

INTEGRATIVE BIOLOGY 184/184L, 2010

Lectures: Wednesday and Friday, 11 a.m. –12 noon, 3007 VLSB

Lab: Wednesday and Friday, 1-3 pm, 3007 VLSB

Text:

Lecture: Analysis of Vertebrate Structure, 5th Edition, M. Hildebrand and G. E. Goslow, Jr.

Lab: Handouts and downloads; also useful towards the end of the course is Vertebrate Taphonomy, R. Lee Lyman.

Instructor: Anthony Barnosky (barnosky@berkeley.edu) Office hours: Tues 10-11 or appt., 5002 VLSB

Graduate Student Instructor: Allison Stegner (astegner@berkeley.edu) Office hours: TBA

Grading: Lecture—2 midterms (30% each), 1 comprehensive final exam (40%)

Lab—weekly quizzes, cumulative lab final

(Week 1)

F Aug. 27 Course organization.

NO LAB THIS WEEK

(2)

W Sep. 1 Basics of evolutionary time, begin Chordate evolution [**1-IB184-2010**]

F Sep. 3 Chordate evolution 1: Tunicates to *Haikouella* [**2-184-2010 Chordates**]

Text reading: Chapters 1, 2

LAB 1: Introduction to the skeleton—learning the major bones

(3)

W. Sep. 8 Chordate evolution 2: Burgess to Gnathostomes [**3-184-2010 Defining Vertebrates**]

F. Sep. 10 Chordate evolution 3: Fish heads and beyond [**4-184-2010 VertWrapup Fish Heads1**]

Text reading: Chapter 3, 4

LAB 2: Fish heads (lots of bones to learn)

(4)

W. Sep. 15 Development of Hard Tissue 1 [**5-184-2010 Fish Heads2**]

F. Sep. 17 Development of Hard Tissue 2 [**6-184-2010 Tetrapods**]

Text reading: Chapter 5, 6

LAB 3 Herp and bird skulls

(5)

W. Sep. 22 Development and Intro to Biomechanics [**7-184-2010 Bone Development1**]

F. Sep. 24 The Skull: Nerves, Muscles, and Jaws [**8-184-2010 Skulls and Levers 1**]

Text reading: Chapter 22 (Biomechanics), 18, 19 (Nervous system & sense organs)

LAB 4: Mammal skulls and teeth

(6)

W. Sep. 29 Teeth: growth and function [**9-184-2010 Skulls and Levers 2**]

F. Oct. 1 Teeth: identification and function [**10-184-2010 Skulls Mechanics Exercise**]

Text reading: Chapter 7 (Teeth), 12 (Digestive system), 30 (Feeding)

LAB 5: Mammal Teeth

(7)

W. Oct. 6 ~~Vertebral column, Limbs and limb girdles~~ Midterm review and skull mechanics, teeth [**11-184-2010 Skulls wrap-up and teeth**] [**12-IB 184 2010 Tetrapod project intro**]

F. Oct. 8 **MIDTERM EXAM 1** [SVP MEETING]

Text: Chapter 9 (Body skeleton), 17 (Post-cranial nervous system)

LAB 6: Vertebrae

(8)

W. Oct. 13 NO CLASS [SVP MEETING] [**13-Independent reading Tiktaalik**]

F. Oct. 15 Water-land transition Project Organization [**14-184-2010 Tiktaalik**]