

COURSE SYLLABUS for BIO 461 – Introductory Evolutionary Biology
3 credit hours; Spring 2008

Important Note: This syllabus is subject to change at the discretion of the instructor

INSTRUCTOR: Jerry L. Cook
Lee Drain Building 300A
Phone: 294-1538 email: bio_jlc@shsu.edu
Office Hours: 10:00—11:00 MTWThF or by appointment

LOCATION & TIME: LDB 220, MWF 11:00 a.m. – 12:00 p.m.

EVALUATION:	3 Lecture Exams @ 100 pts	300 pts
	Comprehensive Final	200 pts
	Writing assignment	100 pts
	TOTAL POSSIBLE POINTS	600 PTS

GRADING: A = 540+ B = 480-539 C = 420-479 D = 360-419 F < 360

REQUIRED TEXT:

Futuyma, D. J. 2005. *Evolution*, Sinauer

COURSE CONTENT:

Evolution is the core theory of modern biology. Students will be introduced to the major principles of evolutionary biology, beginning with a brief history of evolutionary thought and working through the theory and current concepts of evolution. Emphasis will be placed on mechanisms of evolution, including natural selection, genetic drift, gene flow, founder effect, and speciation.

COURSE OBJECTIVES:

To learn and understand the principles of evolution through acquisition of: 1) a basic working vocabulary, 2) the knowledge of the theories and principles, and 3) the intellectual tools that allow students to apply facts and concepts to novel situations.

PREPARATION AND EXPECTATIONS:

You are expected to attend all lecture sessions. Evolution is an advanced course that will demand careful preparation and study, and as such, good attendance is absolutely essential for success in meeting the basic requirements in the course. Further, the lectures are drawn from a wide variety of sources including the primary literature. I will periodically provide you with reading from the literature. All material in the textbook chapters as well as additional reading assignments are fair game for exams. It will make your life much easier if you read the appropriate chapters in your text before coming to class. Because of the quantity of material we cover in this class, it will be to your advantage to keep up on your readings.

LECTURE EXAMS

There will be three exams during the semester (100 points each) and a comprehensive final exam (200 points) given during the regularly scheduled time. Exams will assess your understanding of the factual material as well as your ability to understand meaning and context and to synthesize information from more than one lecture. Exams will typically consist of definitions and concepts, short answer and essays. Please note, you will only have the regularly scheduled class time to complete exams.

MAKE UP POLICY:

No make-up exams will be given without written notification **prior to the exam** by the student and approval from the instructor.

RESEARCH PAPER (100 points):

At this point in your biology education you should have a pretty good idea “what you want to be when you grow up”. At the very least you should, by now, have a favorite group of organisms. Your options for this writing assignment are thus:

1. Write about your chosen career from an evolutionary perspective (i.e. how does evolutionary theory inform and/or impact decisions made in this field?)
2. Write about the evolution of your favorite group of organisms.

Please adhere to the following guidelines when preparing your paper.

- ◆ Your paper should be 7 – 10 pages long and can include no more than two full pages of illustrations. Typing is to be double spaced with one inch margins in an easily readable 12 point font (Arial or Times New Roman are best).
- ◆ One half to a full page should be an introduction. One half page should be a statement or analysis of the major questions or problems associated with the topic. Three to five pages should consist of observations or evidence that have bearing on the questions or problems you’ve raised, and the remainder should concern the significance of the work you’ve discussed.
- ◆ You must cite a minimum of 8 references you used to obtain information for your paper. Do not cite web sites as references. They are not peer reviewed and do not constitute a valid scientific source. Journal articles and Books are valid resources
- ◆ I would recommend scheduling a conference with me sometime before the first due date to discuss your choice of topics, particularly if you are having difficulties locating appropriate references.
- ◆ Grading will be according to the following:
 - Outline & List of References (due Feb. 22) 10 points
 - Rough Draft (due Mar 31) 20 points
 - Final Draft (due Apr. 28)
 - Compliance with format 15 points
 - Adequacy of reference material and figures 20 points
 - Biological validity 20 points
 - Preparation quality 15 points

Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. *See Student Syllabus Guidelines.*

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided they do not disturb other students in the process.

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines.*

Students with Disabilities Policy: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should visit with the Office of Services for Students with Disabilities located in the Counseling Center. *See Student Syllabus Guidelines.*

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar’s Office.

TENTATIVE LECTURE SCHEDULE*

Date	Topic	Chapter
Jan. 16	Course Introduction; What is Evolution?	1
18 & 23	Historical Framework for Evolutionary Biology	1
25 & 28	Phylogeny as framework for inferring history	2
30	Patterns of Evolution	3
Feb. 1	Evolution in the fossil record	4
4 & 6	A BRIEF history of life on Earth	5
8 & 11	Biogeography and Evolution	6
13 & 15	Evolution of Biodiversity	7
18	Exam 1	
20 & 22	Origin of genetic variation	8
25, 27, 29	Variation	9
Mar. 3 & 5	Genetic Drift	10
7	Natural selection and adaptation	11
10 – 14	<i>Spring Break Holiday</i>	
17	Natural selection and adaptation	11
19 & 24	Genetics and Natural Selection	12
26	Exam 2	
28 & 31	Evolution of phenotypic traits	13
Apr. 2 & 4	Species Concepts	15
7 & 9	Modes of speciation	16
11 & 14	Evolutionary Fitness	17
16	Coevolution	18
18 & 21	Molecular Evolution	19
23 & 25	Evolution and Development	20
28 & 30	Macroevolution	21
May 2	Exam 3	
5 & 7	Course wrap up and review for final	
	Final exam at University specified time	

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