconds; at each station, two tagged structures must be identified. Most of the stations are cadaver-based, but models, cross-sections, x-rays, CT scans, bones, and other learning resources may also be used. In some sections of the course, quizzes may contribute to a student's lecture and/or lab score. Additional details for each section of the course will be provided by the faculty member(s) in charge of that section. Extra credit is not offered.

Letter grades are generally assigned as follows: A, 90-100%; B, 80-89%; C, 70-79%; D, 60-69%, F, 59% and below. These are not absolute cutoffs, and they may be adjusted slightly depending on the overall performance of the class. Course trajectory is taken into account when final grades are assigned, meaning that a strong finish to the course will help a borderline performance in the course overall. The passing score for a medical student is 80%.

Course-specific policies

Attendance is not mandatory, but since quizzes and exams will be based on materials presented in lectures and labs, it is in your best interest to take advantage of the time afforded during class. If you will not be present for a lab, you should let your lab members know in advance (if possible) and arrange a time to contribute to the dissection in another way and/or review the material that was missed.

Quizzes and exams will be administered during a prescribed interval. In general, you may take a quiz in advance if necessary, but quizzes may not be taken late except in extraordinary circumstances (e.g., serious illness or death of an immediate family member). If you need to take a quiz in advance, contact the faculty member responsible for that particular section of the course (if different from the course director). Practical exams require a great deal of time to set up, so these must be taken on the day and time they are offered. In the event of an emergency, a modified version of the practical exam will be given.

Disability Accommodations

In accordance with federal law, if you have a documented disability, you may be eligible to request accommodations from Disability Resources. In order to be considered for accommodations you must first register with the Disability Resources office. Please contact

their office to register at 216-368-5230 or get more information on how to begin the process. Please keep in mind that accommodations are not retroactive.

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 Senior Associate Dean of Graduate Studies. The CWRU Statement of Ethics for graduate students can be found here.