

SECTION SCHEDULE

<u>Day</u>		<u>Section Topics and Assignments</u>
Jan. 27	Tues.	Introductions & administrative details (Natural Selection exercise) <i>Reading:</i> <u>Beak of the Finch</u> Chaps. 1-4 <i>Assigned:</i> Paper I
Jan 29	Thurs.	Darwin and Evolutionary Theory (Peer review of Paper #1 in class) <i>Reading:</i> <u>Beak of the Finch</u> Chaps. 5-7 <i>Assigned:</i> Writing on Fundamentals #1 <i>Due:</i> Paper #1 due for peer review.
Feb. 3	Tues.	Phylogenetic Methods (Begin projects in class) <i>Reading:</i> Be sure to have read Futuyma Phylogenetic Methods Chap. 5 as background for this exercise. <i>Assigned:</i> Group Project #1: Phylogeny Paper <i>Due:</i> <u>Writing</u> on Fundamentals I
Feb. 5	Thurs.	Uses of Phylogenies <i>Reading:</i> Lauder, G. V., R. B. Huey, R. K. Monson, and R. J. Jenson. 1995. Systematics and the study of organismal form and function. <i>BioScience</i> 45(10) 696-704.
Feb. 10	Tues.	The RNA world <i>Reading:</i> Lazcano, A. and S. Miller. 1996. The origin and early evolution of life: prebiotic chemistry, the pre-RNA world, and time. <i>Cell</i> 85:793-798.
Feb. 12	Thurs.	Trends in the Fossil Record <i>Reading:</i> Gould, S. J. 1989. The iconography of an expectation. Ch. I (pp. 23-52) in <i>Wonderful Life</i> . W. W. Norton and Company. <i>Assigned:</i> Writing on Fundamentals #2 <i>Due:</i> Group Project #1: Phylogeny paper
Feb. 17.	Tues.	Diversity, Variation and Biogeography <i>Reading:</i> McDade, L. A. 1992. Pollinator relationships, biogeography, and phylogenetics. <i>BioScience</i> 42:1-1-26. Due: <u>Writing</u> on Fundamentals #2
Feb. 19	Thurs.	Adaptation and Constraint <i>Reading:</i> Gould, S. J. and R. C. Lewontin. 1979. The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptations programme. <i>Proceedings of the Royal Society of London B</i> 205:581-598. <i>Assigned:</i> Paper #2: Critique of a paper describing an adaptation
Feb. 24	Tues.	Natural Selection I

Reading: Gould, F. 1991. The evolutionary potential of crop pests. *American Scientist* 79:496-507.

- Feb. 26 Thurs. **Natural Selection 11**
Reading: Endler, J. A. 1980. Natural selection on color patterns in *Poecilia reticulata*. *Evolution* 34:76-91.
Due: Turn in copy of the paper you intend to critique
- March 3 Tues. **The Neutral Theory**
Reading: Kimura, M. 1979. The neutral theory of molecular evolution. *Scientific American* 241(5):98-126.
- March 5 Thurs. **Genetic Drift** (Microevolution Simulation in class)
Reading: Slatkin, M. 1987. Gene flow and the Geographic structure of natural populations. *Science* 236:787-792.
Assigned: Writing, on Fundamentals #3
Due: Paper #2 Due
- March 10 Tues. **Population Structure**
Reading: Nurnberger, B. and R. G. Harrison. 1995. Spatial population whirligig beetle *Dinellitits assimilis*: evolutionary inferences based on mitochondria DNA and field data. *Evolution* 49:266-275.
- March 12 Thurs. **Experimental Evolution: integrating forces**
Reading: Travisano, M. J. A., Mongold, A. F. Bennett and R. E. Lenski. 1995. Experimental tests of the roles of adaptation, chance, and history in evolution. *Science* 267:87-90.
Assigned: Paper #3
Due: Writing- on Fundamentals #3
- March 24 Tues. **Sexual Selection**
Reading: Andrade, M. C. B. 1996. Sexual selection for male sacrifice in the Australian redback spider. *Science* 271:70-72.
AND
Kempnaers, B., G. R. Verheven, M. Van den Broeck, T. Burke, C. Van Broeckhoven and A. A. Dhondt. 1992. Extra-pair paternity results from female preference for high-quality males in the blue tit. *Nature* 357:494-496.
- March 26 Thurs. **Population Genetics** (Problem Set for Class)
No reading. Work on Population Genetics Problem Set.
- March 31 Tues. **Species Concepts** (Exercise in Class) *No reading.*
- Apr. 2 Thurs. **Speciation I**
Reading: Chandler, C. R. and M. H. Gromko. 1989. On the relationship between species concepts and speciation processes. *Systematic Zoology* 38:116-125.

Due: Paper #3

- Apr. 7 Tues. **Speciation II and Reinforcement**
Reading: R. Butlin. 1987. Speciation by reinforcement. Trends in Ecology and Evolution 2:8-13.
Assigned: Group Project #2: Research Posters.
- Apr. 9 Thurs. **Novelty and Development**
Reading: Oster, G. and P. Alberch. 1982. Evolution and bifurcation of developmental programs. Evolution 36:444-459.
Assigned: Writing on Fundamentals #4
- Apr. 14 Tues. **Punctuated Equilibrium**
Reading: Gould, S. J. and N. Eldredge. 1993. Punctuated equilibrium comes of age. Nature 366:223-227.
Due: Writing on Fundamentals #4
- Apr. 16 Thurs. **Extinction**
Reading: Raup, D. M. 1994. The role of extinction in evolution. Proceedings of the National Academy of Sciences, USA 91:6758-6763.
Dite: Posters due for Peer Review
- Apr. 21 Tues. **The Fossil Record Revisited** (Fossil walk in Fall Creek Gorge)
Reading: TBA.
- Apr. 23 Thurs. **Human Evolution**
Reading: A new approach to studying- modern human origins: hypothesis testing- with coalescence time distributions. Molecular Phylogenetics and Evolution 5:202-219.
Due: Group Project #2: Posters due in Lecture (Post in Atrium of Corson-Mudd)
- Apr. 28 Tues. **Evolution and Medicine**
Reading: Nesse, R. M. and G. C. Williams. 1995. The evolution of medicine. Ch. 15 in Why We Get Sick. Vintage Books.
AND
Bull, J. J. 1994. Perspective: Virulence. Evolution 48:1423- 1437.
- Apr. 30 Thurs. **Evolution and Conservation**
Reading: Erwin, T. L. 1991. An evolutionary basis for conservation strategies. Science 253:750-752.
AND
Avisé, J. C. 1989. A role for molecular genetics in the recognition and conservation of endangered species. Trends in Ecology and Evolution 4:279-281.
Assigned: Writing on Fundamentals #4 (This will be due the Tues. of Finals Week. (May 12)).