

BISC 120Lg MWF Lecture Syllabus, Fall 2014

General Biology: Organismal Biology and Evolution

~ Aug 12th version ~

- 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 a series of weekly lectures (Monday, Wednesday, and Friday of each week) and one weekly laboratory section.
- Faculty Instructors:** Dr. Suzanne Edmands, AHF 316, 213-740-5548, sedmands@usc.edu
Dr. Oliver Rizk, AHF 107D, 213-740-9092, orizk@usc.edu
Dr. Wiebke Ziebis, AHF 334, 213-821-1198, wziebis@usc.edu
- Lab Manager:** Gorjana Bezmalinovic, ZHS 362, 213-740-6078, bezmalin@usc.edu
- Textbooks:** Lecture
Campbell Biology 10th ed., 2014. (new textbooks come bundled with Mastering Biology™ which is recommended for studying but not required)
- Laboratory
General Biology Laboratory Manual FALL 2014, BISC 120/BISC 121, USC.
Adams & Crawley (2013). **Van De Graaff's Photographic Atlas for the Biology Laboratory, 7th ed.;** recommended
Pechenik. **A Short Guide to Writing About Biology. 8th ed.** (e-copy included with the USC custom textbook); recommended
- Website:** <https://blackboard.usc.edu/>
(site for course materials, lecture notes, quizzes, additional readings, grades etc.)
- Lecture:** MWF 9:00 – 9:50 A.M. in THH 101 (#13004R)
MWF 10:00 – 10:50 A.M. in THH 101 (#13005R)
- Laboratory:** Various times, Tuesday – Friday, in ZHS 361, 363 and 365
- Office Hours:** Edmands: 11:30 A.M. – 12:30 P.M. Mondays and Wednesdays in AHF 316
Rizk: 11:30 A.M. – 12:30 P.M. Mondays and Wednesdays in AHF 107D
Ziebis: 11:30 A.M. – 12:30 P.M. Mondays and Wednesdays in AHF 334
- Lecture Quizzes:** There will be twelve multiple choice quizzes to be completed on Blackboard (https://blackboard.usc.edu) during the semester. The quizzes will be posted at 12:00 P.M. (noon) on Fridays and will remain available until 9:00 A.M. the following Monday. Answers to quiz questions will be posted on Monday afternoons.
- Exams:** The lecture portion of this course will include three midterm exams and a comprehensive final exam. All exams (midterms and final) may include multiple choice questions, fill-in answers, short answers, short and long essays, definitions, and

quantitative problems. The final exam will include material composed of questions that integrate concepts developed throughout the course, both in the lecture and the laboratory portions. To be assigned a final letter grade at the end of the course, a student must take at least two midterm lecture exams and the final exam and have completed at least 75% 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. The final letter grade 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 (cumulative)	200
Lecture Quizzes	24
Laboratory Assignments	326

Laboratory scores will be normalized as explained in the laboratory syllabus in order to correct for possible differences in grading between teaching assistants (TAs).

Schedule of lecture topics (subject to modification of specific topics and reading assignments^{*}):

Day	Quiz	Lecturer	Lecture	Readings
M Aug 25		Edmands	1 Course Introduction	Course Syllabus
W Aug 27		Rizk	2 Overview – Medical Relevance	1.1
F Aug 29		Ziebis	3 Overview – Environmental Importance	52.1 (1144-1145)
M Sep 01			LABOR DAY HOLIDAY – NO CLASS	
W Sep 03		Edmands	4 Patterns of Inheritance	14.1-14.4
F Sep 05	Quiz 1	Edmands	5 Molecular Basis of Inheritance	15.1-15.3, 16.1
M Sep 08		Edmands	6 The Darwinian Revolution	22.1, 22.2
W Sep 10		Edmands	7 The Case For and Against Evolution	22.3
F Sep 12	Quiz 2	Edmands	8 Evolutionary Mechanisms I	23.1-23.2
M Sep 15		Edmands	9 Evolutionary Mechanisms II	23.3-23.4
W Sep 17		Edmands	10 Speciation	24.1-24.2
F Sep 19	Quiz 3	Edmands	11 Macroevolution	24.4, 25.5-25.6
M Sep 22		Edmands	12 Phylogenetic Systematics	26.1-26.3
W Sep 24		Edmands	13 Insights from Molecular Systematics	26.4-26.6
F Sep 26	Quiz 4	Edmands	14 Behavioral and Social Evolution	51.1-51.4
M Sep 29		Edmands	15 Conservation Genetics	56.1-56.2
W Oct 01		Edmands	EXAM 1	
F Oct 03	Quiz 5	Rizk	16 Origins of Life	7.1-7.2, 25.1-25.4
M Oct 06		Rizk	17 Prokaryote Structure/Function	27.1-27.2
			Bacteria and Cell Membranes	7.3 -7.4

W	Oct 08		Rizk	18	Nutritional and Metabolic Adaptations, Prokaryotic Phylogeny and Role in Biosphere	27.3-27.5
F	Oct 11	Quiz 6	Rizk	19	Viruses; Bacterial Viruses	19.1-19.2
M	Oct 13		Rizk	20	Plant and Animal Viruses	19.2
W	Oct 15		Rizk	21	Genomes and Their Evolution	21.1-21.4
F	Oct 17	Quiz 7	Rizk	22	Protists Origin and Diversity	28.1- 28.6
M	Oct 20		Rizk	23	The Fungi	31.1-31.3, 31.5
W	Oct 22		Rizk	24	How the Plants Colonized Land	29.1-29.3
F	Oct 24	Quiz 8	Rizk	25	Plant Structure and Diversity	30.1-30.4, 35.1-35.4
M	Oct 27		Rizk	26	Plant Transport	36.1-36.5
W	Oct 29		Rizk	27	Soil and Nutrition	37.1-37.3
F	Oct 31	Quiz 9	Rizk	EXAM 2		
M	Nov 03		Ziebis	28	History of Animal Life on Earth Animal Diversity – Invertebrates 1	32 & 33 32 & 33
W	Nov 05		Ziebis	29	Animal Diversity – Invertebrates 2	32 & 33
F	Nov 07	Quiz 10	Ziebis	30	Animal Diversity – Invertebrates 3	32 & 33
M	Nov 10		Ziebis	31	Animal Diversity – Invertebrates 4	32 & 33
W	Nov 12		Ziebis	32	Animal Diversity – Invertebrates 5	32 & 33
F	Nov 14	Quiz 11	Ziebis	33	Vertebrates 1	34
M	Nov 17		Ziebis	34	Vertebrates 2	34
W	Nov 19		Ziebis	35	Vertebrates 3	34
F	Nov 21	Quiz 12	Ziebis	36	Vertebrates 4	34
M	Nov 24		Ziebis	EXAM 3		
W	Nov 26				THANKSGIVING HOLIDAY – NO CLASS	
F	Nov 28				THANKSGIVING HOLIDAY – NO CLASS	
M	Dec 01		Ziebis	37	Our Global Environment Ecology and Biosphere 1	52-56
W	Dec 03		Ziebis	38	Ecology and Biosphere 2	52-56
F	Dec 05		Ziebis	39	Ecology and Biosphere 3	52-56
M	Dec 15			FINAL EXAM		
					9 A.M. lecture section from 11:00 am - 1:00 pm	
					10 A.M. lecture section from 8:00 - 10:00 am	

*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

Each student must take her/his exams at the designated time, according to her/his registered lecture section. Students registered for the 9 A.M. lecture section (#13004R) must take the '9 A.M. exam' and students registered for the 10 A.M. lecture section (#13005) must take the '10 A.M. exam'. Taking the wrong midterm or final exam will result in a score of zero.

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 48 hours of the missed exam, send an email to the Lab Manager a request that you 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. If you see a doctor at the USC Engemann Student Health Center, you will need to download, sign, and submit an "Authorization for Disclosure of Medical Information" to give us permission to speak to your doctor. This form can be found at: <https://engemannshc.usc.edu/files/2012/11/Authorization-for-Disclosure-of-Medical-Information-Professors-Limited-Discussion.pdf>. 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 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.

Please note that **Thanksgiving Break** begins on Wednesday, November 26th. In order to balance the coverage of each midterm exam, **Midterm Exam 3** will be given on **Monday, November 24th**. We will not accept travel plans made for any reason as a valid excuse for missing Midterm Exam 3. Do not make any Thanksgiving Break travel plans that conflict with this 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 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 5, 2014](#). 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 (*i.e.*, after the second week of lab). You are responsible for printing out your grade report from Blackboard **before** changing sections, as scores may be irrevocably lost from the Blackboard system when students change sections. 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 2014 BISC 120Lg INSTRUCTIONAL TEAM

For ANY administrative questions about ANY aspects of the lecture and laboratory portions of this course, please FIRST CONTACT the Administrative Teaching Assistant, Yukai Zhao (E-mail: yukaizha@usc.edu)

MWF instructors: Dr. Suzanne Edmands
Dr. Oliver Rizk
Dr. Wiebke Ziebis

TH instructors: Dr. Oliver Rizk
Dr. Andrew Gracey

Lab Manager: Gorjana Bezmalinovic

Teaching Assistants (TAs): TBA during the first week of classes

Supplemental instruction (SI) leaders:	Audrey Chai	(Attending MWF 9 A.M. lecture)
	Jordan Hoese	(Attending MWF 10 A.M. lecture)
	Yuna Kim	(Attending TH lecture)
	Troy Sekimura	(Attending TH lecture)

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

Answers to students' frequently asked questions regarding this course can be found on Blackboard (<https://blackboard.usc.edu>) under Course Information in your lecture section.

BISC 120Lg LABORATORY SYLLABUS
FALL 2014

Lab Manager: Gorjana Bezmalinovic ZHS 362 Tel/Fax: 213-740-6078
 E-mail: bezmalin@usc.edu
 Office hours: Open door policy

Laboratory Schedule:

<u>Lab #</u>	<u>Date</u>	<u>Laboratory</u>	<u>Lab Manual</u>
	Aug 26 – Aug 29	NO LAB THIS WEEK	
1	Sep 2 – Sep 5	Introduction to BISC 120 labs Laboratory Safety	page ix
2	Sep 9 – Sep 12	The Microscope	Chapter 1
3	Sep 16 – Sep 19	Scientific Investigation	Chapter 2
4	Sep 23 – Sep 26	Evolution	Chapter 3
5	Sep 30 – Oct 3	Animal Behavior (Start the Petri plates!)	Chapter 4
6	Oct 7 – Oct 10	Bacteria*	Chapter 5
	Oct 14 – Oct 17	LAB EXAM 1 (Antibiotics lab report due)	(Chapters 1 – 5)
7	Oct 21 – Oct 24	Protists (Cut the planarians!)	Chapter 6
8	Oct 28 – Oct 31	Plant Diversity I & II	Chapters 8 & 9
9	Nov 4 – Nov 7	Animal Diversity I: Invertebrates*	Chapter 10
10	Nov 11 – Nov 14	Animal Diversity II: Echinoderms and Chordates (Planaria Regeneration lab report due)	Chapter 11
	Nov 18 – Nov 21	LAB EXAM 2	(Chapters 6, 8 – 11)
	Nov 25 – Nov 28	NO LAB – THANKSGIVING	
11	Dec 2 – Dec 5	Biodiversity Conservation Presentations	

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

The Lab Manager reserves the right to make some adjustments to the lab syllabus during the semester.

Required Textbook available at the USC bookstore:

General Biology Laboratory Manual FALL 2014, BISC 120/BISC 121, USC. (Available at the USC bookstore after August 15, 2014.)

Recommended Textbooks:

Adams & Crawley (2013). [Van De Graaff's Photographic Atlas for the Biology Laboratory](#), 7th ed.

Pechenik. [A Short Guide to Writing About Biology](#). 8th ed. (e-copy included with the USC custom textbook).

LABORATORY POINT DISTRIBUTION

The laboratory portion ([326 points](#)) will count for [~33%](#) of your final course grade, distributed as follows:

Lab Quizzes (9 – 7 points each)	63 pts
Lab Reports (2 – 45 points each)	90 pts
Lab Exams (2 – 50 points each)	100 pts
Biodiversity Conservation Presentation	35 pts
Lab Manual (2 points per chapter)	20 pts
Lab Participation (2 points per lab)	18 pts

LABORATORY 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 closed toe shoes, long pants and a lab coat. Goggles will be provided in lab.

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. Check with your instructor before leaving.

[NO EATING OR DRINKING IS ALLOWED IN THE LABORATORY UNDER ANY CIRCUMSTANCES.](#)

LAB QUIZZES

Each student will take a quiz during the first 5 minutes of each lab session. Students who come late to lab without a legitimate and verifiable excuse will not be allowed to make up the quiz. Quizzes will consist of multiple choice questions and/or fill-in-the-blanks. Out of 7 questions, 4 will test you on the knowledge of the material you will be covering that day in lab, and the other 3 will test you on what you have learned in the previous lab.

LAB MANUAL

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

his/her TA the lab manual before leaving the lab and obtain their signature. Lab manuals will be checked periodically throughout the semester.

LAB REPORTS

Two lab reports will be written during the semester. Lab reports must be posted on Blackboard (*Lab Reports* [turnitin](#) link) and a hard copy turned in at the beginning of the lab session. Lab report guidelines will be posted on Bb (<https://blackboard.usc.edu/>) in the beginning of the semester.

LAB EXAMS

The two lab practical exams will test your understanding of the topics and exercises covered in the laboratory sessions. You will have a written portion and a practical portion (being able to use a microscope to identify different organisms). The first lab exam will cover material covered in labs 1 – 6, while labs 7 – 10 will be covered on the second exam.

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

If you miss a lab exam due to a serious illness, you must present a valid excuse to the Lab Manager Gorjana Bezmalinovic (bezmalin@usc.edu) **within 48 hours** of the missed exam. A valid excuse is considered to be an official note from your doctor or the "Authorization for Disclosure of Medical Information" form from the USC Engemann Student Health Center (the '*Professor's Limited Discussion*' form). 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 practical exam.

MISSED LABS

If you miss a scheduled lab exercise **due to illness or emergency**, please contact the Administrative TA Yukai Zhao (yukaizha@usc.edu) to see whether it will be possible to make up the exercise by attending an alternative lab section. For logistical reasons, it will not be possible to make up a missed lab exercise after Friday afternoon of the week in question. Therefore, students with labs scheduled on Fridays will have little or no alternative should they miss lab unexpectedly. Only a few requests for alternative labs can be accommodated, because few sections have available space. Therefore, it is very important for you to attend your scheduled lab section.

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 the Administrative TA Yukai Zhao (yukaizha@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 Administrative TA 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.

BIODIVERSITY CONSERVATION PRESENTATION

Detailed instructions for preparing your presentation, including how points will be assigned, will be provided on Blackboard (<https://blackboard.usc.edu/>).

LAB SCORES

You can find scores for all of your lab assignments on Blackboard: <https://blackboard.usc.edu>. Your lab scores will be posted under your **LAB SECTION**. Be sure to check for additional postings on a regular basis. It is the student's responsibility to immediately notify his/her Lab Instructor or Lab Manager in the event of any mistakes, so please check your scores on Blackboard weekly.

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). In this procedure, the mean total score of all students in each lab instructor's lab section is compared to the mean total score of the entire class and each student's score is adjusted.

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 5, 2014](#). 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.