

BISC 121Lg
Advanced General Biology: Organismal Biology and Evolution
Fall Semester 2013

Course Overview: BISC 121Lg is an advanced introductory course that will expose students to the breadth of biological diversity, evolution, and environmental biology. The course is designed to provide relatively even coverage of all major taxonomic groups, providing an evolution-based description of form and function, and an overview of ecology, behavior, population genetics, and conservation biology.

Lecturer: **David Caron, Ph.D.**, AHF 301, 213 740-0203, dcaron@usc.edu

Office Hours: 2:00 – 3:00 P.M. on Mondays, or by appointment

Jed Fuhrman, Ph.D., AHF 211, 213 740-5757, fuhrman@usc.edu

Office Hours: 11:00 A.M. – 12:00 P.M. on Mondays, or by appointment

Lab Manager: **Gorjana Bezmalinovic**, ZHS 362, 213-740-6078, bezmalin@usc.edu

Office Hours: Open door policy

Lab Instructors: TBA

Required Textbooks:

Lecture: [Campbell Biology 9th ed.](#) (with Mastering Biology™), 2011.

Laboratory: [General Biology Laboratory Manual FALL 2013](#), BISC 120 & BISC 121 Courses, USC.

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

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

Optional Textbooks:

[Sustaining Life, How Human Health Depends on Biodiversity](#). E. Chivian and A. Bernstein (editors). 2008.

Website: <https://blackboard.usc.edu/> (for detailed class notes, announcements and grades — you will want to check this website regularly)

Grading: Final grades are assigned on a curve, determined entirely by the total number of points earned on lecture exams and in the laboratory. See the **Course Contract** for more details. After each exam a curve will be published to indicate roughly what letter grade corresponds to each student's current number of points. **Only the total number of points earned by the end of the course will determine the final grade.**

Exam Schedule:

Exam 1: Monday, Sept. 23

Exam 2: Monday, Oct. 14

Exam 3: Friday, Nov. 8

Final Exam: Monday, Dec. 16

For policies on re-grading and missed exams, please refer to the Course Contract which is available on the course website.

Students with Disabilities: Any student requesting academic accommodations based on a disability is 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 director as early in the semester as possible. DSP is located in STU 301 and is open 8:30-5:00, Monday through Friday. The telephone number for DSP is 213-740-0776.

Lecture schedule

Date	Lecture Topic	Campbell Biology 9 th Ed.	Lecturer	Lecture Number
Aug 26	Introduction	Ch.14,15,16*	Caron	1
28	Genetics & Evolution: The Modern Synthesis	Ch. 22, 23	Caron	2
30	Evolution: Overview of the Diversity of Life	Ch. 22	Caron	3
Sep 2	Labor Day			Holiday
4	Micro/Macroeolution	Ch. 24	Caron	5
6	The Origin & Concept of Species	Ch. 25	Caron	
Sep 9	Phylogeny & Systematics	Ch. 26	Caron	6
11	The Tree of Life (Eukaryotes)	Ch. 26	Caron	7
13	Diversity & Ecology I	Ch. 26	Caron	8
Sep 16	Diversity & Ecology II	Ch. 28	Caron	9
18	Unicellular Eukaryotes: Protists I	Ch. 28	Caron	10
20	Unicellular Eukaryotes: Protists II	Ch. 28	Caron	11
Sep 23	1st EXAM		Caron	Exam 1
25	Fungi Phylogeny and Ecology	Ch. 31	Caron	12
27	Animal Diversity & The Barcode of Life	Ch. 32	Caron	13
Sep 30	Marine Animal Diversity (Guest Lecturer?)	Ch. 32	Caron	14
Oct 2	Invertebrates I	Ch. 33	Caron	15
4	Invertebrates II	Ch. 33	Caron	16
Oct 7	Vertebrates: The Origin of Jaws	Ch. 34	Caron	17
9	Vertebrates: Amniotes	Ch. 34	Caron	18
11	Vertebrates: Primates & Hominid Evolution	Ch. 34	Caron	19
Oct 14	2ND EXAM		Caron	Exam 2
16	Origins of Life	Ch. 25	Fuhrman	20
18	Virus Introduction	Ch. 19	Fuhrman	21
Oct 21	Viruses and Prokaryotic Genetics	Ch. 18.1, 27	Fuhrman	22
23	Prokaryote Structure & Function	Ch. 27	Fuhrman	23
25	Prokaryote Metabolic Diversity	Ch. 27	Fuhrman	24
Oct 28	Prokaryote Diversity and Ecology	Ch. 27	Fuhrman	25
30	The Evolution of Land Plants	Ch. 29	Fuhrman	26
Nov 1	Seed Plants	Ch. 30	Fuhrman	27
Nov 4	Elements of Plant Structure and Function	Ch. 35-39 (concepts only)	Fuhrman	28
Nov 6	Behavioral Biology	Ch. 51	Fuhrman	29
Nov 8	3RD EXAM		Fuhrman	Exam 3

Nov 11	Introduction to Ecology	Ch. 52	Fuhrman	30
13	Population Ecology	Ch. 53	Fuhrman	31
15	Community Ecology	Ch. 54	Fuhrman	32
Nov 18	Community Ecology	Ch. 54	Fuhrman	33
20	Ecosystems	Ch. 55	Fuhrman	34
22	Ecosystems	Ch. 55	Fuhrman	35
Nov 25	Conservation Biology	Ch. 56	Fuhrman	36
27	<i>Thanksgiving Holiday</i>			Holiday
29	<i>Thanksgiving Holiday</i>			Holiday
Dec 2	Global Change Presentation		Fuhrman	37
4	Conservation Biology	Ch. 56	Fuhrman	38
6	Catch-up, Summary, and Review		Fuhrman	39
Dec 7-10	Study Days. No Classes or Exams.			
Dec 16	Final Exam 8:00 AM – 10:00 AM			Final Exam

NOTES: * Indicates chapters that students should read and/or review, especially if they have little or no prior familiarity with genetics. This syllabus may be subject to minor changes, which will be announced in class.

NOTES: Professors' lectures will be supplemented with PDF or PowerPoint documents posted for download on the class web site (<https://blackboard.usc.edu/>). The PDF files will generally be available a few days prior the respective lecture under *Course Documents*.

This syllabus may be subject to minor changes, which will be announced in class & posted on Blackboard. Again, it is YOUR RESPONSIBILITY to check the <https://blackboard.usc.edu/> website frequently.

ACADEMIC INTEGRITY is critically important. Familiarize yourself with USC academic integrity guidelines. See <http://www.usc.edu/student-affairs/SJACS/forms/tio.pdf>, and also The Undergraduate Guide for Avoiding Plagiarism at <http://www.usc.edu/student-affairs/SJACS/forms/tig.pdf>.

Please check your grades on Blackboard frequently (on your *My USC* home page click on *View Grades* in the *Tools* box); all corrections to grades must be completed PRIOR to the lecture final. Please notify your TA and the laboratory manager of the error and follow-up that it is corrected in a timely manner.

Please note your final exam schedule as soon as soon you can! You must have 3 or more documented final exams on the same day to warrant a final exam day change. If you have the required 3 finals on the same day, bring your documentation to the laboratory manager for approval at least a week before the scheduled final exam time.

Please consult the Course Contract for further information on switching laboratories, exams, and how to handle class before the big game, holiday, etc.

FALL 2013 BISC 121Lg LABORATORY SYLLABUS

Lab Manager: Gorjana Bezmalinovic
 E-mail: bezmalin@usc.edu
 Office hours: Open door policy

ZHS 362

Tel/Fax: 213-740-6078

Laboratory Schedule:

Lab	Date	Laboratory	Lab Manual
Aug 27 – Aug 29		NO LAB THIS WEEK	
1	Sep 3 – Sep 5	Introduction to BISC 121 Labs Laboratory Safety and Skills	Chapter 1 & Appxs. A, B
2	Sep 10 – Sep 12	The Microscope	Chapter 2 & Appx. C
3	Sep 17 – Sep 19	Evolution	Chapter 3
Journal Club 1			
4	Sep 24 – Sep 26	Protists	Chapter 5
5	Oct 1 – Oct 3	Fungi	Chapter 6
(Cut the planarians!)			
	Oct 8 – Oct 10	LAB EXAM 1	(Chapters 1, 2, 3, 5 & 6)
6	Oct 15 – Oct 17	Animal Diversity I*	Chapter 9a
7	Oct 22 – Oct 24	Animal Diversity II	Chapter 9b
(Planaria Regeneration lab report due)			
8	Oct 29 – Oct 31	Plant Diversity I and II	Chapter 7 & 8
(Start the plates!)			
9	Nov 5 – Nov 7	Bacteria*	Chapter 4
10	Nov 12 – Nov 14	Ecological Relationships	Chapter 10
Journal Club 2 (Antibiotics lab report due)			
	Nov 19 – Nov 21	LAB EXAM 2	(Chapters 4, 7, 8, 9 & 10)
(Lab manuals due!)			
Nov 26 – Nov 28		NO LAB – THANKSGIVING	
11	Dec 3 – Dec 5	Biodiversity Presentations	
(Lab manuals, lab reports and lab exams returned)			

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



Tide Pools Field Trip – Nov 2 and Nov 3, 2013.

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

Required Textbooks available at the USC bookstore:

[General Biology Laboratory Manual FALL 2013, BISC 120 & BISC 121 Course – USC](#). (Available at the USC bookstore after August 25, 2013.)

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 (**360 points**) will count for 36% of your final course grade, distributed as follows:

Lab Quizzes (10 – 5 points each)	50 pts
Lab Write-ups (10 – 5 points each)	50 pts
Lab Reports (2 – 35 points each)	70 pts
Lab Exam (2 – 50 points each)	100 pts
Journal Club (2 – 15 points each)	30 pts
Tide Pools Field Trip	20 pts
Biodiversity Presentation	30 pts
Lab Participation	10 pts

LABORATORY PERFORMANCE GUIDELINES

1. You are required to attend all lab sessions. Any unexcused absences will seriously affect your evaluation. Come to lab on time. You are also to remain for the entire lab session or until excused by your instructor. Don't make other appointments for the time you are scheduled to be in lab.

Students who are within 10 points of a grade borderline at the end of the semester will be considered for an upgrade based on the following criteria: class participation, attendance, coming to office hours, and subjective evaluation by the TA, Lab Manager, and faculty.

2. 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.

3. **LAB QUIZZES:** Each student will take a quiz during the first 5 minutes of each lab session. Students coming late to lab without a valid 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 5 questions, 3 will test you on the knowledge of the material you will be covering that day in lab, and the other 2 will test you on the results from the previous lab.

4. **LAB WRITE-UPS:** 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. Lab manuals will be collected for grading at the end of the semester.

5. **LAB REPORT:** 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.

6. **LAB EXAM:** 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 – 5, while labs 6 – 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 practical exam due to a serious illness or an emergency, you must present a valid excuse to the Lab Manager **within 48 hours** of the missed exam. A valid excuse is considered to be a statement that you were seen by a doctor, the doctor's name and phone number, and authorization for us to discuss with the doctor whether you were too ill to take the exam, which we will do. Note that neither you nor the doctor need tell us the nature of your illness. If you have a valid excuse, 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.

7. **MISSED LABS:** If you miss a scheduled lab exercise due to illness or emergency, please contact immediately the Lab Manager to see whether it will be possible to make up the exercise by attending an alternative lab section. Please tell her what lab section you are in, who your TA is, and when you want to make up the missed lab (days and times that would work best for you). For logistical reasons, it will not be possible to make up a missed lab exercise after Thursday afternoon of the week in question. Therefore, students with labs scheduled on Thursdays will have little or no alternative should they miss lab unexpectedly. Please note that no lab switching will be allowed during the week prior to a holiday. Athletes who must miss occasional labs for legitimate reasons should bring documentation to the Lab Manager well in advance, at least 2 weeks, to arrange alternatives. 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: www.usc.edu/programs/religious_life/calendar/university_policy_on_absences.html. Requests for such absences should be made by email addressed to the Lab Manager at least 2 weeks in advance of the absence. If the absence is approved, a reasonable accommodation will be determined.

8. **JOURNAL CLUB:** Dr. Caron and Dr. Fuhrman will each lead a journal club discussion of one peer-reviewed scientific paper related to the course lecture material. You are responsible for reading and understanding the scientific papers and you are expected to participate in the discussion of the papers during journal club.

9. **TIDE POOLS FIELD TRIP:** This project is designed to provide you with an opportunity to explore the marine (intertidal) environment, observe animals and plants from a diverse array of phyla/divisions, and learn how animals and plants interact with each other and their environment. We will go to the beach located between the *Royal Palms State Beach* and *Point Fermin Park* in San Pedro. All the necessary information regarding this field trip will be posted on Blackboard (<https://blackboard.usc.edu/>) at the beginning of the semester.

10. **BIODIVERSITY PRESENTATION:** Detailed information about this assignment will be posted on Blackboard (<https://blackboard.usc.edu/>) under Course Documents.

POSTING GRADES: You can find your lecture and lab grades on Blackboard: <https://blackboard.usc.edu>. Lecture exam scores are posted under **LECTURE SECTION**. All lab grades are posted under your **LAB SECTION**. Be sure to check for additional postings on a regular basis. It is the student's responsibility to notify his/her TA or Lab Manager ASAP in the event of any mistakes, so please check your scores on Blackboard weekly.

LABORATORY SCORE NORMALIZATION: The laboratory scores will be normalized at the end of the semester by the Lab Manager to correct for differences in grading between TAs. In this procedure, the mean total score of all students in each TAs labs 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 Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. **The letter needs to be delivered to the Lab Manager** as early in the semester as possible, preferably **by Sep 6, 2013**. For more information, you can visit the DSP office in STU 301 (8:30-5:00, M-F), call at 213-740-0776, email at ability@usc.edu, or go to their 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** (file posted on Bb). 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/>. It is a violation of academic integrity to either use someone else's clicker in the classroom to assist that person in gaining points, or lend your assigned clicker to another student.