Texas A&M University - Corpus Christi

SYLLABUS

BIOL 5371 – Evolutionary Genetics

(3 Credits)

Fall 2008

Class Meetings: Lecture: TR 12:30-1:45PM

Instructor: Dr. R. Deborah Overath
Office: ST 312
Lab: CS 241
Phone: Office: 825-2467
Home: 334-7366 (until 10 PM only)
Cell: 876-4542 (until 10 PM only)
E-mail: deborah.overath@tamucc.edu

Office Hours: [Subject to change pending advance notice]

Please note that you are welcome to come by my office or lab at anytime, though you may wish to call first. I will be glad to help you if I am not busy. I may be in lab on Fridays. I also post my schedule on my office door and on WebCT, so you can see when I am likely to be in my office.

Text:

Plus articles from classic and new papers from the literature. Articles from the recent literature will be chosen based on areas of interest of the participants.

Course Description:
An advanced course on evolutionary processes and their genetic basis, focusing on theoretical and experimental approaches to the study of population genetics, quantitative genetics, evolutionary ecology, and molecular evolution. This course meets three hours per week for traditional lectures and two hours per week for recitation. Recitation activities consist of one hour student-led discussions of the literature and one hour of problem-solving or computer modeling per week.

Prerequisites:
Required: Undergraduate genetics course, a college level course in statistics or math
Preferred: One year of calculus

Student Learning Outcomes:
1. Understand the evolutionary forces and their effects on populations.
2. Understand applications of modern techniques to the study of populations and their evolution
3. Understand the applications of mathematics and computer modeling in evolutionary genetics
4. Knowledge and critical review of the literature of evolutionary genetics
5. Synthesize information in the area of evolutionary genetics
**Course Topics:**
Discussion and synthesis of the theoretical and empirical approaches to studying the following topics: genetic variation, Hardy-Weinberg Law, linkage and disequilibrium, natural selection, mutation, genetic drift, inbreeding, gene flow, molecular evolution, frequency- and density-dependent selection, and quantitative genetics.

**Instructional Methods and Activities:**
Traditional lectures, including powerpoint presentations in lecture part of course. Problem sessions, student-led discussion of literature, and computer modeling in recitation part of course. Students will also be required to write critical summaries and discussion questions for the papers on which they lead a discussion.

**Evaluation and Grade Assignment:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Tentative Percentage of Grade*</th>
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<tbody>
<tr>
<td>Problem sets</td>
<td>20%</td>
</tr>
<tr>
<td>In-class Mid-Term Exam</td>
<td>30%</td>
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<tr>
<td>Literature summaries and Discussion participation</td>
<td>20%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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*These may be adjusted somewhat based on the actual number of assignments.

A 10-point grading scale will be used: A = 90 - 100 %, B = 80 - 89.9 %, C = 70 - 79.9 %, D = 60 - 69.9 %, F = 0 - 59.9 %

NOTE: The final comprehensive exam may include a take-home portion that involves the synthesis of ideas from the lectures and the literature readings.

**Attendance and Other Course Policies:**
Students are required to attend all class meetings. Participation in recitation discussions is an integral part of the course. Attendance is the student’s responsibility. You are responsible for the material covered in every lecture even if it is not in the book, regardless of your attendance. **Nothing** missed during an **un**excused absence can be made up. An excused absence allows us to make alternative arrangements to complete an assignment. Only **unavoidable** absences are excused. Routine events (non-emergency medical visits, parent-teacher conferences, household or auto repairs) should be scheduled to avoid conflicts with class. Plane tickets booked to conflict with class do NOT constitute an excusable absence. An acceptable excuse **must** be:
- from an appropriate source (doctor, dentist, funeral director) who states the nature of the event
- in writing, on official letterhead, and signed (it will not be returned)
- **presented prior to, or within 1 week of the absence**
- **Include the specific dates for which the excuse applies**

The documentation required for an absence to be excused must meet the above criteria and **will be scrutinized**. This policy also applies to students participating in University-sanctioned activities (such as athletics); however, in such cases, arrangements must be made at least one week ahead of time, and excuses may also be documented via a letter or memo on official university letterhead by the supervising coach or faculty member. This policy is used in all Professional Skills sections because participation is an important part of the learning process in this course.

**There are No make-up examinations or assignments:** For some scheduled events, you may arrange to turn in an assignment before, but not after, its scheduled time.

**Academic Honesty:**
Academic dishonesty, in all its forms, including plagiarism, is not tolerated. Students found responsible for violating this rule will be prosecuted to the fullest extent of University Regulations (see the current TAMU-CC catalog).
Special Needs:
The university complies with the American with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you need disability accommodations in this class, please see the instructor as soon as possible and present the accommodation letter from TAMU-CC Services for Students with Disabilities Office. If you suspect that you may have a disability, please contact the Services for Students with Disabilities Office at 825-5816.

University Email Accounts:
*When communicating via email, ALL STUDENTS SHOULD USE THEIR TAMU-CC (islander) account.* Your instructors will not discuss grades and related info via email unless the message originates from your islander account. Information for using and setting up this account can be found at [https://islander.tamucc.edu/cgi-bin/cgiwrap/sammgr/newpassword.cgi](https://islander.tamucc.edu/cgi-bin/cgiwrap/sammgr/newpassword.cgi). If you run into difficulties that are not being resolved by the student computer help desk, please contact Dr. Overath ASAP.

**TENTATIVE SCHEDULE**

Please note that this schedule is subject to change. Changes will be announced in class. It is your responsibility to attend class and be aware of changes.

**General Disclaimer:**

The Instructor reserves the right to modify the schedules and policies in this syllabus if and when necessary. Such changes will be announced during regularly scheduled lecture periods, but no attempt will be made to contact students who were absent when an announcement was made. Nevertheless, all students are responsible for abiding by all announced changes, and it is a student’s responsibility to obtain this information. Changes will be announced in a timely manner, but be aware that some modifications may be implemented without prior warning.

**Tentative Class Schedule**

To Be Provided on WebCT. Important Dates listed below:

**Mid-Term Exam:** Thursday, October 9, 2008

**Final Exam:** Tuesday, December 16, 2008 11AM-1:30PM