

**Department of Biology  
Evolution (002:131)  
Spring 2013**

<b>Instructors:</b>	Dr. Josep Comeron 212 Biology Building BB ph: 335-0628 josep-comeron@uiowa.edu	Dr. Maurine Neiman 324A BB ph: 384-1814 maurine-neiman@uiowa.edu
<b>Office Hours:</b>	Mon 3P-5P, Wed 2P-3P	Mon 9A-11A, Wed 2P-3P
<b>TAs:</b>	Elizabeth Savelkoul 303 BB elizabeth-savelkoul@uiowa.edu	Emily Koury 224 BB emily-koury@uiowa.edu
<b>Office Hours:</b>	Mon 2:30-3P, Wed 12:30-2P	Mon, Wed, Friday 9-10 AM
<b>Course Supervisor:</b>	Josep Comeron	
<b>Department Chair (DEO):</b>	Dr. Bernd Frittsch, 143 Biology Building, 319-335-1054	

**Goals and Objectives of the Course:** The goal of the course is to provide the student with a solid understanding of the principles of Evolutionary Biology. You will be presented the underlying theoretical framework and methodological approaches of evolutionary analysis within the context of major findings in the discipline. Course materials set the foundation for mastering the following learning objectives:

- Comprehending the scientific method, including the design and interpretation of evolutionary experiments.
- Understanding forms of genetic and phenotypic variation and the forces affecting both short-term and long-term consequences.
- Interpreting relationships among organisms and understanding biotic and abiotic factors affecting past and future biological diversification.

Throughout the course we will follow the major themes presented in the assigned textbook as well as additional topics to emphasize certain points. Some of the material in the course comes from our own research programs, which we view as bridging the gap between education and research in the classroom and at the university.

**Feedback during lecture is appreciated, so please ask questions.** Students in the class arrive with a diversity of backgrounds, and if something is unclear, then ask. It really is up to you to master the material presented in the course, so be active in your education. Seek assistance from the instructors and teaching assistants when needed. We will do our best to facilitate your learning the material and we hope you find the subject matter intellectually stimulating, entertaining and enjoyable.

**Grading Procedures:** The course grade is based on three mid-term exams and a final exam (20% each exam), and an assessment of performance in the workshop (20%). Letter grades, using the plus/minus system, will be assigned based on the distribution of the class. If you are concerned about your letter grade, talk to an instructor.

**Exam Dates:**

1-	Thursday, Feb. 14	6:30-8:00 pm, 101 BBE
2-	Thursday, March 14	6:30-8:00 pm, 101 BBE
3-	Thursday, April 18	6:30-8:00 pm, 101 BBE
Final-	TBA	

**Policies on attendance, tardiness, assignments, and exams:**

- If you have a university-approved excuse for missing an exam, contact the instructor *prior* to the time of the exam. You will need documentation indicating why you are unable to take the exam at the scheduled time. Registration for another course whose lectures are given at the same time as the lectures in this course will *not* be accepted as a reason for scheduling a make-up exam for this course.

- If an exam is missed and approval is granted for taking a make-up, you must schedule and take a makeup exam within one week of the scheduled exam. The exam may differ in format from the scheduled exam. Discussing the content of the scheduled exam with other students prior to taking the make-up is considered cheating.
- Each exam is closed book and students caught cheating will be given a zero for that exam. Incidents of cheating are reported to the Office of Academic Affairs; students involved in cheating incur other penalties from that office (See "Academic Misconduct", below)
- You will be able to review your graded exam during the workshop. If you have a problem with the grading of your exam, you can request a review of the grade by indicating it to TA, returning the exam to the TA and either write your specific concerns or visit the instructor during office hours.
- Weekly workshop attendance is required. It is your responsibility to sign the attendance sheet and you should be sure to do so as this verifies your presence. If you must miss your scheduled time for workshop, arrange an alternative time with your TA.

**While lecture attendance will not be monitored each meeting, infrequent checks of class attendance including quizzes may be used to assign bonus points to your overall course average. We view attendance and active engagement in lectures as a critical component of mastering the course material. You should arrive prepared, pay attention, take notes, and ask questions. Some aspects of the lecture notes will be posted on the web; however, these are designed to facilitate your listening to the lecture and taking notes, but they do not substitute for attendance**

**Lectures:** 11:30AM - 12:20PM MWF 101 BBE  
**Attendance required.**

**Workshop:**

Section A01: Tuesday, 8:30-10:15 AM	106 BBE (TA Elizabeth Savelkoul)
Section A02: Tuesday, 10:30 AM-12:15 PM	106 BBE (TA Elizabeth Savelkoul)
Section A03: Tuesday, 1:30-3:15 PM	106 BB (TA Emily Koury)
Section A04: Thursday, 10:30 AM-12:15 PM	106 BB (TA Emily Koury)

**Weekly workshop attendance required**

**Course Webpage:** ICON: 002:131:AAA Spr13 Evolution

**Course Material:** **Futuyma, Douglas J. 2009. *Evolution*, 2<sup>th</sup> ed. Sinauer Associates.**  
(Can be purchased at Iowa Book as well as online).  
This text provides an excellent overview of most of the topics covered in the lectures. The chapter of the text corresponding to each lecture topic is provided in the schedule. This material should be read prior to lecture. It is, however, not the most comprehensive text in evolutionary biology, so you may want to examine other texts if you are looking for a reference to help you grasp concepts presented in lecture.

**Weiner, Jonathan. 1995. *The Beak of the Finch*, Vintage.**  
(Can be purchased at Iowa Book as well as online).  
This Pulitzer-prize winning book will be used in Workshop discussion sessions.

- Recording of lectures, audio and/or video, *is not allowed* unless with the explicit approval of the instructor. If pertinent, see policy on Accommodations for Disabilities.
- Individual instructors will inform students of policies for lectures during class; departmental and collegiate policies included after the lecture schedule.

**Lecture Schedule** (subject to change. See ICON website for updates)

<u>Lecture</u>	<u>Instructor</u>	<u>Month</u>	<u>Date</u>	<u>Day</u>	<u>Subject</u>	
1	JC	January	23	W	Introduction—Evolution	Ch. 1
2	JC		25	F	Darwinian Natural Selection	pp. 279-285; 294-301
3	JC		28	M	Origin of Genetic Variation	pp. 190-198; 206-213
4	JC		30	W	Detecting & Quantifying Variation	pp. 229-232
5	JC	February	1	F	Hardy-Weinberg Equilibrium	pp. 220-225
6	JC		4	M	Violations of HWE (I)	pp. 225-229; 255-260, 303-316
7	JC		6	W	Violations of HWE (II)	pp. 225-229; 255-260, 303-316
8	JC		8	F	Genetic Drift	pp. 260-266
9	JC		11	M	Mutation-Drift Equilibrium and Evolution	pp. 255-273; 322-325
10	JC		13	W	Review	

**Exam 1, Thursday February 14 6:30-8:30 pm (101 BBE), lectures 1-9**

11	MN		15	F	Fitness	pp. 283, 305-308
12	MN		18	M	Consequences of Small Population Size	pp. 255-266
13	MN		20	W	Genotype-Phenotype Relationships	pp. 215-220
14	MN		22	F	Quantitative Genetics	pp. 232-237; 338-347; 357-360
15	MN		25	M	Heritability & Selection	pp. 237-241; 338-347; 357-360
16	MN		27	W	Types of Selection	pp. 347-351
17	MN	March	1	F	Constraints and Adaptation I	pp. 352-356; 362-365
18	MN		4	M	Constraints and Adaptation II	pp. 352-356; 362-365
19	MN		6	W	Sex and Recombination I	pp. 387-391
20	MN		8	F	Sex and Recombination II	pp. 387-391
21	MN		11	M	Sexual Selection	pp. 397-406
22	MN		13	W	Review	

**Exam 2, Thursday March 14 6:30-8:30 pm (101 BBE), lectures 11-21**

23	JC		15	F	Neutral Theory of Molecular Evolution	pp. 255-273; 322-325
<b>Spring Break</b>						
24	JC		25	M	Molecular Clock	pp. 33-35; 267-269
25	JC		27	W	Molecular Distances	pp. 33-35; 267-269
26	JC		29	F	Phylogenetics	pp. 17-31
27	JC	April	1	M	Speciation: Concepts & Patterns	pp. 445-455
28	JC		3	W	Speciation: Mechanisms and Genetics	pp. 458-477; 480-490
29	JC		5	F	Detecting Selection: Polymorphism	pp. 325-333
30	JC		8	M	Detecting Selection: Divergence	pp. 325-333
31	JC		10	W	Linkage Disequilibrium and Selection	pp. 233-236; 330-332
32	JC		12	F	Natural Selection and Humans	
33	JC		15	M	Gene Duplication	pp. 67-69; 543-550
34	JC		17	W	Review	

**Exam 3, Thursday April 18 6:30-8:30 pm (101 BBE), lectures 23-33**

35	MN		19	F	Sexual Conflict	pp. 406-409
36	MN		22	M	Mating Systems	pp. 393-395
37	MN		24	W	Parental Investment	pp. 381- 383, 424-427
38	MN		26	F	Cooperation, Altruism, & Group Selection I	Ch. 16
39	Mn		29	M	Cooperation, Altruism, & Group Selection II	Ch. 16
40	MN	May	1	W	Evolution of Disease	pp. 510-513, 624-627
41	MN		3	F	Human origins/evolution I	pp. 77-98, 629-631
42	MN		6	M	Human origins/evolution II	pp. 77-98, 629-631
43	MN		8	W	Evolution as Curriculum	Ch. 23
44	MN		10	F	Review	

**Exam 4, week May 13-16 (101 BBE), lectures 35-43**

Instructors: JC, Dr. Josep Comeron  
MN, Dr. Maurine Neiman

**Academic Misconduct:**

The College of Liberal Arts and Sciences considers academic fraud, dishonesty, and cheating serious academic misconduct. All students suffer when academic misconduct takes place. Academic fraud, dishonesty, and cheating disturb the mutual respect that should exist between instructors and students and among students, and can poison the atmosphere of a classroom. Perhaps most seriously, those who commit academic fraud, dishonesty, or cheating are robbed of the educational experiences that are the primary purpose of course work in the College of Liberal Arts and Sciences. We expect instructors to help students understand and avoid all academic fraud.

If you are unclear about the proper use and citation of sources, or the details and guidelines for any assignment, you should discuss the assignment and your questions with the instructor. All forms of plagiarism and any other activities that result in a student presenting work that is not really his or her own are considered academic fraud. Academic fraud includes these and other misrepresentations:

- presentation of ideas from any sources you do not credit;
- the use of direct quotations without quotation marks and without credit to the source;
- paraphrasing information and ideas from sources without credit to the source;
- failure to provide adequate citations for material obtained through electronic research
- downloading and submitting work from electronic databases without citation;
- participation in a group project which presents plagiarized materials;
- taking credit as part of a group without participating as required in the work of the group;
- submitting material created/written by someone else as one's own, including purchased term/research papers

Academic fraud in this course also includes submitting or presenting your own material for credit/grade if it was already used for grade in other courses, unless with the specific permission of the course supervisor previous to its submission/presentation.

Cheating on examinations and other work also interferes with your own education as well as the education of others in your classes. If you are unclear about the guidelines for any testing situation or assignment, you should discuss your questions with the instructor. Academic cheating includes all of the following, and any other activities that give a student an unfair advantage in course work.

- copying from someone else's exam, homework, or laboratory work;
- allowing someone to copy or submit your work as his/her own;
- accepting credit for a group project without doing your share;
- submitting the same paper in more than one course without the approval of the instructors involved;
- using notes, text messaging, cell phone calls, pre-programmed formulae in calculators, or other materials during a test or exam without authorization;
- not following the guidelines specified by the instructor for a "take home" test or exam.

When an instructor in the College of Liberal Arts and Sciences suspects a student of academic fraud or cheating these procedures will be followed:

- The instructor (or supervisor, if the instructor is a teaching assistant) must inform the student--in a printed letter--as soon as possible after the incident has been observed or discovered.
- If the instructor comes to the conclusion that the student academic fraud or cheating has occurred, he or she (in consultation with the supervisor if the instructor is a teaching assistant) will determine what action to take. The instructor may decide to reduce the student's grade on the assignment or activity, or in the course, or even to assign an F for the assignment or activity or for the course
- The instructor will send a written report of the case to the Associate Dean for Academic Programs and send copies of the report to the DEO and to the student(s) involved
- The associate dean for academic programs will impose the following or other penalties: disciplinary warning until graduation (usually for a first offense); suspension from the college for a calendar year or longer (usually for a second offense); or recommendation of expulsion from the University by the president (usually for a third offense).

If a student believes that the finding of academic fraud or cheating is in error or the penalty unjust, he or she may request information on appeal procedures from CLAS Academic Programs & Services, 120 Schaeffer Hall.

## **IMPORTANT POLICIES OF THE COLLEGE OF LIBERAL ARTS AND SCIENCES**

### **Academic Fraud**

Plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. Academic fraud is reported to the departmental DEO and then to the Associate Dean for Academic Programs and Services in the College of Liberal Arts and Sciences. <http://www.clas.uiowa.edu/students/handbook/x/#2>

### **Making a Suggestion or a Complaint**

Students have the right to make suggestions or complaints and should visit with the instructor, then with the course supervisor if necessary, and finally with the departmental DEO. All complaints must be made within six months of the incident. [www.clas.uiowa.edu/students/academic\\_handbook/ix.shtml#5](http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5)

### **Accommodations for Disabilities**

A students seeking academic accommodations first must register with Student Disability Services and then meet with a SDS counselor who determines eligibility for services. A student approved for accommodations should meet privately with the course instructor to arrange particular accommodations [www.uiowa.edu/~sds/](http://www.uiowa.edu/~sds/)

### **Understanding Sexual Harassment**

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit [www.sexualharassment.uiowa.edu/](http://www.sexualharassment.uiowa.edu/) for definitions, assistance, and the full University policy.

### **Administrative Home of the Course**

The administrative home of this course is the College of Liberal Arts and Sciences, which governs academic matters such as the add / drop deadlines, the second-grade-only option, academic fraud, academic probation, and how credits are applied for various CLAS requirements. Please keep in mind that different colleges have different policies. If you have questions about these or other CLAS policies, visit your advisor or 120 Schaeffer Hall and speak with the staff. The CLAS Academic Handbook is another useful source of information on policy: [www.clas.uiowa.edu/students](http://www.clas.uiowa.edu/students)

### **Reacting Safely to Severe Weather**

The University of Iowa Operations Manual section [16.14](#) outlines appropriate responses to a tornado (i) or to a similar crisis. If a tornado or other severe weather is indicated by the UI outdoor [warning system](#), members of the class should seek shelter in rooms and corridors in the innermost part of a building at the lowest level, staying clear of windows, corridors with windows, or large free-standing expanses such as auditoriums and cafeterias. The class will resume, if possible, after the UI outdoor warning system announces that the severe weather threat has ended.