

COURSE OUTLINE

(readings from Zimmer unless noted otherwise)

Week

- 1 **The Evolution of Evolutionary theory**
3/31 - Origins – Course introduction and Overview. (Ch. 1)
4/2 - “Evolutionary” thought before Darwin. (Hutton, 1794, p. 497-506) [JKM]
- 2 **The Evolution Revolution**
4/7 - Darwin & Wallace – Origin of Species by means of Natural Selection. (Ch. 2) (readings from Darwin, Weiner) [WIA]
4/9 - The “Evolutionary Synthesis” and beyond. [WIA] [?Film]
- 3-4 **Evolution written in stone**
4/14 - Origins of Life – Geological evidence and biochemical hypotheses. (Ch. 5) (Ausich and Lane, Ch. 4) [WIA]
4/16 - Precambrian fossils, the Cambrian trickle – establishing the animal Bauplan. Ch. 3; Ausich and Lane, Chs. 8, 9) [WIA] **Bownocker Lecture**
4/21 - A Brief History of Time – plant and animal evolution over the ages [WIA]
4/23 - The brief shining moment – human evolution among the primates. (Chs. 11, 12) [JKM]
- 5 **Testing Evolution**
4/28 - Teeth, bones, angiosperms and mountains (Ch. 6) (Ausich & Lane p. 271-273)[WIA]
4/30 - **Midterm Exam**
- 6 **Nuts and Bolts**
5/5 - The genetic basis of evolution [JKM]
5/7 - Ontogeny (kind of) recapitulates phylogeny – embryological development [JKM]
Essays assigned. (Essays drawn from scientific literature in consultation with lecturers)
- 7 **Evolution meets Mathematics**
5/12 - Game theory and the origins of sex (Ch 10) [JKM]
5/14 - Computer modeling of evolutionary processes [JKM]
*Reading: *****
- 8 **Evolution and Intelligent Design**
5/19 - Evolutionary algorithms in engineering. [guest?]
5/21 - “Frankenfoods” – genetically modified plants and animals. [guest?]
*Reading: ****

9 **The Diversity of Life**

5/26 - Evolutionary ecology and co-evolution (Ch. 9) [Guest?]

5/28 - Extinction. (Ch. 7) [WIA]

*Reading: ****

***Essays due 5/28**

10 **Predicting and shaping the future.**

6/2 - It's the end of the world as we know it, and I feel fine? [JKM]

6/4 - Evolution education in k-16 classrooms (Ch. 13) [guest?]

Final Exam ** Thursday, June 11, 1:30-3:18** (Covers all work, focusing on weeks 5-10)

EVALUATION

Grades will be assigned on the basis of a midterm exam and a comprehensive final exam worth 40% each. Exams will cover both lecture material and readings on the syllabus. An assigned essay worth 20% of the total will be based on an assessment of issues in the current academic literature; it will be a minimum of six typed pages, and include at least 5 references from sources other than the regular assigned readings.

Grading percentages: Final grades will be distributed as follows: A 92-100; A- 90-91; B+ 88-89; B 82-87; B- 80-81; C+ 78-79; C 72-77; C- 70-71; D+ 68-69; D 60-67; E<60.

Disputed Term Paper Grades: In case of a dispute concerning a term paper grade, the student is encouraged to meet with the instructor to reconcile the matter. At that time, the student must present notes used in writing the paper, earlier drafts and copies of bibliographic material cited.

DISABILITY SERVICES

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; 292-3307, TDD 292-0901; <<http://www.ods.ohio-state.edu/>>.

Reading Sources and Important References for Lecture Content:

General

Ausich, W. I., and N. G. Lane. 1999. *Life of the Past*. Prentice-Hall

Hutton, J. 1794. *An Investigation of the Principles of Knowledge. And of the Progress of Reason, from Sense to Science and Philosophy.* A Stragan and T. Cadell, London.

Zimmer, C. 2006. *Evolution The Triumph of an Idea.* Harper Collins.

Natural Selection

ral Selection or the Preservation of

Favoured Races in the Struggle for Life. (Chapter 4 – Natural Selection; or the Survival of the Fittest)

Weiner, J. 1994. *The Beak of the Finch.* Vintage Books; New York, 332 p.
(Chapter 5 – A Special Providence)