

BISC 120Lg 13003 Lecture Syllabus, SPRING 2025

General Biology: Organismal Biology and Evolution

Overview:

This 4-unit biology course will present several key topics in evolution, ecology, environment, and the diversity of life. These topics will be covered in two weekly lectures and one weekly laboratory section.

Learning Objectives:

At the end of the course, students will:

- know the concept of the scientific method
- understand how the scientific method is applied to key questions regarding the nature of life on Earth
- know the mechanisms of heredity
- know the theory of evolution
- understand how evolution explains the diversity of life on Earth
- know the defining characteristics of the domains Archaea, Bacteria, and Eukarya, with special attention to plants, fungi, and animals
- understand how the environment and organisms contribute to the evolution of ecological relationships
- understand how the environment has changed and continues to change and how this affects the evolution of life on Earth
- be able to design and conduct scientific investigations
- be able to think critically about how experimental evidence answers a scientific question • be able to perform biological laboratory techniques

Course Instructor: Dr. Raffaella Ghittoni, ZHS 256, 213-740-8352, rghitton@usc.edu

Lab Manager: Brett Spatola, PhD, ZHS 362, 213-740-6078, spatola@usc.edu

Textbooks:
a) Lecture
Campbell Biology 11th ed. (Mastering Biology™ is optional)
b) Laboratory
BISC 120 Laboratory Manual, (PDF posted on Brightspace)

Website: <https://brightspace.usc.edu>
(site for course materials, lecture notes, quizzes, additional readings, grades etc.)

Lecture times: TUE/THU 2:00 - 3:20 PM in **ZHS 159**

Laboratory times: THU at 8:00 AM, THU at 11:00 AM, THU at 5:00 PM, FRI at 8:00 AM, FRI at 11:00 AM and FRI at 2:00 PM in **ZHS 365**

Office Hours: TBA

Lecture Quizzes: There will be 12 multiple choice quizzes (each worth 5 points) to be completed on Brightspace during the semester. The quizzes will be posted at 6:00 PM on Thursdays and will remain available until 9:00 AM the following Monday. Answers to quiz questions will be posted on Monday afternoons.

Exams: The lecture portion of this course will include four exams – three midterm exams and a final exam. All exams (midterms and final) may include multiple choice questions, matching, fill in the blank answers, definitions, short answers and quantitative problems.

To be assigned a final letter grade at the end of the course, **a student must take at least two mid-term lecture examinations and the final examination and have completed at least 80% of the assigned weekly laboratory activities.**

Any document associated with grading may be photocopied by the instructional staff.

Grading: After each exam, grade point cut-offs will be released. There is not an absolute number of points that predetermines a letter grade of A, A-, B+, B, B-, etc. If the class average is lower than 80% at the end of the semester, the grades for the course will be assigned on a curve, determined by the total number of points as given below.

The point system will total **1000 points**, as follows:

Midterm Exam 1	150
Midterm Exam 2	150
Midterm Exam 3	150
Final Exam (Midterm 4)	150
Lecture Quizzes (12)	60
Laboratory Assignments	340

Schedule of lecture topics (subject to modification of specific topics and reading assignments*)

Day	Quiz	Topic	Content
T Jan 14		1 Introduction; Biological Variation	Course Syllabus; 1.1, 1.2, 6.2,
TH Jan 16		2 Genetic Material and Expression	12.1, 13.1, 13.2, 16.1, 17.1
T Jan 21		3 Mendelian Inheritance	13.3, 13.4, all 14
TH Jan 23	Quiz 1	4 Molecular Basis of Inheritance	15
T Jan 28		5 Descent with Modification	22
TH Jan 30	Quiz 2	6 Evolutionary Mechanisms	23 and 25.6
T Feb 4		7 Speciation	24
TH Feb 6	Quiz 3	8 Macroevolution	25.5-25.6
T Feb 11		MIDTERM 1	
TH Feb 13	Quiz 4	9 The History of Life on Earth	25.1-4
T Feb 18		10 Phylogeny and the Tree of Life	26
TH Feb 20	Quiz 5	11 Viruses	19
T Feb 25		12 Prokaryotes: Structure/Function/Diversity	27
TH Feb 27	Quiz 6	13 Eukaryotes: Endosymbiosis	28.1
T Mar 4		14 Protists: Origins, Diversity and Ecology	28.2-28.6
TH Mar 6	Quiz 7	15 The Fungi	31
T Mar 11		MIDTERM 2	
TH Mar 13		16 How the Plants Colonized Land	29
T Mar 18		SPRING BREAK – NO CLASS	
TH Mar 20		SPRING BREAK – NO CLASS	
T Mar 25		17 Plant Diversity and Structure	30
TH Mar 27	Quiz 8	18 Plant Transport and Nutrition	36
T Apr 1		19 Animal Diversity, Invertebrates 1	32 & 33
Th Apr 3	Quiz 9	20 Animal Diversity, Invertebrates 2	33
T Apr 8		21 Animal Diversity, Invertebrates 3	33
TH Apr 10	Quiz 10	MIDTERM 3	
T Apr 15		22 Animal Diversity, Vertebrates 1	34
TH Apr 17	Quiz 11	23 Animal Diversity, Vertebrates 2	34
T Apr 22		24 Animal Diversity, Vertebrates 3	34
TH Apr 24	Quiz 12	25 Animal Behavior; Introduction to Ecology	51, 52
T Apr 29		26 Ecology & Biosphere 1	53, 54, 55.3-55.5
TH May 1		27 Ecology & Biosphere 2	56
TH May 8		FINAL EXAM 2:00-3:00 PM	

*Additional readings for specific lectures will be posted on Brightspace during the semester.

Course Policies

Policy on Re-grading Exams

If you feel that an error was made in the grading of an exam, you need to do the following:

- 1) Review the answer key
- 2) Complete the provided re-grade request form **IMMEDIATELY** upon receiving the exam back. Regrade requests will not be accepted after this time passes.

The graders will either handle the request or consult with the professors. Note that the entire exam will be regraded and, as a result, your grade may increase or decrease from a requested re-grade. No frivolous reasons will be accepted for requesting grade changes; stated reasons for a grade change must be legitimate (e.g., error in totaling the score).

Policy on Missed Lecture Exams

No make-up lecture exams will be given in this course. You may be excused from 1 exam in the event of a documented illness, emergency, or other serious problem beyond your control. *No other excuses for missing exams will be accepted.*

If you miss an exam for a legitimate reason, and wish to ask for an accommodation, you should proceed as follows. Within 48 hours of the missed exam, send an email to the lab manager and request that you be excused. In the case of illness, this request should include either an official letter from your doctor stating that you were too sick to take the exam, or your doctor's name and contact information with permission for us to contact the doctor for a limited discussion of your condition. Note that neither you nor the doctor need tell us the nature of your illness.

If you miss an exam for non-illness related reasons, you must provide similarly convincing documentation of the emergency to the lab manager within a week.

If we judge your excuse to be valid, we will give you a grade for the missed exam equal to the average of your scores for the exams that you did complete (you must complete at least 3 exams).

If your excuse is judged not to be valid, or you do not provide it within the allotted time, you will receive a score of zero for the missed exam.

If you miss the final exam and have provided a valid medical excuse to the lab manager 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 within 1 academic year.

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.

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 sources of help and may be able to offer accommodations. All such discussions will be confidential. Please seek help as soon as you feel your performance is being affected.

Students with Disabilities

Students requesting academic accommodations based on a disability are required to register with the Office of Student Accessibility Services (OSAS) each semester. A letter of verification for approved accommodations can be obtained from OSAS. Be sure that the letter is emailed to the lab manager as early in the semester as possible, [preferably by January 31](#).

OSAS office is located in GFS 120 and is open from 8:30 a.m. to 5:00 p.m., Monday through Friday. Their telephone number is 213-740-0776. Students must schedule appointments with the OSAS office 2 weeks before the exam date. For more information please visit the following website:

http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html.

Statement on Academic Integrity

The instructors in this course strongly support the ethics of academic integrity. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles.

Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00:

<http://webapp.usc.edu/scampus/1100behavior-violating-university-standards-and-appropriate-sanctions/>, while the recommended sanctions are located in Appendix A. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

Course Website

Students are responsible for logging onto Brightspace and checking the course website on a regular basis. Postings on Brightspace will be an official source for announcements, course materials, lecture notes, lecture quizzes, score postings and general discussions. Lecture exam scores and lecture quiz scores will be posted under your LECTURE SECTION. It is the student's responsibility to immediately notify the lab manager in the event of any mistakes, so please check your scores weekly.

Gift Policy

No gifts or presents of any kind are permissible to give to any of the instructional staff.

Final Comments

No exceptions will be made to these policies under most circumstances. If you think that the instructor or TA has granted you **any deviation** from the policies in this document, you must obtain their **written agreement** to support that claim.

BISC120 lab schedule*

Lab #	Date	Topic
	Jan 9 & 10	No labs scheduled
1	Jan 16 & 17	Lab safety
2	Jan 23 & 24	The Microscope
3	Jan 30 & 31	Scientific Investigation I
4	Feb 6 & 7	Scientific Investigation II
5	Feb 13 & 14	Evolution
6	Feb 20 & 21	Plants
7	Feb 27 & 28	Bacteria I
8	Mar 6 & 7	Bacteria II
	Mar 13 & 14	Animal behavior
9	Mar 20 & 21	No labs scheduled (spring break)
10	Mar 27 & 28	Ecology
	April 3 & 4	Lab exam review
	April 10 & 11	Lab exam
	April 17 & 18	Biodiversity Conservation Presentations I
	April 24 & 25	Biodiversity Conservation Presentations II

*some schedule/assignment adjustments may occur during the semester.

Required Textbook:

BISC 120 Laboratory Manual. PDF will be **posted on Brightspace** and must be completed for each lab.

Lab point distribution:

The laboratory portion (340 points) will count for 34% of your final course grade, distributed as follows:

Assignments	Points (340 total)
Pre-lab quizzes (5 points/lab)	50
Lab report	40
Lab exam	100
Biodiversity conservation presentation	50
Lab manual chapter (5 points/lab)	50
Lab participation (5 points per lab)	50

Lab performance guidelines

You are required to attend all lab sessions. Any unexcused absences will seriously affect your evaluation and lab participation points. Come to lab on time. You are also to remain for the entire lab session or until excused by your instructor. **DO NOT** make any other appointments for the time you are scheduled to be in lab.

You are required to wear gloves, closed toed shoes, long pants and a knee-length lab coat during lab. Lab coats can be purchased from the USC bookstore or online.

Before you begin the lab exercise, make sure that you remove all unnecessary materials from your work area. At the end of the lab session, clean and return all supplies to their proper place, clean your work area, and slide your chair under the table to receive the full participation points. Check with your instructor before leaving.

NO EATING OR DRINKING IS ALLOWED IN THE LABORATORY UNDER ANY CIRCUMSTANCES.

Pre-lab quizzes

Before each experimental lab, students must complete a quiz to prepare for the upcoming lab topic/procedures. These quizzes will consist of 5 multiple-choice and/or true/false questions that are related to that week's lab manual chapter. Quizzes are available for 1 week on Brightspace, and late submissions or regrade attempts are NOT allowed.

Lab manual chapters

During each lab students need to record their results (drawings, observations, calculations) in their lab manual. Tables need to be filled and all post-lab questions answered. Each student is required to show the lab instructor a completed and accurate lab manual chapter before leaving the lab to earn credit.

Lab report

Lab reports must be uploaded on Brightspace via the Turnitin submission link. This program will detect any forms of plagiarism (i.e. using a previous student's report, copy/paste from research articles, etc.) and use of AI-generated tools. Please create your own original lab report and do not share/collaborate with other students. Any violations will result in 0/40 points, and repercussions with Student Judicial Affairs (SJACS).

A paper copy turned in at the beginning of the lab session is optional and dependent on the lab instructor. Lab report guidelines, materials, and upload link will be posted on Brightspace at the beginning of the semester.

Lab exam

The cumulative lab exam will test your understanding of the topics, concepts and exercises covered during the semester. It's a 60-minute exam, and may contain a mix of multiple-choice, true/false, fill in the blank, and/or short response questions.

Missed Lab Exam: It is your responsibility to be present on the days of the lab exam.

If you miss a lab exam due to a serious illness, you must present a valid excuse to lab manager Brett (spatola@usc.edu) within 48 hours of the missed exam. A valid excuse is considered to be an official note from your doctor or the summary of your visit from the USC Engemann Student Health Center. Note that neither you, nor your doctor, need to tell us the nature of your illness; we just want to verify whether you were too ill to take the exam.

If you miss an exam for non-illness related reasons, you must provide similarly convincing documentation of the emergency to the Lab Manager.

If we judge your excuse to be valid, you will be allowed to take the exam in another lab section that week. If you do not have a valid excuse or fail to provide it within the allotted time, you will receive zero points for the missed lab exam.

Missed labs

If you miss a scheduled lab due to illness or emergency, please contact lab manager Brett (spatola@usc.edu) or your lab instructor immediately to see whether it will be possible to make up the missed lab.

Students who wish to miss a lab for observance of a religious holy day should be aware of the University's policy on such absences, published at: <http://orl.usc.edu/religiouslife/holydays/absences.html>. Requests for such absences should be made by email addressed to lab manager Brett (spatola@usc.edu) at least 2 weeks in advance of the absence. If the absence is approved, the instructors will determine a reasonable accommodation for the student.

Student-athletes who must miss occasional labs for legitimate reasons should bring the SAAS excuse letter to the lab manager at least 2 weeks in advance so alternatives can be arranged.

Please note that no lab make-ups will be allowed during the week prior to a holiday, and for school-unrelated activities.

Lab scores

You can find scores for all of your lab assignments on Brightspace. Your lab scores will be posted under your LAB SECTION. Be sure to check for additional postings or announcements on a regular basis. It is the student's responsibility to immediately notify their lab instructor in the event of any mistakes, so please check your scores weekly.

Changing a lab section

During the first three weeks of classes, you are responsible for changing your lecture or lab section by dropping your current section and adding your new choice through USC Web registration System.

You can switch into a new lab section **only if it is open (i.e. if it has less than 20 students)**.

If a lab section is currently closed, you must wait until other students drop before you can switch into that section.

No changes are allowed after the third week of classes (i.e., after the second week of lab).

You are responsible for printing/saving your grade report from Brightspace before changing sections, as scores may be irrevocably lost from the system when students change sections. The same applies if changing lecture or lab sections.