

Comparative Vertebrate Anatomy – Zoology 324 Syllabus Spring 2012

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Office Hours: M/W, 9:00 – 10:30

Research Interests: Conservation genetics, large carnivore ecology, tropical ecology and systematics

Co-Instructor: Dr. Mohan Manikkam Office: Abelson Hall 514 509-335-2086

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Office Hours: Wednesdays, 1:00 - 2:50

Research Interests: Animal Breeding and Genetics, Veterinary Science

Class Schedule:

Lecture: Center for Undergraduate Education (CUE) 291, M/W, 11:10 - 12:00

Lab: Eastlick (EAST) 170, MW 14:10-17:00 or T/Th, 14.50-17.40

Goals:

We will teach you the anatomy of vertebrates. In the lecture portion of the course, unifying concepts such as developmental and evolutionary origins of organs and organ systems will be addressed. In the lab, you will learn to dissect representative vertebrates and to recognize elements of the various organ systems we cover.

Text and Manuals:

Kardong, K. V. 2012. *Vertebrates, Comparative Anatomy, Function, Evolution*, 6rd ed. McGraw-Hill.

Kardong, K. V., & E. J. Zalisko. 2012. *Comparative Vertebrate Anatomy, A Laboratory Dissection Guide*, 6rd ed. McGraw-Hill..

Additional lab and classroom notes as provided.

Other Required Material:

- Dissection kits*- available from the bookie, or from the bookstore at the vet hospital

Optional Materials

- Highly recommended- sketch quality lab notebook (taking good notes- including quality, annotated sketches- will be very helpful in the laboratory)
- Recommended but not essential- lab coats

*Note- scalpels- while available for purchase- are probably not helpful

General Note:

This course will be taught very much from an evolutionary perspective. That the diversity of vertebrates we see today and in the fossil record arose through evolutionary processes is supported by so much evidence as to be essentially irrefutable. Any person who may find this viewpoint objectionable should consider whether he or she wishes to take this course.

Make-up Policy:

Make-up exams will be given only for the lecture exams, and for those, only if I have been contacted prior to the time of the exam. A missed lab exam will not be made up, and departmental policy prohibits students from taking the final exam at any time other than the regularly scheduled time.

Lecture Notes and Exam Expectations:

I provide detailed notes for my in-class lectures.

A full 100% of the points for each lecture-based exam will be drawn from material covered in these notes. However, there will always be an additional 10% drawn from additional material in the assigned text readings (major themes and concepts that could not be squeezed into a one-hour lecture period). This is intended to serve as incentive for processing the readings beyond the limited content I'm able to present in lecture.

Each exam will emphasize the most recent material covered since the previous exam, however up to about 25% may be review.

Lab Notes and Lab Expectations:

Short guides for each lab will be posted on the web the week before each session. These handouts will clearly indicate which of the elements presented in *Comparative Vertebrate Anatomy, A Laboratory Dissection Manual* will be covered. Laboratory exams will test your knowledge of anatomy, function, homology, and association. More will be said about this in laboratory when each system is introduced. As with lecture exams, up to 25% of lab exams may be review material.

Expectations for 'Form and Function' labs will also be spelled out explicitly in handouts posted on the web.

Lecture Schedule

Date	Lecture Topic	Chapters	Lab
1/9	1. Introduction, Vertebrate Phylogeny & Origins	2, 3	Survey of fishes
1/11	2. Origin of Vertebrates, Vertebrate Embryology	2, 3	Integument and Vertebrae
1/18	3. Vertebrate Embryology/Integument	5, 6	Girdles and Limbs
1/23	4. Integument/Teeth	6, 13	Quiz1 (taxonomy) , Skulls
1/25	5. Cranial Anatomy	7	
1/30	6. Cranial Anatomy/Axial Skeleton	7, 8	Skull cont., cartilage etc.
2/1	7. Axial Skeleton/Ribs	8	Teeth
2/6	8. Appendicular Skeleton	9	Form and function I
2/8	9. Exam I		Form and function II
2/13	10. Appendicular Skeleton	9	Review and Revise

2/15	11. Myology – Muscle form and function	10	Practical Exam I
2/22	12. Myology – Evolution of muscle groups	10	Musculature
2/27	13. Digestive System	13	Musculature
2/29	14. Digestive System	13	Musculature
3/5	15. Coelom, Mesenteries	5	Musculature
3/7	16. Respiratory System	11	Musculature
3/19	17. Respiratory System	11	Form and Function III
3/21	18. Exam II		Form and Function IV
3/26	19. Circulatory system: Heart	12	Review
3/28	20. Circulatory system: Arteries, Veins, Lymphatics	12	Practical Exam II
4/2	21. Urinary System	14	Digestive System
4/4	22. Reproductive System	14	Urogenital System
4/9	23. Reproductive System	14	Circulatory System
4/11	24. Endocrine System`	15	Circulatory System
4/16	25. Sensory systems	17	Nervous System
4/18	26. Exam III		Nervous System
4/23	27. Nervous system	16	Review
4/25	28. Nervous system	16	Final Practical Exam
5/2	Final Exam: 3:10 P.M.		

Grading:

Lecture Exams: 100 (1-3) plus 150 (final) points each	450 points
Lab Quiz (taxonomy)	50 points
Lab Exams: 100 points each	300 points
Total	800 points

The final lecture exam will count the same as the other three exams. It will be longer, and will be about 1/2 new material and 1/2 cumulative material.

General Expectations

- 1) *Courtesy.* I expect that you will respect and show courtesies toward all members of the course. This includes arriving in lecture and laboratory on time, and without disruption of the class. All cell phones will be turned off during scheduled lectures and laboratories. If you arrive late or depart early from lecture, then plan to find a seat quietly and conveniently near the back of the room where your movements will not disrupt colleagues.
- 2) *Special Accommodations.* For physical, mental, or religious reasons, special accommodation may be requested by a student. Reasonable efforts are made to accommodate these requests, but in some cases this may not be feasible because of the academic expectations of the course, time-intensive nature of preparing laboratory exams, and necessity of being fair to all other members of the course. Therefore, if you expect to receive an accommodation for any reason, this must be made directly to me, the instructor, during **the first week of the semester.**
- 3) *Bomb Threats and Building Closures.* Occasionally, anonymous bomb threats or building maintenance require the University to suddenly close a building where an exam is scheduled. In such cases, you should meet outside the main building entrance, where we will decide on an alternative, safe place to continue with the exam. In no instance will the scheduled exam be canceled or delayed. Therefore you are responsible for meeting with the class outside the building and continuing to the alternative exam site that will be announced.
- 4) *Unethical Conduct.* Cheating on an exam or a laboratory assignment will result in a final grade of F for the entire course, will be reported to the Office of Student Affairs, and may result in additional disciplinary action by the University.
- 5) *Corrections to this Syllabus.* Corrections of clerical mistakes to this syllabus will be immediately binding.