**EVOLUTION OF VERTEBRATES – LECTURE OUTLINE**

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|---|---|---|
| January 6 | | Introduction |
| January 8 | Unit 1 | Vertebrate diversity and classification |
| January 13 | Unit 2 | Chordate/Vertebrate bauplan |
| January 15 | Unit 3 | Early vertebrates and agnathans |
| January 20 | Unit 4 | Gnathostome bauplan; Life in water |
| January 22 | Unit 5 | Early gnathostomes |
| January 27 | Unit 6 | Chondrichthyans |
| January 29 | Unit 7 | Major radiation of fishes: Osteichthyans |
| February 3 | Unit 8 | Tetrapod origins and the invasion of land |
| February 5 | Unit 9 | Extant amphibians: Lissamphibians |
| February 10 | Unit 10 | Evolution of amniotes; Anapsids |
| February 12 | | **Midterm test (Units 1-8)** |
| February 17/19 | | **Study week** |
| February 24 | Unit 11 | Lepidosaurs |
| February 26 | Unit 12 | Mesozoic archosaurs |
| March 3 | | |
| March 5 | Unit 13 | Evolution of birds |
| March 10 | Unit 14 | Avian flight |
| March 12 | Unit 15 | Avian ecology and behaviour |
| March 17 | | |
| March 19 | Unit 16 | Rise of mammals |
| March 24 | Unit 17 | Monotremes and marsupials |
| March 26 | Unit 18 | Eutherians |
| March 31 | | **End of term test (Units 9-18)** |
| April 2 | | **No lecture** |

Winter 2014

**EVOLUTION OF VERTEBRATES – LAB OUTLINE**

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|---|---|---|
| January 8 | | **No lab** |
| January 15 | Lab 1 | Integuments and skeletons |
| January 22 | | **No lab** |
| January 29 | Lab 2 | Aquatic locomotion |
| February 5 | | **No lab** |
| February 12 | Lab 3 | Feeding: Form and function |
| February 19 | | **Study week** |
| February 26 | Lab 4 | Terrestrial locomotion |
| March 5 | | **No lab** |
| March 12 | Lab 5 | Flight |
| March 19 | | **No lab** |
| March 26 | Lab 6 | Sensory systems |
| April 2 | | **Lab exam** |

Winter 2014

**GENERAL INFORMATION AND MARKING SCHEME**


**Professor:** Dr. Janice M. Hughes
Office: CB 4052; Telephone: 343-8280
Email: janice.hughes@lakeheadu.ca

**Technologist**: Don Barnes
Office: CB 3015A; Telephone: 343-8490
Email: don barnes@lakeheadu.ca


**Suggested textbook:** Pough, F.H., C, M, Janis, and J. B. Heiser. 2008. *Vertebrate Life, 8th edition*. Prentice Hall.

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

McGowan, C. *T-rex To Go.* Harper Collins.

| | | |
|---|---|---|
| Lab assignment 1 | January 29 | 2% |
| Midterm lecture test | February 12 | 25% |
| Lab assignment 2 | February 26 | 1% |
| Lab assignment 3 | March 26 | 2% |
| Dinosaur Due | March 26 | 20% |
| End of term test | March 31 | 25% |
| Lab test | April 2 | 25% |

Bonus points will be awarded for successful completion of a dinosaur. Students may make a "research" presentation with permission of the professor in lieu of dino; however, no bonus marks will be awarded. The dinosaur is due during the March 26th lab; presentation schedule (if necessary) to be announced. Late dinos receive no bonus marks, and per diem marks may be deducted. More information will be given in class.

**Please note the following:**

1. 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.

2. 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

- 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 webpages 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.

Please see the course webpage for more useful links.