

BIOL 473: MAMMALIAN MORPHOLOGY LECTURE SYLLABUS

Fall 2011 Course Information: This course is an examination of the field of mammalian morphology. We will focus on several topics in the field: functional morphology, evolutionary morphology, and morphogenesis. Particular attention will be given to the musculoskeletal system and the craniofacial region. Students will be expected to read assigned articles and give a presentation.

Prerequisites: BIOL 252 or 276. A firm grasp of the basics of anatomy, and some familiarity with physical principles is required.

Contact: Feel free to contact me by email johnsonc@bio.unc.edu. I prefer not to be contacted by phone. I am 100% committed to being available to answer questions or explain difficult material. If you need help in understanding anything, please stop by for help or email your question

Office hours: 2-4pm Tuesdays and Thursdays in Wilson 104A. I will also meet anytime that I am able outside of those hours (by appointment) for those who cannot make it during regular office hours.

Grading policy and other information: Outside of lecture, I will make any important information known through the 'announcements' section of Sakai so be sure to check it often. Grades will be posted to Sakai as soon as they are available after exams. Your grade for this course will be determined by your presentation and 2 exams: one midterm and one cumulative final.

Midterms (2 x 30%), Final exam 30%, Presentation: 10%

BIOL 473L: MAMMALIAN MORPHOLOGY LAB SYLLABUS

Lab includes a detailed dissection of a representative mammal, emphasizing the common structure of all mammals. The dog will be used unless a group is interested in another mammal (talk to me). Opportunities are available for independent investigation of specific functional adaptations of specialized forms. Labs will be dissection-based and allow students the opportunity to discover the structure of the entire mammalian form in detail. Students will be responsible for weekly oral exams.

Prerequisites: BIOL 252 or 276L.

Optional Lab Text/manual: *"Guide to the Dissection of the Dog 7th edition, by Evans."* It took them 7 editions to finally produce a color dissection guide! The results are nice, and it is a classic for good reason. Don't buy a previous edition. I will have lab copies available, but they must stay in the lab for reasons that will become apparent

BIOLOGY 473 – LECTURE SCHEDULE

Date	Lecture Topic
Introductory Topics	
T Aug 23	Evolutionary Origin of Mammals
R Aug 25	Mammalian Diversity
T Aug 30	Morphological vs. Molecular Phylogenies
R Sept 1	Establishment of the Mammalian Form: Early Morphogenesis
Unit 1: The Limbs	
T Sept 6	Limb Development
R Sept 8	Development of the Limb Skeleton
T Sept 13	Histiogenesis of the Musculoskeletal System
R Sept 15	Mammalian Limb Diversity
T Sept 20	Exam I
Unit 2: Physical Properties of the Musculoskeletal System	
R Sept 22	Structural Elements of the Mammalian Body
T Sept 27	Morphological Considerations of Size and Shape of Mammals
R Sept 29	Support and Movement
T Oct 4	Cursorial Adaptations
Unit 3: The Mammalian Trunk	
R Oct 6	Vertebral Column: Pattern, Mechanics, Diversity
T Oct 11	Universal Pattern of Body Musculature
R Oct 13	Development of the Axial Skeleton
T Oct 18	Vertebral Evolution and Constraints in Mammals
R Oct 20	FALL BREAK
T Oct 25	Student Presentations
R Oct 27	Student Presentations
T Nov 1	Student Presentations
R Nov 3	Exam II
Unit 4: The Mammalian Head	
T Nov 8	Craniofacial Development
R Nov 10	Functional Anatomy of the Masticatory Apparatus
T Nov 15	Dentition
R Nov 17	Evolution of the Skull
T Nov 22	Hominin Brain/Skull Evolution
R Nov 24	HOLIDAY
T Nov 29	Student Presentations
R Dec 1	Student Presentations
T Dec 6	Student Presentations
R Dec 15	Exam III: 8-11am