

**Molecular Ecology - BIOLOGY 473**  
**Fall 2008 - Drs. Sergio Escorza Trevino & Elizabeth Torres**  
**LECTURE: MW 11:40 - 1:20 PM = BIOS-244 = CALL # 14788-01**

**COURSE DESCRIPTION:** Applications of molecular tools to the study of ecology and evolution. Includes techniques, analytical methods, and case studies in conservation genetics, population genetics, and ecology.

**LECTURE SCHEDULE:**

Date	Lecture	Reading Assignment
Mon. Sept. 22	Introduction	Ch 1
Wed. Sept. 24	Molecular Markers 1	Ch 2
Mon. Sept. 29	Molecular Markers II <b>P1</b>	Ch 2
Wed. Oct. 1	Genetic Diversity <b>Q1</b>	Ch 3
Mon. Oct. 6	Population Genetics I <b>Q2</b>	Ch 4
Wed. Oct. 8	Population Genetics II <b>P2</b>	Ch 4
Mon. Oct. 13	<b>MIDTERM I</b>	
Wed. Oct. 15	Molecular Systematics I <b>Q3</b>	Journal Article
Mon. Oct. 20	Molecular Systematics II <b>P3</b>	Journal Article
Wed. Oct. 22	Phylogeography I <b>Q4</b>	Ch 5
Mon. Oct. 27	Phylogeography II	Ch 5
Wed. Oct. 29	Species Identification	Journal Article
Mon. Nov. 3	Behavioral Ecology <b>P4</b>	Ch 6
Wed. Nov. 5	Conservation Genetics I <b>Q5</b>	Ch 7
Mon. Nov 10	<b>MIDTERM II</b>	
Wed. Nov. 12	Conservation Genetics II <b>P5</b>	Ch 7
Mon. Nov. 17	Conservation Genetics III	Ch 7
Wed. Nov. 19	Ancient DNA Studies	Journal Article
Mon. Nov. 24	Applications I	Ch 8
Wed. Nov. 26	Applications II	Ch 8
Mon. Dec. 1	<b>FINAL EXAM 10:45 am -1:15 pm</b>	

**TEXTBOOK:** *Molecular Ecology*, 1st Edition, Joanna Freeland, 2006  
*Fall Quarter, 2008 Schedule of Classes* - University Policies on Cheating and Plagiarism

**COURSE PREREQUISITE:**  
 Completion of Biology 360 (General Ecology) or equivalent.

**OFFICE HOURS AND CONTACT INFO:**

**Dr. Elizabeth Torres:** M 2-3pm; W 1:30-2:30pm

La Kretz Hall 313; *Biology Office:* (323) 343-2050

*Fax:* (323) 343-6451; *e-mail:* [etorre11@calstatela.edu](mailto:etorre11@calstatela.edu)

Please do not leave phone messages for Dr. Torres at her personal extension.

**Dr. Escorza-Trevino:** W 14:30-15:30, Th 12:00-13:00, or by appointment

La Kretz Hall 309;

*Fax:* (323) 343-6451; *e-mail:* [sescorz@calstatela.edu](mailto:sescorz@calstatela.edu)

**COURSE REQUIREMENTS (400 pts.):**

2 Midterms (100 points each) = 200 points

5 Quizzes (5 points each)= Q1-Q5 = 25 points

5 "One Minute" Papers (5 points each) = P1-P5 = 25 points

1 Final Exam (50 points cumulative; 100 points new material only) = 150 points

**GRADING FORMAT:**

A = 94 - 100 %, A- = 90 - 93.9 %, B+ = 87 - 89.9 %, B = 83 - 86.9%, B- = 80 - 82.9 %, C+ = 77 - 79.9 %, C= 72 - 76.9 %, C- = 70 - 71.9 %, D+ = 67 - 69.9 %, D = 62 - 66.9 %, D- = 58 - 61.9 %, F = <58%.

**COURSE OBJECTIVES:**

Students will gain a detailed understanding of a) methodology; b) how molecular studies can lead to a better understanding of the earth's biodiversity; c) application of molecular methods in population ecology, conservation biology, and evolutionary biology; d) how molecular methods can recover information from fossils and museum specimens.

**ACADEMIC HONESTY:**

Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at

<http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>. Students are also expected to read pages 125-128 in the Fall 2008 Schedule of Classes. Copying other students' work will result in very grave consequences and sanctions.

Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation.

**EXAM FORMAT:**

The midterms and final will have a similar format, and will include some "objective" questions (multiple choice, matching, label diagrams, fill in the blank.), quantitative

problems, short answers (1-2 sentences), and short essay questions (1-2 paragraphs). Exam questions will be based on material covered in lectures, projects, and course readings. Five lecture quizzes will be based assigned readings; five short answer questions will be based on lecture material in the form of “one-minute Papers”. Some one-minute papers may be open book, so you should bring your book and a calculator to class. The final exam will contain 50 points of cumulative material and 100 points of new material.

There are NO MAKE-UPS if you miss quizzes or “one minute papers”, without written medical excuse. MAKE-UP exams will only be given with an official notice from a doctor in the case of illness. Cell phones, text messaging, and video games will not be permitted in lecture. You may find it useful to bring your textbook and a calculator to class. Assignments must be turned in during class and will not be accepted by email. Students are expected to have web and email access outside of the classroom. The syllabus, lectures, course announcements and assignments will be posted on the class website (webCT). Student grades will be posted and maintained on webCT. All students are required to register for the course on webCT. Two projects will be web based and will require access to web based materials.