

**BIO 187B Special Topics in Biology
Molecular Ecology**

Course Overview and Requirements

Instructor: Cheryl Baduini, PhD

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e-mail: **Please post e-mails to Course WebCT page**

Overview: This course will focus on the use of molecular techniques in answering ecological questions. The emphasis will be placed on using genetic data to determine population structure and gene flow. The course will have a seminar format where students will **ACTIVELY** participate and present topics and review the primary literature. Also, we will conduct a few labs where we employ the molecular techniques discussed in the lecture. The lab will also focus on how one acquires information from the NCBI (National Center for Biotechnology Information) GenBank database, <http://www.ncbi.nlm.nih.gov/Genbank/index.html>, established in 1988 as a national resource for molecular biology information to aid in the analysis of DNA sequences and creation of phylogenetic trees. Additionally, the lab will cover how the use of computer software to align DNA sequences, analyze genetic data, and create phylogenetic trees. The course will close with independent student project proposals that outline the use of a molecular technique that answers an ecological question of interest.

Textbook: Molecular Markers, Natural History, and Evolution (2004)

Second Edition by John Avise, Sinauer Associates, Inc. ISBN 0-87893-041-8

Course Packet: Journal Articles from the primary literature and handouts from books

Course Web CT: BIO 187B Molecular Ecology

Please enroll yourself by the end of this week (Fri. 3 Sept.)

Please post general messages to the Bulletin Board and I will answer

Please post e-mail to account in Web CT page/I will check at least one time per day

You will need to have Adobe Acrobat Reader installed to review lecture notes and files in Web CT

Grading:

Student Presentations 35% of final grade (175 points)

Lab Write-Ups Lab 1 10% ,(50 points) Lab 2-20% (100 points) (30% of final grade)

FINAL Project Proposal 35% of final grade (175 points)

Student Presentations:

Student presentations are expected to be given in a formal and professional manner. You are expected to be prepared and organized. I provide suggestions and materials to help facilitate your presentation, but you are highly encouraged to do some research on the topic individually and to present the material in class. You are expected to present graphs, figures, or tables that help demonstrate the points you are trying to make. You may use overheads and/or Powerpoint to make your presentation. Please let me know if you need overhead sheets.

Half of your presentation grade will be assigned by the instructor

Half of your presentation grade will be assigned by the class average

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Class Proposal:

You will be responsible for completing a class proposal due during finals week at the end of the semester. Your proposal outline will have an **abstract, introduction, hypotheses, methods, and justification, and literature cited section**. You will also create a time budget for this proposal. You may use this opportunity to write a proposal for your senior thesis project if you have a molecular component to your thesis. **I am willing to read and edit your proposals no less than 10 days prior to the due date.**

Class Attendance:

Since there are so few of us in the course, **class attendance is absolutely essential** in order to have a successful course. Secondly, you must come prepared and have read the material ahead of time for us to have a **productive and engaging** discussion.