Functional Vertebrate Anatomy (ZOO 3713), FALL 2009

Lecture: MWF, 8.30-9.20 AM, 270 Florida Gymnasium
Laboratories: M-F, 1.55-6.00 PM, 109 Carr
URL: http://people.biology.ufl.edu/sthsieh/courses.html
** Also accessible by going directly to your e-Learning site **

Course Description and Objectives:
A thorough understanding of vertebrate anatomy is essential for appreciation of many fields of biology, including organismal and molecular study, paleontology, evolutionary development, biomechanics, sports therapy, and medicine. This course presents a functional perspective of comparative vertebrate anatomy, taking advantage of the diversity and conservation of morphological form in the animal kingdom to increase appreciation for how form can dictate function of select organ systems, and of the organism as a whole. The once-weekly laboratories are an essential part of solidifying what is taught in lecture, and reinforcing anatomical terminology. Consistent and punctual attendance to all parts of the course is expected and required.

Instructor:

S. Tonia Hsieh
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Office Hours: Mondays, 10 AM - 12 PM, or by appointment

Teaching Assistants:

Oscar Tarazona (Head TA): otarazona@ufl.edu
Mariela Pajuelo: mpajuelo@ufl.edu
Joe Pfaller: jpfaller@ufl.edu

Textbooks:

Functional Anatomy of the Vertebrates: An Evolutionary Perspective
By Liem, Bemis, Walker and Grande, Third Edition, Brooks Cole Publisher, 2000.
Comparative Anatomy
By Fishbeck and Sebastiani, Morton Publishing Co., 2nd Edition, 2008

Handouts and Supplemental Readings:
Handouts and readings for the lab and lecture will be posted on the course website. It is expected that you will print the appropriate handouts and bring them to class with you. Lecture handouts will be posted by 10PM the night before class and readings will be posted by Saturday for the following week's discussion. Laboratory handouts will be posted by Thursday of the preceding week.

Extra Credit Fridays

Each Friday, you will have the opportunity to submit no more than THREE typed exam-style multiple choice questions and associated answer key, *via* the e-Learning website. These questions must reflect your own work, and be generated by your own imagination, based on the topics discussed that week. If one or more of your questions are selected for use on the next exam, you will receive two extra credit points for each question.

Exam Format

You will be given two midterm exams and one final exam during the course of the semester. The **midterm exams** will last **1 hour**, starting promptly at 8.30AM and ending promptly at 9.30AM. You will have **two hours** to complete the **final exam**. All exams will be multiple choice and will be machine graded, so please arrive on time with a **No. 2 lead pencil**. Extra pencils will not be provided. Calculators are not required for the exam and will not be permitted in the exam room. Each exam will also have a short answer, extra credit question at the end.

Grading Policy

Final grades will be determined as a combination of exams, quizzes, attendance to both lecture and lab, and participation in the course. Your consistent participation is critical because it is very difficult to learn when one is not engaged and actively interacting with one's peers and with the instructors.

Mid-term Exams (2 @ 150 pts each)	300
Final Exam (cumulative)	320
Lab	360
Attendance and Participation	20
Total	1,000

Your grade will be calculated as your total score (lab + lecture) relative to the class curve and mean. The actual curve will be decided only after all grades are in. However, as a ballpark estimate, the following percentages will **guarantee** the following **minimum** grades:

≥ 90% A- ≥ 80% B- ≥ 70% C- ≥ 60% D less than 60% E

Use this scale *only as a guide* in regards to how you are doing in the class, *before* a curve is applied.

Answer keys to the exams will be posted shortly after they are returned. You are entitled to a re-grade on any exam. All re-grade requests must be submitted to the instructor no later than **one week** after it has been returned, with a **typed** justification for why a re-grade is justified. I reserve the right to re-grade the entire exam and not just the disputed question. All re-grades are final.

Make-up Exams

Make-up exams will be offered only for verifiable medical and/or family emergencies. Expect the make-up exam to be substantially more difficult than the in-class equivalent.

Classroom Conduct

Please arrive to class prepared to learn and actively participate in all aspects of the course. Since interaction and open discussion are essential to effective learning, be respectful towards your classmates. Unusual comments often generate provocative discussions, if the time is taken to understand a novel point of view. We might *all* learn something new. That said, if you do make a contentious statement, you may also be asked to defend it!

To enhance the learning environment, unnecessary disruptions are unacceptable. Cell phone conversations must be completed before entering the lecture hall and the phone turned off, or the ringers silenced, for the full duration of class.

By teaching this course, I commit to joining you in the pursuit of knowledge for as far as you would like to take it. To ensure equal opportunity to every student in the class, I will not tolerate dishonest or demeaning behavior. I expect you to conduct yourself according to the University Honesty Pledge, which I reproduce below. I encourage you to ask questions during lecture, to work together in study groups, and to openly discuss what you are learning with your peers, the teaching staff, and me, as this is an essential part of the learning process. Cheating on assignments and exams will not be tolerated, and will be reported to the Dean of Students. If you cheat, you have adversely affected the other students in the course, and this will result in appropriate disciplinary action.

University Honesty Pledge

"I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University."

University of Florida Rule 6C1-4

Lecture Schedule and Readings (*subject to change*)

Week	Class	Date	Topic	Reading/Assignment
1	1	August 24	Course introduction; What is Functional Anatomy?	Ch 1
	2	August 26	Organismal Classification	Ch 2 and 3
		August 28	**NO CLASS**	
2	3	August 31	Vertebrate Body Plan	Ch 4
	4	September 2	Embryology	Ch 4
	5	September 4	Research topic: The origin of the turtle body plan (**Oscar Tarazona**)	Posted Readings
3		September 7	**NO CLASS** *(Office Hours held Wednesday)*	
	6	September 9	Skin	Ch. 6
	7	September 11	Tissues and Bone	Ch 5, pp. 183-200
4	8	September 14	Bones in Locomotion	
	9	September 16	Intro to Physics for Biologists	Ch 5
	10	September 18	The Vertebrate Skeleton: The Cranium	Ch 7
5	11	September 21	Feeding and Mastication I	Ch 7
	12	September 23	Feeding and Mastication II (**Joe Pfaller**)	Ch 7
	13	September 25	*In-class Review*	
6	14	September 28	**MIDTERM EXAM 1** *(Office Hours by Appt.)*	
	15	September 30	The Vertebrate Skeleton: The Axial Skeleton	Ch 8
	16	October 2	The Vertebrate Skeleton: The Axial Skeleton	Ch 8
7	17	October 5	Limb Evolution	Ch 9
	18	October 7	The Vertebrate Skeleton: Limbs	Ch 9
	19	October 9	Terrestrial Locomotion	Ch 11, pp. 360-380
8	20	October 12	The Muscular System I	
	21	October 14	Guest speaker: **Dr. Steve Deban (University of South Florida)** Muscular System II	
		October 16	**NO CLASS – Homecoming**	Posted Reading
9	22	October 19	Terrestrial Locomotion II: Moment Arms	TBA
	23	October 21	Moment Arms Practice Problems	Handout
	24	October 23	Other Locomotor Modes: Swimming	Ch 11, pp. 354-359
10	25	October 26	Other Locomotor Modes: Flight	Ch 11, pp. 380-391
	26	October 28	Research Topics: Adhesion	Posted Reading
	27	October 30	Sensory Systems: CNS and PNS	Ch 13 & 14

Week	Class	Date	Topic	Reading/Assignment
11	28	November 2	Internalizing the External World: Sensory Organs	Ch 12
	29	November 4	Research Topic: Sensing turbulent flows in swimming fish	Posted Reading
	30	November 6	*In-class review*	
12	31	November 9	**MIDTERM EXAM II** *(Office Hours by Appt.)*	
		November 11	**NO CLASS, Veteran's Day**	
	32	November 13	Respiratory System I	Ch 19
13	33	November 16	Respiratory System II	Ch. 19
	34	November 18	Circulatory System	Ch 18
	35	November 20	Hormones and Physiology	Ch 15
14	36	November 23	Reproduction	Ch 21
		November 25	**NO CLASS**	
		November 27	**THANKSGIVING, NO CLASS**	
15	37	November 30	Digestive System I	Ch 17
	38	December 2	Digestive System II	Ch 17
	39	December 4		
16	40	December 7	Closing remarks	
	41	December 9	**LAST DAY OF CLASS** *In-class review*	
		December 18	**FINAL EXAM (7.30AM – 9.30AM)**	