



## **BISC180Lxg: Evolution**

**Section: 13400R**

**4 units**

**Monday, Wednesday, Friday 10:00-10:50**

**Location: [Zumberge Hall](#) (ZHS) 352**

**Instructor: Cameron Egan, Ph.D. (he/him/his)**

**Office: [Hancock Foundation Building](#) (AHF) 141**

**Office Hours: TBD (and by appointment)**

- Office hours are open for drop-ins and dedicated entirely to you. During these hours I sit and excitedly wait for you to come to chat about evolution (or anything you want really)! Official office hour times will be posted to Blackboard at the beginning of term.
- I also have availability outside of my scheduled office hours. Please contact me via email to set up an appointment.

**Contact Info:** [camegan@usc.edu](mailto:camegan@usc.edu)

### **Course Description**

Evolution is the unifying principle of all biology, but the importance of its study is not restricted to biologists. Understanding evolution is of paramount importance to comprehending the “why” and “how” of the natural world (including us). This course provides students from all disciplines with an understanding of evolution as both a pattern and a process. The course will help prepare students to think critically about a wide range of everyday issues including environmental and human health, and the origin of human society.

### **Learning Objectives**

At the end of the course, you will be able to:

- Demonstrate knowledge of the origins of hereditary variations.
- Demonstrate knowledge of the relationships among processes of change and time.
- Demonstrate knowledge of processes of microevolution, mutation, genetic drift, and natural selection.
- Demonstrate knowledge of processes that influence diversity in molecular, anatomical, and behavioral characteristics of organisms.
- Demonstrate knowledge of the relationship between population genetics and evolution.
- Demonstrate knowledge of the concept of speciation and of the factors that may contribute to the development of new species.
- Demonstrate knowledge of macroevolution and of the major factors affecting it.
- Demonstrate knowledge of the origin and development of early life on Earth.
- Demonstrate knowledge of hominid evolution.
- Demonstrate knowledge of the history of evolutionary thinking and the evidence for evolution.

**Laboratory Times and Location:**

Monday, Wednesday, or Friday; 12:00-1:50 pm [Zumberge Hall](#) (ZHS) 460

**Laboratory Description**

Students will meet weekly (unless otherwise noted) in their designated laboratory sections. Labs are dedicated times for students to critically evaluate different aspects of evolution through an inquiry-based approach.

The last two lab classes of the semester will be devoted to student presentations on topics of the students' choice related to evolution and aimed at a general (non-academic) audience. Detailed instructions and guidelines, including deadlines for topic submission will be posted to Blackboard.

**Website:** <https://blackboard.usc.edu/>

Blackboard will be your home base for this course! Please check frequently for announcements and course materials including lecture notes, quizzes, additional/supplemental readings, and grades.

**Required Texts**

- Lecture: Evolution, 5th edition, by Futuyama and Kirkpatrick
- Laboratory: Labs will be posted as PDF files on Blackboard

**Evaluation Criteria and Grading**

<b>Lecture Quizzes:</b>	There will be 5 multiple choice quizzes to be completed on Blackboard during the semester. The quizzes will be posted at the beginning of the week on Monday, 9 am and will remain available until 9 pm Friday. Quizzes will be announced in lecture and on Blackboard.
<b>Exams:</b>	The lecture portion of this course will include one midterm examination and a final examination. All examinations (midterms and final) may include multiple choice questions, fill in the blanks, matching, definitions, short answers, and quantitative problems. The final exam is non-cumulative.
<b>Laboratory:</b>	Your laboratory score will be assessed within your respective laboratory section. Attendance to laboratory sessions is <b>mandatory</b> except for in the case of emergency or extreme circumstances. An acceptable written excuse for missing a lab must be proactively provided to your lab instructor.
<b>Grading:</b>	Your final grade in the course will be determined using the breakdown shown in Table 1 below. Grades will be updated continuously throughout the term as assessments are completed.

**Table 1.** Grading Breakdown

The course grade will be based upon 500 possible points:

Assessment	Points	% of Grade
Midterm Exam (March 4)	125	25%
Final Exam (TBD)	125	25%
Oral Presentation Project	50	10%
Laboratory Assignments	150	30%
Lecture Quizzes	50	10%
<b>TOTAL</b>	<b>500</b>	<b>100</b>

**Grading Scale**

Course final grades will be determined using the following scale:

A	90.1 - 100
A-	86.7 - 90
B+	83.3 - 86.6
B	80 – 83.2
B-	76.7 – 79.9
C+	73.3 – 76.6
C	70 – 73.2
C-	66.7 – 69.9
D+	63.3 – 66.6
D	60 – 63.2
D-	56.7 – 59.9
F	≤56.6

**Tentative Lecture Schedule**

Following is a tentative schedule of topics for the term which may subject to modification dependent on time and learning needs.

Day	Date	Deliverables	Class Topic	Readings/Preparation
Mon	08-Jan		Introduction to Course and how to be successful in the course	No Readings
Wed	10-Jan		History of Evolutionary Biology	Ch 1.2-1.5
Fri	12-Jan		History of Evolutionary Biology	Ch 1.6-1.8
Mon	15-Jan		<b>No Class - Martin Luther King Jr Day</b>	<b>No Readings</b>
Wed	17-Jan		Phylogenetic Trees	Ch 2.1-2.2
Fri	19-Jan		Phylogenetic Trees	Ch 2.3-2.4
Mon	22-Jan		Methodologies in Phylogeny	Ch 16.1-16.3
Wed	24-Jan		Methodologies in Phylogeny	Ch 16.4-16.5
Fri	26-Jan	Quiz 1	Natural Selection and Adaptation	Ch 3.1-3.3
Mon	29-Jan		Natural Selection and Adaptation	Ch 3.4-3.7
Wed	31-Jan		Mutation and Variation	Ch 4.1-4.3
Fri	02-Feb		Mutation and Variation	Ch 4.4-4.6

Mon	05-Feb		Genetical Theory of Natural Selection	Ch 5.1-5.3
Wed	07-Feb		Genetical Theory of Natural Selection	Ch 5.4-5.6
Fri	09-Feb	Quiz 2	Genetical Theory of Natural Selection	Ch 5.7-5.8
Mon	12-Feb		Genetic Drift	Ch 6.1-6.3
Wed	14-Feb		Genetic Drift	Ch 6.4-6.7
Fri	16-Feb		Evolution of Quantitative Traits	Ch 7.1-7.3
Mon	19-Feb		<b>No Class - President's Day</b>	<b>No Readings</b>
Wed	21-Feb		Evolution of Quantitative Traits	Ch 7.4-7.6
Fri	23-Feb	Quiz 3	Evolution of Quantitative Traits	Ch 7.7-7.8
Mon	26-Feb		Evolution in Space	Ch 8.1-8.3
Wed	28-Feb		Evolution in Space	Ch 8.4-8.6
Fri	01-Mar		<b>Review/Flex Day</b>	<b>No Readings</b>
Mon	04-Mar	Midterm 1	<b>Midterm</b>	<b>No Readings</b>
Wed	06-Mar		Species and Speciation	Ch 9.1-9.2
Fri	08-Mar		Species and Speciation	Ch 9.3-9.4
Mon	11-Mar			
Wed	13-Mar		<b>No Class - Spring Recess</b>	
Fri	15-Mar			
Mon	18-Mar		Species and Speciation	Ch 9.5-9.6
Wed	20-Mar		Macroevolution	Ch 19.1-19.3
Fri	22-Mar		Macroevolution	Ch 19.4-19.6
Mon	25-Mar		Sex and Sexual Selection	Ch 12.1-12.4
Wed	27-Mar		Sex and Sexual Selection	Ch 12.5-12.7
Fri	29-Mar	Quiz 4	Cooperation and Conflict	Ch 13.1-13.3
Mon	01-Apr		<b>No Class - Easter Monday</b>	<b>No Readings</b>
Wed	03-Apr		Cooperation and Conflict	Ch 13.4-13.6
Fri	05-Apr		Evolutionary Ecology - How to be Fit	Ch 14.1-14.3
Mon	08-Apr		Evolutionary Ecology - How to be Fit	Ch 14.4-14.5
Wed	10-Apr		Evolutionary Ecology - Species Interactions	Ch 15.1-Ch15.3
Fri	12-Apr		Evolutionary Ecology - Species Interactions	Ch 15.4.15.5
Mon	15-Apr		Early History of Life on Earth	Ch 17.1-17.3
Wed	17-Apr		A Brief History of Animal Evolution	Ch 17.4-17.7
Fri	19-Apr	Quiz 5	Evolution of <i>Homo sapiens</i>	Ch 20.1-20.3
Mon	22-Apr		Evolution of <i>Homo sapiens</i>	Ch 20.4-20.5
Wed	24-Apr		Evolution of <i>Homo sapiens</i>	Ch 20.6-20.7
Fri	26-Apr		Evolution and Society	Ch 21.1-21.3

### Course Specific Policies

Communication – I am here to support you in your learning and want you to be in contact with me as much as possible. The best way to reach me is by email. In your communication, please be sure to include the course in the subject line (**BISC180**) so I will be better suited to respond to your email. I do my best to respond to emails within 24hr (during the week) and on Monday if your email is sent over the weekend. If it has been more than 24hrs please send me a gentle reminder.

Policy on Re-grading Exams – If you feel that an error was made in the grading of an exam, please use the following steps: 1) Double check the posted answer key and think critically about the responses provided, 2) Prepare a **written statement** explaining why you feel your grade was incorrect which includes references of lecture material. Submit the request along with your original exam to your professor within one week of the time the exam was returned to you. The entire exam will be subject to a re-grade and, as a result, your grade may increase or decrease from a requested re-grade.

Policy on Missed Exams – Exam dates are firm and there are no make-up exams given in this course. You may be excused from the midterm exam in the event of a documented illness, emergency, or other extreme circumstance beyond your control. No other excuses for missing exams will be accepted. Please be pro-active with your request by sending an email to instructor requesting that you be excused. If you miss the midterm exam, your exam grade will be provided on a pro-rated based upon your score in the final exam.

**If you miss the final exam** and have provided a valid medical excuse within 48 hours of the exam time, a final course grade of Incomplete (IN) will be recorded and you will be permitted to take a make-up final exam during the following semester.

Policy on Missed Lecture Quizzes – **No make-up lecture quizzes will be given in this course.** You may be excused from a lecture quiz only in the event of a documented illness.

Policy on Late Work – Late laboratory assignments will be penalized by a 10% reduction in the assignment grade every 24 hours late unless due to an emergency situation excused by the instructor. Email the instructor as soon as possible to discuss alternate arrangements due to an emergency.

Extra Credit – **No extra credit will be given** for special projects, etc.

Impairments Affecting Your Performance – Students occasionally encounter difficulties that affect their academic performance, such as illness, accidents, bereavement, depression, anxiety, learning disabilities, and other problems. If you encounter such difficulties, please bring them to the attention of one of the instructors. We can refer you to resources and may be able to offer accommodation. All such discussions will be confidential. Please seek help as soon as you feel your performance is being affected.

### Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

### **Course Evaluations**

Course Evaluations will be conducted towards the end of the semester and will appear in the 'Course Evaluations' tab on the Blackboard. It is an important review of your experience in the class with the intent being for you to provide feedback on my teaching practice. Please take the time to complete these evaluations as I use these to help improve/strengthen my teaching. I welcome all constructive feedback!

### **Statement on Academic Conduct and Support Systems**

#### **Academic Integrity:**

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, compromises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

**Students and Disability Accommodations:**

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [osas.usc.edu](https://osas.usc.edu). You may contact OSAS at (213) 740-0776 or via email at [osasfrontdesk@usc.edu](mailto:osasfrontdesk@usc.edu).

**Support Systems:**

[Learning Support & Resources](#) - You are part of a learning community made up of faculty, staff, and fellow students. Follow the link to find resources to help support your academic growth and success!

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or [otfp@med.usc.edu](mailto:otfp@med.usc.edu)

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.