



**BISC 120Lg: General Biology:
Organismal Biology and Evolution**

4 units

Mon., Wed., Fri. 10:00–10:50 AM (13005)

Room: Online

Instructor: Andrew Gracey, Ph.D.

Office: AHF 316

Office Hours: 'Zoom chat' available upon request

Contact Info: gracey@usc.edu

Lab Manager: Gorjana Bezmalinovic

Office: ZHS 362

Office Hours: Open door policy

Contact Info: bezmalin@usc.edu

Phone: (213) 740-6078

Required Texts:

Lecture

Campbell Biology 12th ed., 2020.

(10th & 11th editions also acceptable)

Laboratory

Fall 2020 BISC 120 Laboratory Manual.

(Chapters posted as PDF files on Blackboard)

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

(site for course materials, lecture notes, quizzes, additional readings, grades, etc.)

Course Description

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 weekly lectures (schedule below) and a weekly laboratory sessions.

Besides registering for one lecture section and one lab section, you also need to register for the quiz section.

Learning Objectives:

At the end of the course, students will:

- know key concepts of the scientific method
- understand how the scientific method is applied to 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

Lecture Quizzes: There will be 12 multiple choice quizzes to be completed on Blackboard during the semester. The quizzes will be posted at 11:00 A.M. on Fridays and will remain available until 9:00 A.M. the following Monday. First Bb quiz will be posted on Aug 21st.

Exams: The lecture portion of this course will include three midterm examinations and a final examination. All examinations (midterms and final) are conducted online and may include a variety of questions such as multiple choice questions and short answers. The final examination will not be cumulative, effectively serving as a fourth midterm. Three midterms will be given during the Friday 2:00 P.M. quiz section, and the [final exam date is to be determined](#). 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 75% of the assigned weekly laboratory activities.

Grading: After each examination, 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. The final letter grade for the course will be assigned on a curve, determined by the total number of points as given below. While there are multiple sections and days offered for BISC 120 this year, your grade will only be based on your performance within this group of students (i.e., T/TH grades will not be pooled with grades from the M/W/F class to calculate final grades).

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

Midterm Exam 1	150
Midterm Exam 2	150
Midterm Exam 3	150
Final Exam (not cumulative)	150
Lecture Quizzes	72
Laboratory Assignments	328

Laboratory scores will be normalized as explained in the laboratory syllabus in order to correct for possible differences in grading between laboratory instructors. Any document associated with grading may be photocopied by the instructional staff.

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

Day	Quiz	Lecturer	Lecture	Readings
M Aug 17		Gracey	Course Introduction	Course Syllabus
W Aug 19		Gracey	Mendelian Inheritance	14
F Aug 21	Quiz 1	Gracey	Chromosomal Inheritance	15
M Aug 24		Gracey	Chromosomal Inheritance	15
W Aug 26		Gracey	Genetic Material and Expression	16
F Aug 28	Quiz 2	Gracey	Genetic Material and Expression	17
M Aug 31		Gracey	The Darwinian Revolution	22
W Sep 2		Gracey	Evolutionary Mechanisms	23
F Sep 4	Quiz 3		MIDTERM 1; 2:00-3:00 pm	
M Sep 7		Gracey	Evolutionary Mechanisms	23
W Sep 9		Gracey	Speciation	24
F Sep 11	Quiz 4	Gracey	Macroevolution	25
M Sep 14		Gracey	Macroevolution	25
W Sep 16		Gracey	Phylogenetic Systematics	26
F Sep 18	Quiz 5	Gracey	Phylogenetic Systematics	26
M Sep 21		Gracey	Viruses	19
W Sep 23		Gracey	Prokaryotes	27
F Sep 25	Quiz 6	Gracey	Protists	28
M Sep 28		Gracey	Protists	28
W Sep 30		Gracey	Fungi	31
F Oct 2	Quiz 7		MIDTERM 2; 2:00-3:00 pm	
M Oct 5		Gracey	Plant Evolution	29
W Oct 7		Gracey	Plant Evolution	30
F Oct 9	Quiz 8	Gracey	Plant Evolution	36&37
M Oct 12		Gracey	Introduction to Animals	32
W Oct 14		Gracey	Invertebrates I	33
F Oct 16	Quiz 9	Gracey	Invertebrates II	33
M Oct 19		Gracey	Invertebrates III	33
W Oct 21		Gracey	Invertebrates IV	33
F Oct 23	Quiz 10	Gracey	MIDTERM 3; 2:00-3:00 pm	
M Oct 26		Gracey	Vertebrates I	34
W Oct 28		Gracey	Vertebrates II	34
F Oct 30	Quiz 11	Gracey	Vertebrates III	34
M Nov 2		Gracey	Vertebrates IV	34
W Nov 4		Gracey	Ecology I	52&53
W Nov 6	Quiz 12	Gracey	Ecology I	52&53
M Nov 9		Gracey	Ecology III	54-55
W Nov 11		Gracey	Life in the Anthropocene	56
F Nov 13			TBD	
Nov 14-16			STUDY DAYS	

Nov 17-24

FINAL EXAM

*Additional readings for specific lectures will be posted on Blackboard 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) Check the answer key with your TA, 2) Prepare a **printed statement** explaining why you feel your grade was incorrect, and 3) Submit your printed statement, Re-grade Request Form (downloaded from Blackboard) and your original exam to your TA **within one week** of the time the exam was returned to you. The TA will either handle the re-grade or consult with the professors. The entire exam will be re-graded 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 an 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 24 hours of the missed exam, send an email to the Lab Manager to request to be excused.** In the case of illness, this request must 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 to tell us the nature of your illness. If you were seen at the USC Health Center, a summary of your visit can replace a doctor's note. **If you miss an exam for non-illness related reasons, you must provide similarly convincing documentation of the emergency to the Lab Manager within 24 hours.** If we judge your excuse to be valid, we will give you a grade for the missed exam equal to the average of your grades for the equivalent exams that you did take. Except in extraordinary circumstances, we will make accommodations for only one missed lecture exam. 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 24 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.

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 Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Be sure that the letter is delivered to the Laboratory Manager as early in the semester as possible, preferably by September 4. DSP is located in STU 301 and is open from 8:30 a.m. to 5:00 p.m., Monday through Friday. Their telephone number is 213-740-0776. If a student's approved accommodation is limited to extra time on examinations, the teaching staff of BISC 120 will provide the accommodation. For any other accommodation, such as a private room, reader or a scribe, students must make prior arrangements with the DSP 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://web-app.usc.edu/scampus/1100-behavior-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 Blackboard (<https://blackboard.usc.edu>) and checking the course website on a regular basis. Postings on Blackboard will be an official source for announcements, course materials, lecture notes, score postings and general discussions. Lecture quizzes will also be completed on Blackboard. 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 on Blackboard weekly.

Gift Policy

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

Changing a Lab or a Lecture 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 (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. You are responsible for taking a screenshot of your scores from Blackboard **before** changing sections and emailing it to your lab manager so your scores can be transferred to the new section. The same applies if changing lecture or lab sections.

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.

FALL 2020 BISC 120Lg INSTRUCTIONAL TEAM

For ANY administrative questions about ANY aspects of the lecture and laboratory portions of this course, please FIRST CONTACT the Lab Manager, Gorjana Bezmalinovic (E-mail: bezmalin@usc.edu)

MWF instructors: **Dr. Trond Sigurdson**
 Dr. Andrew Gracey

TH instructor: **Dr. Oliver Rizk**

Lab Manager: Gorjana Bezmalinovic

Lab Instructors: TBA during the first week of classes

Supplemental instruction (SI) leader: TBA

SI study session times can be found at <http://dornsife.usc.edu/supplemental-instruction> once the semester starts.

BISC 120 LABORATORY SYLLABUS
FALL 2020

Lab Manager: Gorjana Bezmalinovic

bezmalin@usc.edu

Office hours: 'Zoom chat' available upon email request

Laboratory Schedule:

Lab #	The Week Of	Laboratory
1	Aug 17	Lab Safety
2	Aug 24	Mendelian Inheritance*
3	Aug 31	Experimental Design / Scientific Reading*
4	Sep 7	Evolution*
5	Sep 14	Animal Genetics
6	Sep 21	Cell Structure
7	Sep 28	Bacteria / The Gram Stain*
8	Oct 5	Genetic Transfer in Bacteria
9	Oct 12	Plants*
10	Oct 19	Invertebrate Model System (<i>C. elegans</i>)
	Oct 26	Trophic Levels/Food webs
	Nov 2	LAB EXAM
	Nov 9	Biodiversity Conservation Presentation

Some minor changes might occur during the semester.

* Exercise for which 5-7 pages, typed lab report is required.

* Exercise for which there is a homework assignment.

* Exercise for which there is a pre-lab assignment.

LABORATORY POINT DISTRIBUTION

The laboratory portion (**328 points**) will count for **~33%** of your final course grade, distributed as follows:

-  Lab activities (virtual labs) – 100 pts (10 x 10)
-  Homework/post-labs – 33 pts
-  Scientific Reading – 15 pts
-  Lab Report – 40 pts
-  Lab Report Peer Review – 10 pts
-  Biodiversity Conservation Presentation – 30 pts
-  Lab Exam – 100 pts

LAB SCORES

Scores for all the lab assignments will be posted on Blackboard – <https://blackboard.usc.edu/>, under your **LAB SECTION**. It is the student's responsibility to immediately notify their Lab Instructor or Lab Manager in the event of any mistakes, so please check your Blackboard scores weekly.

LABORATORY ATTENDANCE

You are required to attend your Lab Instructor's '**Zoom lab sessions**' during the scheduled lab time. Those who cannot be present due to time zone constraints will be excused and will be able to watch the recordings. It is a student's responsibility to follow up with their Lab Instructor if they have any questions related to specific virtual lab activities.

LABSTER VIRTUAL LABS

You will be required to do virtual lab simulations. You will be asked questions throughout the virtual lab activities and your scores will be transferred to Blackboard (Bb) after you complete each lab.

HOMEWORK / POST-LAB ASSIGNMENTS

You will have several homework/post-lab assignments, based on the material you learned in the lab, or data obtained in your lab experiments. Assignments will be posted on Bb.

SCIENTIFIC READING

You will have to read a peer-reviewed scientific paper and answer questions on Bb before you come to lab. You are expected to participate in a lab discussion of the paper with your lab instructor and your labmates.

LAB REPORT

After one of the lab activities you will have to write a scientific lab report. Lab report guidelines will be posted on Bb in the beginning of the semester. Lab report will be submitted on Blackboard through the [turnitin link](#).

LAB REPORT PEER REVIEW

Each student will review one of their lab-mates' lab reports. Instructions will be posted on Blackboard once the semester starts.

BIODIVERSITY CONSERVATION PRESENTATION

This assignment will be done in pairs. You will have to prepare a presentation about an endangered species or a disappearing habitat and share it with your labmates through Zoom. Detailed guidelines will be posted on Bb.

LAB EXAM

The cumulative lab exam will test your understanding of the topics, concepts and activities covered during the entire semester. This 90-minute test will be administered on Bb. It will consist of multiple-choice questions, T/F, fill in the blanks, matching and short answers.

It is your responsibility to take the lab exam during the scheduled exam time.

- If you miss a lab exam due to a serious illness, you must present a valid excuse to the Lab Manager (bezmalin@usc.edu) within 24 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 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 within 24 hours. If we judge your excuse to be valid, you will be allowed to take the make-up lab exam. If you do not have a valid excuse or fail to provide it within the allotted time, you will receive a zero.
- Students who miss a lab exam due to the 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 the Lab Manager (bezmalin@usc.edu) at least 2 weeks in advance of the absence. If the absence is approved, the student will be allowed to take the make-up lab exam.
- Student-athletes who will have to miss the lab exam due to a previously scheduled NCAA competition should bring the SAAS excuse letter to the Lab Manager at least 2 weeks in advance so alternatives can be arranged.

LAB SCORE NORMALIZATION

The lab scores will be normalized at the end of the semester by the Lab Manager to correct for differences in grading between Lab Instructors/TAs.

STUDENTS WITH DISABILITIES

Students requesting academic accommodations based on a disability are required to register with the Office of Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Be sure that the letter is delivered to the Laboratory Manager as early in the semester as possible, preferably by Sep 4, 2020. DSP 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. If a student's approved accommodation is limited to extra time on exams, the teaching staff of BISC 120 will provide the accommodation. For any other accommodation, such as a private room, reader or a scribe, students must make prior arrangements with the DSP 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.