

# **Species and Speciation**

## **Special Topics in Ecology and Evolution**

### **Lecturer**

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**BIOL 7010—prerequisite: Acceptance into the graduate program in biology or permission of the instructor.** In-depth analysis of a current issues in ecology and evolution requiring student presentations and extensive background reading. The specific topic with ecology and evolution class will change each time the course is offered. The course may be taken one additional time for credit with the permission of the instructor.

| <b>Schedule, Spring 2014</b> |                                     |             |                   |
|------------------------------|-------------------------------------|-------------|-------------------|
| <b>Course</b>                | <b>Name &amp; Room</b>              | <b>Days</b> | <b>Times</b>      |
| BIOL 7010                    | Species and Speciation, BSC Rm 2023 | W           | 06:00 pm-07:50 pm |

### **Course Objectives**

- Develop a higher level of appreciation and understanding for the complexity of what is and is not a species.
- Develop an understanding of the evolutionary processes that are involved in speciation.
- Develop an appreciation for biological factors that control or delimit a species or in other cases fail to do so.
- Develop an appreciation for understanding the concept of a species as it relates to research.

### **Topics**

The following topics will not necessarily be discussed in the order below. Topics will include both plant and animal examples as well as discussion of principles and concepts involved in speciation.

- Species Concepts
- Speciation: Laws, Mechanisms and Processes
- Evolution and Reproductive Isolation
- Genomic Mechanisms of Incompatibility
- Unisexual Species—General
- Parthenogenic Species
- Gynogenic Species
- Unisexual—Bisexual Species
- Evolution and Phylogeography

- Species Complexes and Polyspecies
- Cryptic Species and Sibling Species
- Intraspecific Hybridization: Genetic Strains and Distinct Populations
- Interspecific Hybridization

## **Format**

Students will read primary/original literature and/or reviews on the above topics prior to coming to class. Each student will present summaries of specific assigned papers to include discussion of their relationships to previously read articles. After presentations, the class will engage in group discussions on the specific papers and topics assigned for each class period.

Active participation of all students is expected at each class session. See more below.

## **Presentations, Participation and Examinations**

A key element of this course is not only learning what a species is and what speciation processes are via reading primary literature, but also engaging in discussions with others in the sciences, in this case class members, so as to delve into the subject matter and determine its strengths, weaknesses and needs for additional research. As such during class, I will monitor each student's participation and assess whether or not each student is contributing to the overall discussion and analyses of the papers being read and presented.

Semester tests will be primarily short to moderate length essays. The final will be essay and fill-in-the blank questions and will be comprehensive.

Tests will be given twice during the regular semester and announced at least one week in advance. The final is on May 2014.

**Grading** is as follows:

(Presentations & participation X 0.3) + (Test 1 X 0.3) + (Final X 0.4) = Final Grade

**Test dates:**

- Test 1 12 March 2014
- Final 7 May 2014, 5 pm

## **General Information**

**Disabled Students:** Students requiring classroom accommodations or modifications because of documented disabilities should discuss their needs with me at the beginning of the semester. Students requesting classroom accommodations or modifications because of a documented disability must contact the Access Office for Students with Disabilities

located in room 1115 Nevins Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

Student Access Office web page: <http://www.valdosta.edu/access/index.shtml>

**Buckley Amendment or Privacy Act:** It is illegal to release to others personal information about an individual. Therefore, grades, averages, and other personal information about an individual will not be released to anyone but that individual, posted, sent by e-mail or given over the phone.

**Class Attendance and Behavior:** While class attendance is not formally taken each period, I will note when individuals are absent, and if absences are excessive I reserve the right to administratively drop a student from the course. It is your responsibility to attend class regularly, arrive on time and get the notes and assignments as presented in class.

Cell phone use in class is not permitted, and they must be turned off.

### **Important Dates Fall 2010**

- 20 January MLK Day. No classes
- 28 February Midterm. Last day to drop classes\*
- 17-21 March Spring Break. No classes.

\* No one will be dropped after the last drop date unless there are extenuating circumstances beyond your control.

**Note**— Generally, I will be available before class for consultation. Other times can be arranged by appointment or you can take your chances and just drop by to see if I am in the office. My teaching schedule is next to the door of my office. I frequently have meetings in the afternoon so this time period will not be a good time for you to try and see me. Please do not call me at home. As a field biologist, I spend certain amounts of time in the field collecting data. This fall I will often be in the field on Tuesday and Thursday. Once I leave the office and go home, my life belongs to my family (to include the 2 dogs, 2 cats and 50 turtles) and me.