

**TENTATIVE SYLLABUS FOR BIOLOGY 213 (EVOLUTION) 4 Units**  
**Winter 2000 CRN 13112**  
**CLASS MEETS 2:00 PM - 3:50 PM MONDAYS & WEDNESDAYS IN 3-120**

| <b>WEEK AND DATE</b> | <b>LECTURE TOPIC</b>   | <b>CD &amp; Read Chapters in Ridley</b>                            |
|----------------------|--|--|
| 01 M 03 Jan          | Intro, epistemology, history, time scales  |  |
| W 05 Jan             | Fossils  | CD: Morris & Kirschner videos + CD Timeline + Ch. 1, 19            |
| 02 M 10 Jan          | Dating and evidence  | 3  |
| W 12 Jan             | Human Evolution (lecture, slides, start video)                                     |  |
| 03 M 17 Jan          | ===== <b>H O L I D A Y</b> =====   |  |
| W 19 Jan             | Human Evolution (finish video)   |  |
| 04 M 24 Jan          | genetics review  | 2  |
| W 26 Jan             | <b><u>TEST 1 -- <math>\frac{1}{3}</math> of GRADE</u></b>                          |  |
| 05 M 31 Jan          | Variation, Natural Selection   | 4, 5, 6, + skim & read summary of 7, + CD virt. expts*             |
| W 02 Feb             | Evolutionary Genetics  |  |
| 06 M 07 Feb          | Quantitative traits, heritability, genome evolution                                | 9, 10  |
| W 09 Feb             | Analysis of Adaptation, units of selection   | CD: Partridge video + Ch. 11, 12                                   |
| 07 M 14 Feb          | Adaptive Explanation   | CD: Lewontin & Hamilton videos + Gould & Lewontin article + Ch. 13 |
| W 16 Feb             | Species and speciation, Review   | 15, 16 + CD: Coyne & Orr article                                   |
| 08 M 21 Feb          | <b><u>TEST 2 -- <math>\frac{1}{3}</math> of Grade</u></b>                          |  |
| W 23 Feb             | Classification, Evolution, Cladograms  | 14   |
| 09 M 28 Feb          | Evolutionary biogeography  | 18   |
| W 01 Mar             | Rates of evolution; macroevolution   | 20, 21   |
| 10 M 06 Mar          | Coevolution and species selection  | 22   |
| W 08 Mar             | Extinction and mass extinction   | CD: Cronin & Dawkins videos 23                                     |
| 11 M 13 Mar          | <b><u>FINAL EXAM -- 1:40 PM - 3:40 PM -- <math>\frac{1}{3}</math> OF GRADE</u></b> |  |

\* For the CD Virtual Experiments, do each experiment with high and low values of the experimental parameter. Summarize the differences between the outcomes with the high and low values in 2-3 sentences, so you know the results of the experiments when you are asked on the tests.

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**TENTATIVE SYLLABUS FOR BIO 213 Winter 2000**  
**ADDITIONAL COURSE INFORMATION**

**OBJECTIVES:** The main objective of this course is to give you a solid understanding of the modern study of evolution in living organisms. In addition, the course will introduce you to the fundamentals of evolutionary genetics, adaptation and natural selection, classification and phylogenetics, paleobiology and macroevolution. Although non-majors may take the course, this is the evolution course for students majoring in biology, zoology and botany.

**INSTRUCTOR:** Dr. Stephen H. Bryant Bldg. 8 - Room 9 (office); Room 16 (lab). Phone: 869-4094. Office Hours: M: 4:00 - 4:50, MW: 10:00 - 10:50, and TR: 10:00 - 10:50, or by appointment. If I'm not in my office during office hours, check my lab (8-16). Email address is [shbryant@csupomona.edu](mailto:shbryant@csupomona.edu). [I prefer email to voice mail, and you'll get a faster response therefrom.](#)

**REQUIRED MATERIALS:**

**TEXT:** Ridley, Mark. 1997 (the book says 1996, but it wasn't really published until 1997). *Evolution, 2nd ed.* Boston: Blackwell Scientific Publications. This is the second edition of a fairly new comprehensive text on evolution. Ridley's book is well-illustrated, straightforward to read, and gives a good general overview of the types of evolutionary research being conducted at this time (along with the standard classical examples). It is important that you read the whole book, as assigned, for I will lecture mainly on the topics that Ridley covers less thoroughly. Tests, however, will cover the reading, CD-ROM material, and lecture material. Also do the tutorials for each assigned chapter from the CD-ROM.

**CALCULATOR:** Bring a calculator with you to tests; any calculator with a square root key will do; you can use as fancy a calculator as you want. If your calculator has a memory, you must clear the memory before starting the test.

**PREREQUISITES:** Introductory college biology. Your introductory biology course should have given you the fundamentals of genetics, evolution, ecology and classification necessary for this course. In addition, I assume you have had the equivalent of intermediate algebra (which is a prerequisite for admission to Cal Poly) and can solve simple algebraic equations and work with graphs of various sorts.

**EXAMS:** Two midterm exams and a final will be given; each counts  $\frac{1}{3}$  of your grade. Exams will be closed book, and consist of a mix of question types, and may include objective, short answer, problems, essay etc. About a third to a half of the points on each exam will be over material covered by the assigned reading which is NOT covered in lecture. Bring your student ID to each test; instructor may check IDs. Students not having proper ID may have their tests invalidated. **WARNING: You MAY NOT take the final exam at any time other than the scheduled time (even if it is the middle final of the day for you).**

**GRADING:** Grading will be done more or less on a curve. Instructor will post on the web a histogram of test scores and the grading scale for each exam. The grading will be no more stringent than 90% = A; 80% = B; 70% = C, 60% = D. Thus, it is possible for every student to earn an "A".

**WEB MATERIALS:** Lecture notes are available from my web site, which contains previous tests and more information on evolution, including a copy of this syllabus. The URL for the class web site is <http://www.csupomona.edu/~shbryant/213.htm>. Download **and install** the Adobe Acrobat viewer as instructed to view the documents.

**ACADEMIC INTEGRITY:** See the statement on academic integrity in the 1999-2001 Cal Poly Catalog on page 49. (Also available at [http://www.csupomona.edu/~academic/catalog99-01/05\\_Admissions.pdf](http://www.csupomona.edu/~academic/catalog99-01/05_Admissions.pdf) — Acrobat page 31, catalog page 49) I will follow University Policy and "... report each instance of academic dishonesty to the Director of Judicial Affairs and Student Development."

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