

**TENTATIVE SYLLABUS FOR BIOLOGY 213 (EVOLUTION) 4 Units**  
**SECTION 1 Fall 1997**  
**CLASS MEETS 1:00 PM - 2:50 PM TUESDAYS & THURSDAYS IN 3-120**

<b><u>WEEK AND DATE</u></b>	<b><u>LECTURE TOPIC</u></b>	<b><u>CD Tutorial &amp; Reading: Chapters in Ridley</u></b>
1 Th 25 Sep	Intro, epistemology. hist. of evol. theory	1
	Geological Time Scales & dating	CD Timeline & Chap. 19
2 Tu 30 Sep	Fossils	CD: Morris & Kirschner videos 19
Th 02 Oct	Evidence for organic evolution - preDarwin & Darwin	3
3 Tu 07 Oct	Human Evolution	
Th 09 Oct	Human Evolution	
4 Tu 14 Oct	Review of Mendelian Genetics (optional review session 5:30-6:30 in 3-113)	2
Th 16 Oct	<b><u>TEST 1 -- 25% of GRADE (50 min. testing time only!)</u></b> Variation and Natural Selection	4, 5
5 Tu 21 Oct	Microevolutionary Genetics	6, skim + read summary in 7, CD virt. expts
Th 23 Oct	Quantitative traits, heritability, genome evolution	9, 10
6 Tu 28 Oct	Analysis of Adaptation, units of selection	CD: Partridge video 11, 12
Th 30 Oct	Adaptive Explanation	CD: Lewontin & Hamilton videos + Gould & Lewontin article + Chapter 13
7 Tu 04 Nov	Species and speciation (opt. rev. session 5:30 - 6:30 in 3-113)	15, 16
Th 06 Nov	<b><u>TEST 2 -- 25% of GRADE (50 min. testing time only!)</u></b> Speciation	CD: Coyne & Orr article
8 Tu 11 Nov	Classification and Evolution	14
Th 13 Nov	Cladograms and their construction	handout
9 Tu 18 Nov	Evolutionary biogeography	18
Th 20 Nov	Rates of evolution; macroevolution	20, 21
10 Tu 25 Nov	Coevolution and species selection	22
Th 27 Nov	-----HOLIDAY --- NO CLASSES-----	
11 Tu 02 Dec	Extinction and mass extinction	23
Th 04 Dec	Catch-up & review session	CD: Cronin & Dawkins videos
12 Th 11 Dec	<b><u>FINAL EXAM -- 11:30 PM - 1:30 PM -- 50 % OF GRADE</u></b>	

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### **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.

**INSTRUCTOR:** Dr. Stephen H. Bryant Bldg. 8 - Room 9 (office); Room 16 (lab). Phone: 869-4094. Office Hours: M 3-5 PM, Tu&Th 3-4 PM, W 1-3 PM or by appointment. If I'm not in my office during office hours, check my lab (8-16). Email address is SHBRYANT@CSUPOMONA.EDU. I prefer email to voice mail.

**EXCEPTIONS:** You will need to SIGN UP for an appointment to see me from 24 Oct - 06 Nov. This is due to the heavy demand on my time during this period of academic advising.

#### **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 a brand-new 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 both the reading and lecture material in approximately equal proportions. 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.

**PREREQUISITE:** Biology 100, 115/L or equivalent. Your basic 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 college algebra, and can solve simple algebraic equations and work with graphs of various sorts.

**EXAMS:** Two hourly exams and a final will be given. The final will consist of two parts: the first hour will be equivalent to a third hourly exam; the second hour will be comprehensive and cover all course material equally. Each hourly will count 100 points; the final will count 200 points. Exams will be closed book. Exam will consist of a mix of question types, some objective, some short answer, some problems, some essay etc. About half of the points on each exam will be for 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. Students who miss an exam for documented, University-approved reasons may be required to take a make-up exam, which may be an oral exam. Students who miss an exam for other reasons may not get credit for the missed exam. **WARNING: You MAY NOT take the final exam at any time other than the scheduled time.**

**GRADING:** Grading will be done more or less on a curve. Instructor will supply statistics of exam scores. 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". NOTE: If you wish your final grade mailed to you, bring a self-addressed, stamped envelope (the bookstore has grade mailing envelopes, if you wish to buy one) to the final. Grades will probably be posted outside the instructor's office by the Wednesday following finals week. Unless arranged differently by the student, exam scores and grades will be posted by the last 4 digits of each student's identification number.

**PROBLEMS:** From time to time, I may provide you with practice problems on the quantitative material of the course. These problems will provide you with the practice necessary to do better on exams. I highly suggest you work the problems — when I solve a problem in class, it may look easy, but that is because I have practiced the problem many times before. You haven't. You should: so work the practice problems. Tests from a previous class will be available at my web site and maybe at a campus copy center.

**WEB MATERIALS:** Lecture notes will be available from my web site, which contains previous tests and more information on evolution, including a copy of this syllabus. The URL is <http://www.csupomona.edu/~shbryant>. From there, go to Classes Taught, and then to Bio 213. A viewer for the lecture notes and tests should be available about the end of September.

**REVIEW SESSIONS:** There will be optional review sessions as indicated on the front of the syllabus.

**ACADEMIC INTEGRITY:** See the statement on academic integrity in the 1997-99 Cal Poly Catalog on page 49. (Also available at <http://www.csupomona.edu/academic/catalog97-99/> under "General Information" -- Acrobat page 29, catalog page 49)

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