Regional Human Anatomy—HBA 461/561/540

SUMMER 2019

COURSE INSTRUCTORS

Dr. Waymon Holloway: HSC Academic Tower A, T8-087b, waymon.holloway@stonybrook.edu
Dr. Nathan Kley (Course Director): HSC Academic Tower A, T8-069, (631) 444-6912, nathan.kley@stonybrook.edu
Dr. Stephanie Maiolino: HSC Academic Tower A, T8-021, (631) 448-8570, stephanie.maiolino@stonybrook.edu
Dr. Andrew Moore: HSC Academic Tower A, T8-084, (631) 444-3119, andrew.j.moore@stonybrook.edu
Dr. Maureen O'Leary: HSC Academic Tower A, T8-088, (631) 444-3730, maureen.oleary@stonybrook.edu
Dr. Eric Wilberg: HSC Academic Tower A, T8-083, (631) 448-2492, eric.wilberg@stonybrook.edu

TEACHING ASSISTANTS

David Howard david.howard@stonybrookmedicine.edu
Daphne Hudson daphne.hudson@stonybrook.edu
Kenneth King kenneth.king@stonybrookmedicine.edu
D'Arcy Marsh darcy.marsh@stonybrookmedicine.edu
Ashley Parks ashley.parks@stonybrook.edu
Zachary Warheit zachary.warheit@stonybrookmedicine.edu
Jenny Fung jenny.fung@stonybrookmedicine.edu
Laura Jao susanlaura.jao@stonybrookmedicine.edu

BOOKS

DISSECTOR

The *required* laboratory dissector that we use in this course is *Grant's Anatomy Lab* (Wolters Kluwer). Based on the classic *Grant's Dissector*, this is an online dissection guide that has been customized specifically for this class. In order to gain access to the dissector, you must first purchase an access code ($119.99 for one year of online access, purchased through RedShelf: https://redshelf.com/item/21174). Then go to the publisher's website (thePoint: https://thepoint.lww.com/gateway) to redeem your access code. (Click on New User, and then enter your access code to create your account and set your password. Then, the first time you log in to access the dissector, you will be asked to join a class. Your class code is **CL186**.)

PLEASE NOTE: You must purchase your access code for the dissector by the first day of class (Tuesday, June 18th). In order to ensure 100% compliance with this requirement (because the price is negotiated with the publisher in part on the basis of total course enrollment), RedShelf will provide to the course director immediately following this deadline a list of students who have paid for their access codes; this list will then be checked against the course roster to determine who, if anyone, has not paid. *Please help us to keep this process as simple as possible by purchasing your access codes prior to this deadline*.

Inside the anatomy laboratory, each dissection group will have access to an iPad, on which the dissector can be accessed during lab using the account of one of the group members. These iPads will remain in the lab. Outside of the lab, you can access the dissector from any electronic device with online access via your own personal account.

ATLAS

It is *required* that all students in this course obtain an atlas of human anatomy for their own personal use. (In the laboratory, a hard-copy atlas will be provided to each dissection group free of charge, but these copies will be for use in the laboratory only.) Three of the most widely used illustrated atlases of human anatomy are (presented in alphabetical order):

Atlas of Anatomy, 3rd edition, A. M. Gilroy & B. R. MacPherson (eds.). Thieme (2016). 760 pp. Available through Amazon.com as a new paperback (~$70 to buy, ~$15 to rent) or Kindle Edition (~$65). Also available as an e-book (~$85; https://www.thieme.com/books-main/anatomy/product/3581-atlas-of-anatomy).

Atlas of Human Anatomy, 7th edition, F. H. Netter. Elsevier (2019). 672 pp. Available through Amazon.com as a new paperback (~$75 to buy, ~$20 to rent) or Kindle Edition (~$60). Also available as an e-book (~$75 list price, but students in this class will be provided with a promotional code from the publisher for a 25% discount; https://evolve.elsevier.com/cs/product/9780323547086?role=student).

Grant's Atlas of Anatomy, 14th edition, A. M. R. Agur & A. F. Dalley. Wolters Kluwer/LWW (2017). 896 pp. Available through Amazon.com as a new paperback (~$60 to buy, ~$15 to rent) or Kindle Edition (~$10). Also available as an e-book (~$90; https://www.vitalsource.com/products/grant-39-s-atlas-of-anatomy-anne-m-r-agur-v9781496343819).

Netter's has long been a student favorite, whereas faculty have tended to prefer Grant's. The Thieme atlas, now in only its third edition, is much newer than both Netter's and Grant's, but it is steadily gaining in popularity among both students and faculty. Ultimately, the choice of an atlas is largely a matter of personal preference. All three listed here are excellent, and all have their own strengths. Older editions of these titles -- or those of other comprehensive atlases of human anatomy (e.g., Clemente, Rohen, etc.) -- can be used instead, and used copies of such older editions can often be purchased at significant savings.

TEXTBOOK

It is *recommended* (but not explicitly required) that all students in this course obtain and use a textbook of human anatomy. Two books in particular stand out as being especially well suited for this fast-paced course, as they are both adequately comprehensive, yet also reasonably concise (at least when compared with widely used unabridged anatomy texts, some of which well exceed 1000 pages!):

Core Concepts in Anatomy, 3rd edition, J. T. Stern, Jr. (2012; revised 2017). This is a relatively short (<300 pp.) and concise synopsis and review book. A limited number of print copies will be available for purchase ($20 for black-and-white editions; $40 for color editions) on a first-come, first-served basis from the Department of Anatomical Sciences in the main departmental office (HSC T8, Room 040) during normal office hours (approximately 9:00 am to 5:00 pm), or in the anatomy lab office (HSC L2, Room 132) during orientation. Alternatively, this title can be purchased through Amazon.com, either as a print copy with color figures (~$40), or as a Kindle Edition (~$10). Used copies of previous editions of this title may be used as acceptable substitutes for the current edition.

Moore's Essential Clinical Anatomy, 6th edition, A. M. R. Agur & A. F. Dalley. Wolters Kluwer/LWW (2019). 720 pp. (Believe it or not, this is one of the shorter comprehensive anatomy texts currently in print.) New print copies cost ~$75 through Amazon.com. Also available as an e-book (~$80; https://www.vitalsource.com/products/moore-39-s-essential-clinical-anatomy-anne-m-r-agur-arthur-f-v9781496369680).

WEBSITE

Additional resources (e.g., PDFs of PowerPoint lectures, radiology images, brain atlas, handouts, exams from previous years, links to useful online resources) can be accessed via the course website:

https://renaissance.stonybrookmedicine.edu/anatomy/people/facultypage/kley/kleylab1/course

You can contact the course director (nathan.kley@stonybrook.edu) for the username and password required to access secure course materials on the course website. (Although these credentials will be provided to all students on the first day of class.)

LABORATORY INSTRUMENTS AND APPAREL

You will be provided with dissection tools at the beginning of the course, and with new scalpel blades throughout the course. You will not be charged for these items. A limited supply of used (but cleaned) scrubs and lab coats will be made available free of charge during orientation in the anatomy lab office (HSC L2, Room 132). Nitrile gloves can be purchased in the anatomy lab office throughout the duration of the course at a price of $10 per box of 100.

BONE BOXES

Bone boxes, each containing a skull (or half skull) and elements of the postcranial skeleton, can be checked out by pairs of students in the anatomy lab office (HSC L2, Room 132) at the beginning of the course. The bone boxes are intended to be taken home for the purpose of study. Bone boxes must be returned at the end of the course, with all of their contents accounted for and in the same condition as when checked out. Please treat these bones -- *in particular the delicate skull bones* -- with the utmost care so that they remain valuable study materials for future students. This material is very costly to replace (if even available at all). Do not mark the bones with pencil, ink, or anything else. Use pipe cleaners -- *not probes or pencils* -- to explore the many openings throughout the skull.

CLASS HOURS

The class will meet Monday through Thursday from 1:00 pm to 5:00 pm and Friday from 8:00 am to noon. The first class will be on Tuesday, June 18th, at 1:00 pm in Lecture Hall 2 (HSC L2). The final exam will be at 1:00 pm on Tuesday, August 13th. There will be three practice quizzes -- all at 10:00 am -- on Wednesday 6/26 (Module 1), Tuesday 7/16 (Module 2), and Tuesday 8/6 (Module 3). ***PLEASE BRING ALL YOUR LABORATORY GEAR ON THE FIRST DAY AND BE PREPARED TO BEGIN DISSECTION!!!*** READINGS FOR JUNE 18th SHOULD BE DONE BEFORE COMING TO CLASS. (In *Grant's Anatomy Lab*: [1] Introduction and [2] The Back, *through* DEEP MUSCLES OF THE BACK. If you choose to use a textbook of human anatomy in this course, read the introductory section[s] of that.)

HOW TO STUDY

For lecture material, rely primarily on the posted lecture slides and the notes that you take on these in class, and supplement your studies by reading corresponding textbook sections. For laboratory material, focus primarily on reading the assigned sections in the dissector (*Grant's Anatomy Lab*), and supplement this effort by making extensive use of the illustrations in the atlas that you selected. Fortunately, there is a great deal of overlap between the material covered in lecture and laboratory, so your efforts in each of these areas will help to reinforce those in the other. In general, the most effective strategy in this course is to first familiarize yourself with these readings *prior to* lectures and laboratories, and then review the readings again afterwards in an effort to reinforce important concepts and identify any material that you don't adequately understand -- well before you're examined on the material.

Note also that there is a freely accessible online supplement to one of the suggested textbooks (*Clinical Sidelights to Core Concept in Anatomy*; https://jackstern.org/ClinicalSidelights.html) that emphasizes clinical correlates of many aspects of human anatomy that we learn about in this course. Many health professional students find this information to be both interesting and helpful in their studies. Be aware, however, that questions on the exams will not be clinically based, unless such clinical aspects are specifically emphasized in lecture.

TESTING AND GRADING

QUIZZES

Midway through each module of the course, there will be a short quiz. (Please note the 10 am times in the attached course schedule.) Quizzes will consist of a written component, with 15 multiple-choice questions, and a laboratory component, in which you will be asked to identify approximately 25 structures pinned or marked on various cadavers and radiographic images. Keys to the quizzes will be provided immediately afterwards. The questions on the quizzes will be of the same nature and degree of difficulty as those given in the examinations at the end of each module. The laboratory quizzes will cover all dissections that should have been completed by the time they are administered.

Quizzes are important because they give you an idea of the nature and degree of difficulty of the questions that you can expect on the upcoming examination for each module. They are also designed to encourage you to pace your learning properly instead of waiting until the end of the module before beginning to study in earnest -- a tactic which experience indicates can seriously imperil a student's chances of successfully completing the course.

EXAMINATIONS

There will be an examination at the end of each module. Each exam will consist of two parts: a written one consisting of 50 multiple-choice questions, and a practical one consisting of the identification of approximately 80 structures pinned or marked on cadavers and radiographic images. Course faculty and TAs will offer review sessions prior to each exam. Expect to be asked to identify structures in **bold print** in the dissector (*Grant's Anatomy Lab*). Structures in ***bold italic print*** in the dissector will not be pinned for the lab exams, but you may be asked about them in the written exams.

COMPUTATION OF FINAL COURSE GRADES

Your final course grade will be determined by your scores on the three examinations. (The quizzes are practice exams and do not count toward your final grade.) We will report numerical grades for each of your exams and a letter grade for your final course grade. The cut-offs for letter grades will be different for graduate students (HBA 561/540) and undergraduate students (HBA 461):

HBA 561/540:	A = 90%, B = 80%, C = 70%, D = 60%
HBA 461:	A = 85%, B = 75%, C = 65%, D = 55%

ACADEMIC DISHONESTY

Outside of examinations and quizzes you are encouraged to collaborate with your classmates in dissection and study of the course material. However, *during exams and quizzes* you MAY NOT: look at answers written or chosen by another student; communicate to other students information that might help them in answering questions; refer to notes, texts, or digital resources related to the subject matter being tested; use any other aid not explicitly permitted by the instructors; or communicate specific information about an exam or quiz to classmates who have not yet completed that exam or quiz. Note also that it is strictly forbidden to touch structures pinned in laboratory exams.

ANATOMY LABORATORY RULES OF CONDUCT

In this course, you are part of a team. You benefit from the dissections and knowledge of your classmates, but you also must contribute to the learning experience of others in the class. One important aspect of dissection-centered study is gaining an appreciation for the breadth of anatomical variation. As you walk around the laboratory toward the end of each class (after finishing your own dissections so that others will be able to learn from your work), you must treat the dissections done by your classmates with consideration and respect. Do not dissect their cadavers! Do not allow their dissections to dry out! Do not move body parts away from their respective tables! Finally, do not disrupt other groups while they are engaged in their own study sessions! Observe, but do not interfere! Return bones and models to the tables in the front of the lab so that they are available to everyone! You are encouraged to come to the lab outside of official class hours for review, and these same rules apply during such review sessions.

CADAVER POLICY

Out of respect for the generous body donations that are bestowed upon the Department of Anatomical Sciences in furtherance of your professional and educational development, professional behavior is required at all times in the anatomy laboratory. Departmental policy is as follows:

"*Individuals who donate their bodies to the Department of Anatomical Sciences at Stony Brook University do so with the desire and understanding that their remains will be used for educational or scientific purposes. Such donations deserve our admiration and deepest gratitude. To treat a cadaver in any way that does not serve educational or scientific purposes constitutes unprofessional behavior. One example is taking photographs (on film or electronically) that serve no educational or scientific purpose. Any student known to have taken such a photograph will be referred to the Committee on Academic Standing as having engaged in unprofessional behavior*."

HBA 461/561/540
***REGIONAL HUMAN ANATOMY* 2019**

MODULE 1: THORAX, ABDOMEN, PELVIS, PERINEUM

Day	Date	Topic	Lab Assignment: *Grant's Anatomy Lab* (online)
Tues	6/18	Introduction, Back	BACK—Introduction and Surface Anatomy *through* Deep Muscles of the Back (NOTE: We do not dissect the suboccipital triangle.)
Wed	6/19	Spinal Cord, Peripheral Nervous System	BACK—Vertebral Canal, Spinal Cord, and Meninges
Thur	6/20	Pectoral Region, Thoracic Wall, Introduction to Radiology	THORAX—Surface Anatomy *through* Removal of the Anterior Thoracic Wall
*Fri	6/21	Pleural Cavities, Lungs; Peripheral Nervous System Q & A	THORAX—Pleural Cavities *through* Lungs (NOTE: We do not dissect the bronchial tree.)
Mon	6/24	Middle Mediastinum, Heart	THORAX—Mediastinum *through* Internal Features of the Heart
Tues	6/25	Superior and Posterior Mediastina, Innervation of Thoracic Organs	THORAX—Superior Mediastinum *through* Posterior Mediastinum
Wed	6/26	**QUIZ I at 10 am** Abdominal Wall, Inguinal Region	ABDOMEN—Surface Anatomy *through* Male Scrotum and Spermatic Cord
Thur	6/27	Abdomen I	ABDOMEN—Reflection of the Abdominal Wall *through* Celiac Trunk, Stomach, Liver and Gallbladder
*Fri	6/28	Abdomen II	ABDOMEN—Superior Mesenteric Artery and Small Intestine *through* Removal of the Gastrointestinal Tract (NOTE: We do not inspect the inside of the intestines with the exception of the duodenum.)
Mon	7/1	Posterior Abdominal Viscera and Wall; Diaphragm	ABDOMEN—Posterior Abdominal Viscera *through* Diaphragm
Tues	7/2	Perineum and Pelvis I	PELVIS AND PERINEUM—All: Skeleton of the Pelvis Male: Male External Genitalia and Perineum *through* Splitting of the Pelvis Female: Female External Genitalia and Perineum *through* Splitting of the Pelvis
Wed	7/3	Pelvis II	PELVIS AND PERINEUM— Male Pelvic Cavity *through* Pelvic Diaphragm Female Pelvic Cavity *through* Pelvic Diaphragm
Thur	7/4	No Lecture	No Lab
*Fri	7/5	Review	REVIEW
Mon	7/8	**EXAM I**	

*A.M. Class

HBA 461/561/540
***REGIONAL HUMAN ANATOMY* 2019**

MODULE 2: HEAD AND NECK

Day	Date	Topic	Lab Assignment: *Grant's Anatomy Lab* (online)
Tues	7/9	Superficial Face, Scalp	HEAD AND NECK—Skull *through* Scalp (NOTE: Prepare for the craniotomies performed by our lab technician prior to tomorrow's dissection.)
Wed	7/10	Cranial Cavity	HEAD AND NECK—Interior of the skull *through* Cranial Fossae (NOTE: Place brains into buckets with alcohol [provided].)
Thur	7/11	CNS I	HEAD AND NECK—Gross Anatomy of the Brain and HANDOUT
*Fri	7/12	CNS II	HANDOUT
Mon	7/15	Orbit, Ear	HEAD AND NECK—Orbit through Ear (NOTE: Skip removal of eyeball.)
Tues	7/16	**QUIZ II at 10 am** Neck—Posterior Triangle, Anterior Triangle I	HEAD AND NECK—Skeleton of the Neck *through* Muscular Triangle
Wed	7/17	Neck—Anterior Triangle II, Root of Neck	HEAD AND NECK—Submandibular Triangle *through* Root of the Neck
Thur	7/18	Deep Face, Temporal Region	HEAD AND NECK—Parotid Region *through* Temporal Region
*Fri	7/19	Disarticulation of Head, Pharynx, Deep Neck	HEAD AND NECK—Disarticulation of the Head *through* Muscles of the Pharyngeal Wall
Mon	7/22	Bisection of Head, Nasal Cavity, Inside of Pharynx, Palate	HEAD AND NECK—Pharynx Inside *through* Hard Palate and Soft Palate
Tues	7/23	Oral Cavity, Larynx	HEAD AND NECK—Oral Region *through* Larynx
Wed	7/24	Review	REVIEW
Thur	7/25	**EXAM II**	

*A.M. Class

HBA 461/561/540
***REGIONAL HUMAN ANATOMY* 2019**

MODULE 3: LIMBS

Day	Date	Topic	Lab Assignment: *Grant's Anatomy Lab* (online)
Fri	7/26	No class (prepare for limbs…)	
Mon	7/29	Upper Limb Intro, Movements and Muscle Function, Scapular Region	UPPER LIMB—Surface Anatomy *through* Scapular Region (NOTE: Review Pectoral Region.)
Tues	7/30	Axilla, Brachial Plexus	UPPER LIMB—Axilla
Wed	7/31	Arm, Cubital Fossa	UPPER LIMB—Arm and Cubital Fossa
Thur	8/1	Forearm, Dorsum of Hand	UPPER LIMB—Flexor Region of the Forearm *through* Extensor Region of the Forearm and Dorsum of the Hand (NOTE: Skip Palm of the Hand, which we will do in the next lab.)
*Fri	8/2	Palm of Hand	UPPER LIMB—Palm of the Hand
Mon	8/5	Lower Limb Intro, Anterior Thigh, Medial Thigh	LOWER LIMB—Surface Anatomy *through* Medial Compartment of the Thigh
Tues	8/6	**Quiz III at 10 am** Gluteal Region, Posterior Thigh, Popliteal Fossa	LOWER LIMB—Posterior Superficial Veins and Cutaneous Nerves *through* Posterior Compartment of the Thigh and Popliteal Fossa
Wed	8/7	Leg, Dorsum of Foot	LOWER LIMB—Leg and Dorsum of the Foot *through* Anterior Compartment of the Leg and Dorsum of the Foot
Thur	8/8	Sole of Foot	LOWER LIMB—Sole of the Foot
*Fri	8/9	Joints	UPPER LIMB—Glenohumeral Joint and Elbow Joint and Proximal Radioulnar Joint LOWER LIMB—Knee Joint, Ankle Joint, and Joints of Inversion and Eversion
Mon	8/12	Review	REVIEW
Tues	8/13	**EXAM III**	

*A.M. class