

California State University, Fullerton  
Department of Biological Science  
Biology 314 Evolutionary Ecology  
Fall 2004

**MEETING PLACE AND TIME: SLC 268 T TH 1-2:15 pm**

Instructor: Sean Walker

Office: MH 389, Lab MH 342

Office Hours: TR 2:30-4:30 PM, M 9:00-10:00 AM & by appointment

Phone: (Office) 278-3610, (Lab) 278-8204

Email: [swalker@fullerton.edu](mailto:swalker@fullerton.edu)

Web-Site: <http://biology.fullerton.edu/swalker>

Course Web Site: The course web-site will be on blackboard. You should be able to access it through <http://my.fullerton.edu> and follow the links to blackboard then to Biol 314.

**Course Description:** In this course you will be introduced to current topics and the basic concepts involved in evolutionary ecology. Evolutionary ecology integrates the principles of evolutionary biology, ecology and genetics and includes topics such as population genetics, patterns of genetic and phenotypic variation, evolution of life-histories, behavioral ecology.

**Required Text:**

Krohne, David T. 2001. General Ecology. 2<sup>nd</sup> Ed. Brooks/Cole.

**Assignments and Course Grades**

**Email Assignment (2%)**

It is critical that I know the e-mail address that you actually use. This will facilitate rapid communication between myself and the class. In addition, there are two questions I'd like you to answer when you send me the email.

- 1) What is a question about evolution you'd like to see addressed in this course?
- 2) What is a question about ecology you'd like to see addressed in this course?
- 3) What is your favorite organism?

**Problem Sets (10%)**

Throughout the semester there will be assignments/problems sets that are to be completed outside of class. In all likelihood there will be two of these that will each count 5%. One on population genetics and one calculating demographic parameters from a life-table.

**Essays (20%)**

You will be responsible for writing a summary of two different papers from the primary literature that were published in the last 2 years dealing with evolutionary ecology. The objective of this assignment is for you to 1) gain an appreciation of the diversity of evolutionary and ecological research, 2) critically read and evaluate primary literature and, 3) search and use databases to locate primary literature on a specific topic.

**How to find a paper**

Utilize the search tools in the library (<http://library.fullerton.edu>). In particular, use the databases for biological science (<http://www.library.fullerton.edu/Research/StarGuide.asp?ScopeID=6>) and search for topics that you are interested in. Databases that are very useful include: Web of Science, Biological and Agricultural Index, Zoological Record, and Basic Biosis. Alternatively, you can look through journals that may contain evolutionary ecology research.

**Examples of Journal Titles That Contain Evolutionary Ecology Research**

Animal Behaviour, Behavioral Ecology, Biological Journal of the Linnean Society, Ecology, Evolution, Evolutionary Ecology, Evolutionary Ecology Research, Functional Ecology, Journal of Animal Ecology, Zoological Journal of the Linnean Society.

**What to write about**

I expect you to summarize the key findings of the article. What was the question/hypothesis? What methods were used? What were the results? What were the really important conclusions? **Also, I expect you to propose one future research hypothesis based on the results from the paper and at least one criticism of the paper.**

**What to turn in**

- 1) your summary paper
- 2) a copy of the article

**Exams (68%)**

We will have two mid-terms and a final. Each mid-term is worth 20% of your grade and the final is worth 28% of your grade. Each mid-term will cover a given set of material but the final will be comprehensive. The exams will likely contain a combination of fill in the blank and matching, short essays, and longer essays that require integration and analysis of the material. PLEASE NOTE: A LARGE PERCENTAGE

OF THE POINTS ON A GIVEN EXAM WILL BE SHORT AND LONG ESSAY QUESTIONS.

**Grades will be assigned based on the following scale:**

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

### Tentative Course Schedule

Week		Topic	Readings	Assignments Due
1	8-24 8-26	Introduction to the science of ecology	Krohne Ch 1	
2	8-31 9-2	Abiotic Factors and Limits	Krohne Ch 3	E-mail Assignment DUE
3	9-7 9-9	Fundamentals of Population Genetics	Krohne Ch 2 pp 17-21	
4	9-14 9-16	Mechanisms of Evolution/ Principles of Natural Selection	Krohne Ch 2. Pp, 21-33	
5	9-21 9-23	Interactions Between Species/Intraspecific Variation	Krohne Ch 2 pp. 34-43; Ch 6	<b>Population Genetic Problem Set Due</b>
6	9-28 9-30	Demography <b>Midterm I</b>	Krohne Ch 4 pp. 79-100	
7	10-5 10-7	Population Regulation	Krohne Ch 5	
8	10-12 10-14	Intraspecific variation, phenotypic plasticity, genes & environment	Krohne Ch 6	
9	10-19 10-21	Life-History Evolution & Sexual Reproduction	Krohne Ch 7	
10	10-26 10-28	Behavioral Ecology	Krohne Ch 8	<b>First Summary DUE</b>
11	11-2 11-4	Competition	Krohne Ch 9	
12	11-9 11-11	Predation-Prey and Predator Adaptations <b>Midterm II</b>	Krohne Ch 10 pp. 246-256	

Week		Topic	Readings	Assignments Due
13	11-16 11-18	Predation	Krohne Ch 10 pp. 257-264	<b>Life Table Due</b>
14	11-23 11-25	<b>NO CLASSES-FALL BREAK</b>		
15	11-30 12-2	Community Structure	Krohne Ch 11	
16	12-7 12-9	Species Diversity	Krohne Ch 12	<b>Second Summary Due</b>
17	12-14	<b>Final Exam, 12:00-13:50</b>		

### Course Policies

#### Prerequisites

Enrollment in Biol 314 requires completion of the Biology lower division core (Biol 171, 172, 273, & 274).

#### Attendance

Students are expected to attend and participate in lectures, laboratories and mandatory field trips. If you miss class **YOU ARE RESPONSIBLE** for obtaining the information from classmates **NOT** from the graduate assistant or instructor.

#### Exam, Lab and Assignment Make Up Policy

If you cannot take a test at the scheduled time, you should contact Sean (Dr. Walker) as soon as possible with appropriate documentation verifying the circumstances. **PLEASE NOTE** make ups will only be given in the case of documented emergencies or unavoidable conflicts (these must be approved by Sean in advance). Please note, it is **YOUR RESPONSIBILITY** to contact Sean regarding make up assignments, labs, or exams.

#### Late Assignments

Late work will have 10% of the maximum points for that assignment deducted per day that it is late (weekends count). If there are exceptional circumstances the assignment may be given full credit.

#### Academic Integrity

I take all issues regarding academic honesty very seriously. **ALL WORK HANDED IN SHOULD BE YOUR OWN.** Incidents of cheating, turning in work that is not your own or is cited improperly (plagiarism) will result in a zero grade for the first incident and a zero grade for the course on the second incident. If plagiarism is suspected you may be asked to submit an electronic version of the assignment in question for checking with one of the available anti-plagiarism software packages. All incidences of academic dishonesty will be reported to the Associate Dean of Student Affairs.

**Withdrawal from courses:** CSUF policy regarding withdrawal from classes (UPS 300.016) will be followed. After the first two weeks of the semester, students may be granted withdrawal **ONLY** by presenting compelling evidence outlining a physical, medical, or emotional condition that prevents completion of the course. **POOR ACADEMIC PERFORMANCE IS NOT EVIDENCE OF A SERIOUS REASON FOR WITHDRAWAL.** Students unable to produce official documentation will be required to take the grade they have earned in the class. Please refer to the course schedule for information on the last day to withdraw with a W grade. Important dates concerning registration or drops are on the inside cover of the CSUF **Fall 2004** Class Schedule or at:  
[http://www.fullerton.edu/admissions/policy\\_and\\_deadline\\_information\\_.htm](http://www.fullerton.edu/admissions/policy_and_deadline_information_.htm).

### **CLASSROOM SAFETY BRIEFING**

- In the event of an emergency such as earthquake or fire:
  - Take all your personal belongings and leave the classroom (or lab). Use the stairways located at the east, west, or center of the building.
  - Do not use the elevator. They may not be working once the alarm sounds.
  - Go to the lawn area towards Nutwood Avenue. Stay with class members for further instruction.
  - For additional information on exits, fire alarms and telephones, **Building Evacuation Maps** are located near each elevator.
  - Anyone who may have difficulty evacuating the building, please see me after class.
- Dial 911 on any campus phone, pay phone, or blue emergency phones to connect directly to University Police. Dialing 911 on your cell phone will connect with the Highway Patrol. Tell CHP dispatcher that CSUF Police are the responding agency. Stay on the line until asked to hang up.
- If you want to bring visitors to the classroom, you must obtain permission from the instructor in advance and must sign a volunteer form.
- Visitors to the lab must obtain permission from the Chair and must sign a volunteer form.
- There is no smoking within 20 feet of every campus building. This includes the MH balcony.
- **FOR LAB CLASSES:** Specific hazards or risks in the lab will be discussed prior to each experiment. If you have any questions about the safety of an experiment, please contact me or the lab instructor.
  - If there is a spill of a hazardous chemical, notify your TA immediately.
  - Report all injuries to me or the TA immediately.
  - All students must read and sign the departmental, "Laboratory safety procedures" form at the beginning of each semester.
- **FOR CLASSES WITH FIELD TRIPS:**

- Make sure you submit an Academic Field Trip Waiver and sign the Participant List for each field trip.
- Students must comply with all State laws regarding possession, sale and use of alcohol or controlled substances while participating in CSUF related activities.