EVOLUTION OF VERTEBRATES – LECTURE OUTLINE
Winter 2010
Dr. J. Hughes

Week of January 4
Unit 1.
Introduction to the course
Vertebrate diversity and classification

January 11
Units 2 and 3.
Chordate/Vertebrate bauplan
Early vertebrates and agnathans

January 18
Units 4 and 5.
Gnathostome bauplan; Life in water
Early gnathostomes

January 25
Units 6 and 7.
Chondrichthyans
Major radiation of fishes: Osteichthyans

February 1
Units 8 and 9.
Tetrapod origins and the invasion of land
Extant amphibians: Lissamphibians

February 8
Unit 10.
Midterm test (Units 1-8): Monday, February 8th
Evolution of amniotes; Anapsids

February 15
Study week

February 22
Units 11 and 12.
Lepidosaurs Evolution of amniotes; Anapsids
Mesozoic archosaurs

March 1
Units 13 and 14.
Evolution of birds
Avian flight

March 8
Unit 15.
Avian ecology and behaviour

March 15
Units 16 and 17.
Rise of mammals
Monotremes and marsupials

March 22
Unit 18.
Eutherians (Monday)

End of term test (Units 9-18): Wednesday, March 24st

March 29
No classes this week

Outline Winter 2010
EVOLUTION OF VERTEBRATES – LAB OUTLINE

January 6
No lab

January 13
Lab 1
Integuments and Skeletons

January 20
No lab

January 27
Lab 2
Aquatic locomotion

February 3
No lab

February 10 Lab 3
Feeding: form and function

February 17
Study week – No lab

February 24 Lab 4
Terrestrial locomotion

March 3 Lab 5
Flight

March 10
No lab

March 17 Lab 6
Sensory systems

March 24
No lab

March 31
Lab test

Outline Winter 2010

GENERAL INFORMATION AND MARKING SCHEME

Professor:
Dr. Janice M. Hughes
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Technologist:
Don Barnes
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Suggested textbook:
Pough, F.H., C, M, Janis, and J. B. Heiser. 2008
Vertebrate Life, 8th edition. Prentice Hall.

Required supplementary notes: Hughes, J. M. The Evolution of Vertebrates: Supplementary Notes and Lab Manual.

Grading scheme:

Midterm lecture test February 8 20%
Dinosaur/Poster March 17 20%*
Lab assignment 1 January 27 3%
Lab assignment 2 February 24 3%
Lab assignment 3 March 17 4%
End of term test March 24 25%
Lab test March 31 25%

*Bonus points will be awarded for successful completion of a dinosaur. Students may make a “research” poster with permission of the professor; however, no bonus marks will be awarded. The dinosaur/poster is due during the March 17th lab. Late dinos will receive no bonus marks, and per diem marks may be deducted. More information will be given in class.

Please note the following:

1. This course does not have an exam scheduled in the final exam period. Therefore, students who fail the end of term lecture test on March 24st will not be able to write the special exam scheduled during the following summer.

2. Students taking this course will be required to observe and/or handle study skins, skeletons, and preserved specimens during the laboratory sessions. Those who are uncomfortable with these practices should not register in this course.

3. Specimens examined in the lab may not be available for viewing at other times, so complete your work during the scheduled lab time.

HELPFUL WEBSITES

Tree of Life Web Project

http://www.tolweb.org

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Link through branches on each phylogeny or use taxon search

- Many (but not all) pages contributed by foremost experts; references included
- Leading-edge phylogenies may not be the most widely accepted
- Good illustrations; some excellent reviews of phylogenetic relationships

The Paleontology Portal

http://www.paleoportal.org/

- Provided by the University of California Museum of Paleontology
- Well-written and researched
- Excellent information on fossils, ancient climates, and geology

University of Michigan Museum of Zoology Animal Diversity Web

http://animaldiversity.ummz.umich.edu/site/index.html

- Excellent site with many photographs, and quicktime movie and sound files
- Solid basis in classification; good information on specific taxa

Please remember, however, that many web-pages are not peer-reviewed. This means that the information or opinions expressed in them may not have been evaluated by experts in the field; in other words, they may not be accurate. Furthermore, the author’s viewpoints on systematics, and evolutionary origins and relationships may be controversial. University and museum webpages are usually the most reliable.