

VERTEBRATE MORPHOLOGY LAB
BIOSC 1205
Dr. West

Per the provost's directives at this time, this lab will run entirely in-person and will not have a remote option.

During this pandemic, it is extremely important that you abide by the [public health regulations \(Links to an external site.\)](#), the University of Pittsburgh's [health standards and guidelinesLinks to an external site.](#), and [Pitt's Health RulesLinks to an external site.](#). These rules have been developed to protect the health and safety of all of us. Universal [face coveringLinks to an external site.](#) is required in all classrooms and in every building on campus, without exceptions, regardless of vaccination status. This means you must wear a face covering that properly covers your nose and mouth when you are in the classroom. If you do not comply, you will be asked to leave class. It is your responsibility have the required face covering when entering a university building or classroom. For the most up-to-date information and guidance, please visit [coronavirus.pitt.eduLinks to an external site.](#) and check your Pitt email for updates before each class.

If you are required to isolate or quarantine, become sick, or are unable to come to class, contact me as soon as possible to discuss arrangements.

Required Text: Dissection of Vertebrates by De luliis and Pulera, 3rd Edition, 2019. ("DV" on course calendar)

Office Hours: I am available by request for office hours and other concerns.

Discord server: (discord link)

Calendar:

Module	Date	Reading to complete before class (required)	Items due at start of class
1: Non-vertebrate chordates; Cyclostomata (hagfish & lamprey); histology	8/31	DV 1 & 2 Histology handout	
2: Skulls and skeletons	9/7	DV 3.1, 5.1, 6.1, 7.1, 8.1-5	Meshlab worksheet

3: Chondrichthyes (dogfish) external, musculoskeletal, digestive & respiratory	9/14	DV 3.1-3.4	Project group, topic, and files
4: Dogfish cardiovascular, urogenital, sensory, nervous	9/21	DV 3.5-3.8	
5: Teleostei (perch)	9/28	DV 4	Literature review section
6: Lissamphibia (mudpuppy)	9/29	DV 5	
7: Lissamphibia (frog)	10/6	DV 6	Methods section
8: Mammalia (cat, mink) external, musculoskeletal	10/13	DV 7.1-7.3	
9: Mammalia digestive, respiratory, cardiovascular, urogenital, nervous	10/20	DV 7.4-7.7	Project title
10: Dinosauria (pigeon)	10/27	DV 9	
11: Comparative anatomy: respiratory & cardiovascular systems	11/3	[review] DV 1, 2, 3.4, 3.5, 4.3, 5.4, 5.7, 6.3, 6.5, 7.4, 7.5, 9.4	Project draft
12: Comparative anatomy: musculoskeletal systems	11/10	[review] DV 2.1, 3.1, 3.3, 4.1, 5.1, 5.3, 6.1, 7.1, 7.3, 8.1-5, 9.1, 9.3	All project files

13: Final project presentations	11/17		Final presentation
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POLICIES AND INFORMATION:

Graded Assessments

Quizzes:

There will be a quiz or lab worksheet each week. You will work independently to name various anatomical structures in species that we look at in lab. Quizzes are open-notebook meaning you can use your class notes. Your lowest quiz will be dropped. Quizzes make up 60% of your grade.

3D Model Project:

Computer models are a critical component of modern comparative anatomy research. You will work together with a group on a dataset throughout the semester, generating a virtual model and using it to answer research questions about your specimen. The project is 30% of your grade, divided into smaller graded components throughout the semester.

Final Exam:

The final is a practical exam similar in format to the quizzes; over material from the entire course. The final is 10% of your grade.

Course Description

This laboratory course is designed to complement BIOSC 1200 (Vertebrate Morphology) course. Topics include anatomy and diversity of the vertebrate body within the contexts of function, development, and evolutionary modification. This laboratory provides an opportunity to learn vertebrate gross anatomy through various tools, including skeletons, organ models, dissection of specimens, demos of specimens, virtual dissection, and histology. This lab complements BIOSC 1200 Vertebrate Morphology, but may also be taken separately from that course.

Learning Outcomes

By the end of this semester, you will be able to:

1. Identify and name, from memory, a range of anatomical structures in a range of vertebrate specimens.
2. Describe how researchers assess relationships between vertebrates based on homologous anatomical structures.
3. Integrate knowledge of anatomical form with understanding of physiological function and evolutionary history of vertebrates.
4. Identify and describe histological imagery of vertebrate tissues and organs.
5. Navigate digital image files and generate virtual models from tomography data.
6. Ask a research question that can be answered using comparative anatomy and CT digital imagery.

Communication:

Important announcements will be posted to Canvas; you will get an email notification when an announcement is posted. If you have the Canvas app, you can set it to send you a push when an announcement is posted.

Questions about course content should be posted on the Canvas Discussions board. Generally, I will not answer email inquiries about content. If you have a question, first check if it's already answered on the discussion board, and if not, post it there.

You can always email me if you wish to set up a meeting privately or at a different time than regular office hours.

Intellectual property:

All course materials, including but not limited to lecture notes, powerpoint slides, quizzes, homework, videos, recitation assignments, are Dr. West's intellectual property. You may not reproduce any part of any quiz, exam, or graded assignment in any way. No photos, copying/pasting, screen-shots, etc.

Posting any part of the course content on any website or sharing it with anyone not currently enrolled in the course, without my express written permission, is a violation of the academic integrity code and may be a violation of intellectual property laws.

University Policy on Academic Integrity:

Students are expected to comply with the University of Pittsburgh School of Arts and Sciences [Academic Integrity Code](#)[Links to an external site.](#). Any student suspected of failing to meet the student obligations of the code during the semester will be required to participate in the procedures for adjudication, initiated at the instructor level. This may include, but is not limited to, confiscation of the assignment of any individual suspected of violating the code. A minimum sanction of a zero score for the assignment will be imposed. Violation of the Academic Integrity Code requires the instructor to submit an Academic Integrity Violation Report to the Dean.

Course Policy on Academic Integrity:

If you cheat on a quiz or exam you will receive an F in the course and an Academic Integrity Violation Report will be filed.

Resources:

If you do not have access to a reliable internet connection and a PC that meets the recommended minimum standards, including a current operating system, a limited number of mobile hotspots and/or laptops are available for temporary loan. Please visit <https://www.technology.pitt.edu/remotedevices> for more information.

For all technology-related issues, contact the 24/7 IT Help Desk at 412-624-HELP (4357) or utilize Virtual Technical Support.

The digital platforms used in this course are Canvas, Panopto, and Zoom. All materials, announcements, deadlines, zoom links, panopto links, and discussion boards for this course can be found on Canvas. You should check Canvas at least every Tuesday, Wednesday, and Thursday. Missing a Canvas announcement is not an excuse for missing an assignment or deadline.

Online tutoring, peer tutoring, and other studying help is available at Study Lab. I encourage you to check out this resource even if you are not sure exactly what you need. <https://www.asundergrad.pitt.edu/study-lab>

If you have a disability for which you are or may be requesting an accommodation, you should contact both Dr. West and [Disabilities Resources and Services](#)[Links to an external site.](#) 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (TYY), as early as possible in the term. DRS will determine reasonable accommodations for this course. The Canvas LMS platform

was built using the most modern HTML and CSS technologies, and is committed to W3C's Web Accessibility Initiative and Section 508 guidelines. Specific details regarding individual feature compliance are documented and updated regularly.

Each student is issued a University e-mail address(username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to <http://accounts.pitt.edu>, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page. Be sure to log out of your account when you have finished. University's policy on diversity and inclusion: The University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University's Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University's mission. For more information about policies, procedures, and practices, see: <https://www.diversity.pitt.edu/civil-rights-title-ix-compliance/policies-procedures-and-practices>[Links to an external site.](#). You can contact the Title IX Coordinator by calling 412-648-7860, or e-mailing titleixcoordinator@pitt.edu. Reports can also be filed [online](#)[Links to an external site.](#). You may also choose to report to a faculty/staff member; they are required to communicate this to the University's Office of Diversity and Inclusion. If you wish to maintain complete confidentiality, you may also contact the [University Counseling Center](#)[Links to an external site.](#) (412-648-7930).

Mental health: Factors including significant stress, mood changes, excessive anxiety, or problems with sleeping can interfere with your academic performance. You have a support network to help you through these challenging times. If you are in an EMERGENCY situation, call 911 or Pitt Police at 412-624-2121. If your symptoms are due to financial strain, please visit <https://pitt.libguides.com/assistanceresources> ([Links to an external site.](#)) to see all available University resources. If your symptoms are due to strained relationships, families, or personal crises, please visit the [University Counseling Center](#)[Links to an external site.](#) for free confidential services. If your symptoms are strictly related to your performance in this course, we can discuss this privately at your discretion: make an appointment by emailing me. Resolve Crisis Service (FREE 24-hour crisis service for Allegheny County):1-888-796-8226 General Mental Health Crisis Response: 412-648-7930 Sexual Assault Response: 412-648-7856

COVID-19 safety: In the midst of this pandemic, it is extremely important that you abide by public health regulations and University of Pittsburgh health standards and guidelines. While in class, at a minimum, this means you must wear a face covering and comply with physical distancing requirements; other requirements may be added by the University during the

semester. These rules have been developed to protect the health and safety of all community members. Failure to comply with these requirements will result in you not being permitted to attend class in person and could result in a Student Conduct violation. For the most up-to-date information and guidance, please visit coronavirus.pitt.edu and check your Pitt email for updates before each class.