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BIOE 403.01: Functional Vertebrate Morphology

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Biology (BIOE) 403: Functional Vertebrate Morphology Fall 2013 Lab Syllabus

Monday 2:40-5:30 pm, Friday 1:10 - 5:00 pm, HS 102

Kristen Crandell kristen.crandell@gmail.com Office Hours will be during open lab and by appointment.

Text: Homberger and Walker, Vertebrate Dissection

There are also numerous websites, alternate dissection guides, and study guides that may help in the study of comparative anatomy.

Lab handouts will be available on moodle in advance of lab at http://umonline.umt.edu It is your responsibility to print out handouts and finish all of the reading and pre-lab work *prior* to coming to the lab.

Friday sessions will generally be held at the Field Research Station at Fort Missoula. These sessions provide time in an active biomechanics and functional anatomy lab for **group research projects** on novel scientific questions. Thus the exact time and dates that you will be required to attend will depend on your project. Project assignments will be made in the first two weeks. At the end of the semester, you will write your own scientific manuscript, and perform a professional group presentation of the results of your research. Times of meetings will be announced, due dates are on the attached handout.

Homework and Quizzes: each lab will have a homework assignment to be completed before lab and a quiz at the end of lab. Quizzes will provide examples of the types of questions on the **practical exams**.

Exams will consist of practical questions about structures, functions, and comparisons of anatomy. There will be *no* makeup quizzes or exams, period.

Pre-lab assignments are just that, short assignments to be downloaded from the website or handed out in class, and MUST be completed prior to coming to lab, *or you will not be allowed to participate*.

Lab Points:	
Quizzes, Homework	50
1st lab practical	50
2nd lab practical	50
Group project	50
Participation/Preparation (20 pts)	
Group Evaluation (10 pts)	
Group Presentation (20 pts)	
	200 points

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and /or a disciplinary sanction by the University.

All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://www.umt.edu/SA/VPSA/index.cfm/page/1321

Schedule (subject to revision)

August 25 Mon. Lab la: Introduction to anatomy and chordates; post-cranial skeleton of cat September 1 Mon. Lab lb: Comparative post-cranial skeletons September 1 Mon. Lab 2a: Cranial skeleton anatomy and Comparative skulls: evolution/migration of inner ear ossicles 8 Mon. Lab 3: Muscle dissection: proximal-appendicular, and major axial muscles 12 Fri. Initial meetings: All Groups, Field Station 13 Sat. Field Trip: National Bison Range 15 Mon. Lab 3: Muscle dissection: Comparative 19 Fri. Experiment time (group) 20 Mon. Lab 5: Muscle function and Biomechanical techniques: sonomicrometry and strain gauges 21 Fri. Nab: Comparative Muscle Dissections 22 Mon. Lab: Comparative Muscle Dissections 23 Mon. Lab 5: Comparative Muscle Dissections 24 Fri. No Lab - Write Final Project Proposal 25 Mon. Lab: Si Nervous system, brain and eye 26 Fri. Experiment time (group) 27 Mon. Lab 6: Nervous system I dissection: the heart, arteries, and veins	<u>Month</u>	Date	Day	Lab and assignments
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BIOE 403 2013Research Projects

Initial meetings: Each group will meet at the designated times to discuss the rationale behind the project. Literature will be distributed at this time to aid in a more detailed literature search in preparation for writing the proposals.

Proposals: Must be submitted by noon on the date specified. They must be submitted electronically (as a MS Word attachment) via email. Receipt will be confirmed by email. Editing suggestions will be made, and the rewrites will be due before starting the experiment. No late proposals will be accepted. Each person must write their own proposal.

Experiments: All group members are required to attend all parts of the experiment. Some may have both morning and afternoon times. The total amount of time for the experiment will be at least five hours.

Manuscripts: Must be submitted by noon on 11 December. They must be submitted electronically (as a MS Word attachment) via email. Receipt will be confirmed by email. Format should follow the *Journal of Experimental Biology* (http://jeb.biologists.org). No late manuscripts will be accepted. Each person must write their own manuscript.

Presentations: There is a 30 minute slot for each presentation. Please allow 5 - 10 minutes for a questionand-answer session within that slot. Presentations must be made using MS Powerpoint and brought to the session (Field Station) via CD or USB key to upload to the presentation computer at least 15 minutes before the start of the session. All group members should play equal parts in the presentation.

Details on format for proposals, manuscripts, and presentations will follow.