

## BISC 220 (General Biology: Cell Biology and Physiology), Fall 2016

### A. Lecture Schedule

Lecture	Date	Day	Topic	Campbell Biology – 10 <sup>th</sup> Ed.
1	Aug 23	Tu	Introduction; Biomolecules; Water	Ch 1 - 5
2	Aug 25	Th	Cells 1	Ch 6
3	Aug 30	Tu	Cells 2	Ch 6
4	Sep 1	Th	Cell Membranes	Ch 7
5	Sep 6	Tu	Cell Communication 1	Ch 11
6	Sep 8	Th	Cell Communication 2 *	Ch 11
7	Sep 13	Tu	Metabolism 1	Ch 8
8	Sep 15	Th	Metabolism 2	Ch 8, 9
---	Sep 20	Tu	<i>EXAM 1 (lectures 1-7)</i>	---
9	Sep 22	Th	Metabolism 3	Ch 9
10	Sep 27	Tu	Photosynthesis	Ch 10
11	Sep 29	Th	Cell Cycle; Mitosis	Ch 12
12	Oct 4	Tu	Microtubules	Ch 12
13	Oct 6	Th	Meiosis **	Ch 13
---	Oct 11	Tu	<i>EXAM 2 (lectures 8-13)</i>	---
14	Oct 13	Th	Cardiovascular System 1	Ch 42.1 - 42.4
15	Oct 18	Tu	Cardiovascular System 2	Ch 42.1 - 42.4
16	Oct 20	Th	Respiration	Ch 42.5 - 42.7
17	Oct 25	Tu	Immunity 1	Ch 43
18	Oct 27	Th	Immunity 2	Ch 43
19	Nov 1	Tu	Fluid and Electrolyte Balance 1	Ch 44
20	Nov 3	Th	Fluid and Electrolyte Balance 2	Ch 44
---	Nov 8	Tu	<i>EXAM 3 (lectures 14-19)</i>	---
21	Nov 10	Th	Endocrine System 1 ***	Ch 45
22	Nov 15	Tu	Endocrine System 2	Ch 45
23	Nov 17	Th	Reproduction	Ch 46
24	Nov 22	Tu	Neuronal Signals 1	Ch 48
---	Nov 24	Th	<i>Holiday (Thanksgiving Day)</i>	---
25	Nov 29	Tu	Neuronal Signals 2; Motor System 1	Ch 48, 50.5
26	Dec 1	Th	Motor System 2	Ch 50.5
	Dec 8	Th	<i>EXAM 4, 11 am -1 pm (lectures 20-26)</i>	

\* Friday, September 9 is the last day to drop without a mark of "W" and with tuition refund.

\*\* Friday, October 7 is the last day to drop without a mark of "W" and without tuition refund.

\*\*\* Friday, November 11 is the last day to drop with a mark of "W".

## B. General Course Description and Policies

### Catalog Description

Biological Sciences 220Lg – General Biology: Cell Biology and Physiology (4 units)  
In-depth survey of key topics related to advances in our knowledge of cellular biology and physiology; cell composition/metabolism; gene action; organism structure and function. *Recommended preparation:* high school chemistry; BISC 120Lg or BISC 121Lg. Duplicates credit in BISC 110L, BISC 111L, and BISC 221L.

### Instructor

Albert Herrera      HNB 116      Phone 213-740-9177      [aherrera@dornsife.usc.edu](mailto:aherrera@dornsife.usc.edu)

To meet with Dr. Herrera:

- Q&A Sessions will be held twice weekly to discuss course material (see below).
- Office hours for discussion of confidential matters will be held by appointment.

### Laboratory Manager

Gorjana Bezmalinovic, ZHS 362, [bezmalin@usc.edu](mailto:bezmalin@usc.edu), Phone/Fax 213-740-6078  
Office hours: Open door policy

### Laboratory Instructors

Misagh Bagherian, [bagheria@usc.edu](mailto:bagheria@usc.edu)  
Zohreh Baharvand Irannia, [baharvan@usc.edu](mailto:baharvan@usc.edu)  
Yinjian Zhao, [yinjianz@usc.edu](mailto:yinjianz@usc.edu)

### Textbooks

- *Campbell Biology*, by Reece et al., 10<sup>th</sup> edition, 2014.  
N.B. – Although the 10<sup>th</sup> edition is the official textbook for the class, it is not substantially different from the 9<sup>th</sup> edition. Students interested in saving money may opt for the older version. However, such students should consult the newer version to transpose the reading assignments and check for differences. A few copies of the 10<sup>th</sup> edition will be placed in Bio-space (ZHS 360A).
- *General Biology Laboratory Manual, BISC 220/221, Spring 2016*, available at USC Bookstore after August 1, 2016.
- Optional: Adams & Crawley (2013), *Van de Graaff's Photographic Atlas for the Biology Laboratory*, 7<sup>th</sup> Edition, Morton Publishing Company.
- Optional: *A Short Guide to Writing about Biology*, by Pechenik, 8<sup>th</sup> edition, Pearson. (e-copy included with the USC custom textbook).

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

- All course materials, information, recordings, announcements, and grades will be posted on Blackboard until the end of the semester. Blackboard is to be used only for appropriate, course-related activities. Use for other purposes will result in disciplinary action.

### Lectures

- Lectures will be given TuTh 9:30-10:50 (Section #13022), in SLH 102.
- All lectures will be recorded and made available as streaming video and a downloadable audio podcast. Links to the download sites will be posted on Blackboard.
- We do not recommend these recordings as a substitute for regular attendance at lecture. They are best used for filling gaps in your notes, reviewing difficult material, and as a substitute for the occasional missed lecture. A particularly effective approach would be to view the recordings in small

groups, so that you can pause and discuss the material as you proceed. *It would be a serious mistake to use the recordings as an excuse to procrastinate. Given the breadth and depth of the material, you must not fall behind. Keep up with the lecture schedule!*

### **Laboratory (See Part B below for the complete laboratory syllabus)**

- The lab portion of the course will be offered on Thursday 2:00-4:50 pm, Thursday 5:00-7:50 pm, Friday 8:00-10:50 am, and Friday 11:00 am-1:50 pm in ZHS 369. *There will be no labs during the first week of the semester.*
- The laboratory is an integral and essential component of the course, intended to give you hands-on experience with the processes, tissues, and concepts discussed in the lecture part of the class, and to deepen your understanding of the scientific literature and science as a process.
- The purposes, policies, and procedures of the laboratory are fully explained in Part C of this syllabus and in the Laboratory Manual.
- Performance in the laboratory will account for one-third of each student's grade. The laboratory grade will be based on lab practical exams, lab reports, lab quizzes, lab participation, completeness of the lab manual, a group presentation on a classic scientific paper, and discussion of other students' presentations. See the Grading Table below for point values of each of these components.

### **Lecture Exams**

- Lecture exams 1 - 3 will be given during the lecture period, 9:30 - 10:50 am, on the following 3 Tuesdays: September 20, October 11, and November 8. Lecture exam 4 will be given at the scheduled time of the final exam, 11:00 am - 1:00 pm on Thursday, December 8. Each of the 4 lecture exams will cover approximately one-quarter of the lectures. See the lecture schedule for details of exam coverage. There will not be a comprehensive final. Exam locations will be announced.
- Exam 1: Tuesday, Sep 20, 9:30 - 10:50 am  
Exam 2: Tuesday, Oct 11, 9:30 - 10:50 am  
Exam 3: Tuesday, Nov 8, 9:30 - 10:50 am  
Exam 4: Thursday, Dec 8, 11:00 am - 1:00 pm
- Lecture exams will be composed entirely of multiple choice and true/false questions. Answers will be submitted on Scantron forms. These exams will cover lecture subjects only; laboratory subjects will not be covered. The emphasis will be on using the lecture information to solve novel problems (see comments on quizzes below).
- Students may use the entire scheduled period to complete each of the 4 exams but they need not, i.e., they can submit their completed exam and leave the room when they wish. *However, students who arrive late, after the first student has left the exam room, will not be allowed to start the exam. Such late-arrivers will receive a score of zero for that exam. **Please do not be late for exams.***

### **Instructor-Led Exam Reviews**

- For Exams 1-3, Dr. Herrera will hold an exam review on the preceding Thursday, i.e., on Sep 15, Oct 6, and Nov 3, at times and locations to be announced. The review for Exam 4 will be held on Tuesday, Dec 6, at a time and place to be announced.
- Exam reviews will be recorded, webcast, and archived like the Q&A sessions (see below).

### **Twice Weekly Question & Answer Sessions**

- Tuesdays 1:00-1:50 pm in HNB 100  
Thursdays 4:00-4:50 pm in HNB 100 (moved to HNB 107 on Sep 8, Oct 13, and Nov 10)
- All Q&A sessions will be recorded and made available until the end of the semester. For best results, we recommend that you attend Q&A sessions in person. For some Q&A sessions, you will be able to

participate remotely via a live webcast which includes an interactive chat window (text only) for submitting questions. A link to the Q&A webcasts will be posted on Blackboard.

- *Please attend or log in to the Q&A sessions, even if you have never done so before. Don't feel pressure to ask "good" questions, or any questions at all. Just listening is fine, as is asking straightforward questions like "Can you re-explain...", or "I just don't understand...". These are also great opportunities to get to know your instructor better. Besides answering questions, advice may be given on studying, time management, preparing for medical school and other graduate/professional programs, research opportunities, etc. Frequent attendance at Q&A sessions is one of several factors that favor boosting your grade in borderline cases (see Grading, below).*

### **Instructor Office Hours**

Please contact the instructor directly for office hour appointments. Office hours are intended for discussion of individual, confidential matters such as grades. Course subject matter and other public issues should be discussed in Q&A sessions so all students can benefit from the interchange.

### **Lecture Quizzes**

- A small percentage of the overall grade will be based on 13 quizzes, administered online via Blackboard. The quizzes will be posted by 1:00 pm each Friday beginning September 2 and continuing through November 25. Quizzes must be completed by 9:00 am the following Monday. The deadline for the last quiz (Quiz 13), posted on the day after Thanksgiving, will be extended until 9:00 am on Wednesday November 30. For each quiz, questions will cover the previous week's material. Answers to most quiz questions will be revealed and discussed in the Q&A sessions in the week following the Monday deadline. Quiz results that are particularly pertinent to our teaching and learning goals may be discussed in class during the first lecture after the deadline. Prior to each lecture exam, all preceding quiz answers will be posted.
- Our intention is to make these lecture quizzes challenging, to help you prepare for the more point-heavy lecture exams. *Being able to look up answers and memorize is only the first step. To do well in this course, you must also be able to apply your knowledge to solve novel problems.* The quizzes are designed to give you low-stakes practice at this and thus gauge your level of preparation for exams.
- This approach will only work, however, if you take the quizzes seriously and responsibly. You may consult your textbook and any other printed or electronic material. You may also discuss the quiz questions with fellow students, if those discussions focus on understanding the underlying principles. You should not simply share or reveal your answers to other students, for several reasons. First, you will not know until after the deadline whether your answer is correct. Second, you will deprive that student of a learning opportunity. Third, you will diminish your own chances for a better grade by broadcasting your hard-won answers. The quizzes will require a disproportionately large amount of effort – on our part to craft challenging questions, and on your part to discern and understand the correct answers. It is likely that students who cheat by merely copying other students' quiz answers will pay a price on exam days. Please don't be one of those students.
- In recent years, most students came to see the quizzes as one of the most challenging parts of the course, but also one of the most valuable. If you take the quizzes seriously, we think you will come to the same conclusion.

## Grading

	Item	Pts Each	Number	Total	Portion Totals
<b>Lecture</b>	Lecture Exams	150	4	600	
	Online Quizzes	3	13	39	Lecture = 639 pts
<b>Lab</b>	Lab Practical Exam 1 (labs 1-4)	55	1	55	
	Lab Practical Exam 2 (labs 5-9)	55	1	55	
	Lab Reports	45	2	90	
	Lab Quizzes	7	9	63	
	Lab Participation	2	9	18	
	Lab Manual	2	9	18	
	Classic Literature Presentation	62	1	62	Lab = 361 pts
					Course total = 1000 pts

- All grades will be posted on Blackboard. Points associated with the lecture (exam scores, online quiz points) will be posted on the Blackboard site for the lecture. Points associated with the lab (lab practical exams, lab reports, quizzes, participation and lab manual, presentation, discussion of other presentations) will be posted on the Blackboard site for the laboratory. We will try diligently to maintain these Blackboard gradebooks accurately, but mistakes may occur. Please check your scores often and notify your Lab Instructor or the Lab Manager as soon as possible if you notice errors.
- After each lecture exam, an advisory curve will be posted to help students gauge their standing in the class.
- Final grades will be determined according to a curve. Any score within 10 points of the next highest grade will be considered a borderline grade. In such cases, instructors will consider whether to add up to 10 points to increase the grade to the next step. These points will be awarded based on a subjective evaluation of factors such as participation in the laboratory, attendance at Q&A sessions, effort, achievement relative to abilities, background, record of improvement, and other mitigating circumstances.
- If necessary, laboratory scores will be adjusted to correct for differences in grading between Laboratory Instructors.
- Points will only be given for the items listed above. No extra credit will be given.

## 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. Specific policies regarding exams are explained in the next section.

## Exam Policies

- If you feel an error was made in the grading of an exam question, you may submit the question for a re-grade according to the following procedure. First, prepare a written statement explaining why your answer deserves more credit, using the Regrade Request Form available on Blackboard. Second, submit this statement and your entire original exam to your Laboratory Instructor within one week of when the exam was returned to you. *The entire answer will be re-graded, not just the part you think deserves more credit. In addition, the instructors will review the grading of the entire exam to check for errors in grading. Your grade may go up or down as a result of this re-examination.* Be aware that we usually make copies of corrected exams before we return them, to ensure that students do not alter

their answers before submitting them for a re-grade. Altering an answer is considered a serious violation of academic integrity. Please see the section on Academic Integrity (below) for additional information.

- No make-up exams will be given.
- 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 or quiz for a legitimate reason, and wish to ask for an accommodation, you should proceed as follows. Within 48 hours of the start of the missed exam, 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 "curved" 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 Exam 4 and you provide a convincing, well-documented excuse to the Lab Manager within 48 hours of the start of the scheduled exam time, a course grade of Incomplete (IN) will be assigned. It will be your responsibility to contact the instructors to arrange for a make-up version of Exam 4 so that a final grade can be assigned. You will have a year to complete the requirements for removal of the IN. After this, your grade will change to an IX (Lapsed Incomplete), which counts as an F in the GPA. If you miss Exam 4 and do not submit a valid excuse, a course grade will be calculated based on your other scores and a zero for Exam 4.
- Each student must take Exam 4 at the designated time, according to her/his registered lecture section. Keep this in mind as you plan your studying for this and other courses during the final exam period. Do not make travel plans that conflict with your assigned Exam 4 time.

### Supplemental Instruction

- We strongly recommend that students participate actively in the peer-led Supplemental Instruction program (<http://dornsife.usc.edu/supplemental-instruction/>). The SI leaders will hold regular study sessions beginning in the second week of classes. They will also conduct review sessions before each exam. Further information about the SI program as well as schedules and weekly worksheets can be found at <http://www.usc.edu/si>.
- The Supplemental Instruction leader for BISC 220 will be Pratik Doshi. Pratik can be contacted at [bisc220sileaders@gmail.com](mailto:bisc220sileaders@gmail.com). The schedules for SI sessions and exam reviews will be posted at [www.dornsife.usc.edu/session-schedules](http://www.dornsife.usc.edu/session-schedules). SI leaders are selected for the high grades they earned in assigned courses and for their overall academic strength, success in advanced biological studies, and superior communication skills. We highly recommend them as sources of academic and pre-professional advice.

### Academic Integrity

- Our university depends on honesty, integrity, and ethical behavior among its members. Among other things, students' ethical behavior includes respecting the intellectual property of others, submitting

individual work unless otherwise directed by the instructor, protecting one's own academic work from misuse by others, and avoiding the use of another's work as one's own.

- We have reliable, time-tested methods for detecting cheating, plagiarism, and other violations of academic integrity. *Please note that sanctions for violations are severe.* This is necessary to protect the integrity of grades and the academic process. The minimum sanction is usually an F for the course. Suspension or expulsion from the university is also possible in egregious cases or for repeat offenses.
- Here is a partial list of actual violations that have been perpetrated by BISC 220 students in recent years. The numbers in parentheses refer to relevant paragraphs in the University Governance section of SCampus (see resource 5 in the list below). *Most of these students received grades of F and were reported to the Office of Student Judicial Affairs and Community Standards.*
  1. Copying answers from other students during lecture or lab exams. (11.13)
  2. Submitting lab reports containing substantial portions plagiarized from other students. (11.11, 11.12)
  3. Use of Blackboard resources for commercial gain (11.19)
  4. Selling class notes and material downloaded from Blackboard to a web-based company that re-sells such material. (11.12B)
  5. Re-submission of a lab report written by the same student in an earlier semester. (11.16)
  6. Altering answers on a graded exam and submitting the altered exam for re-grading. (11.13B)
  7. Continuing to write answers on an exam after time has been called. (11.21)
  8. Unauthorized use of personal electronic devices, e.g., smartphones, during exams. (11.13)
  9. Students using multiple clickers to gain participation points for non-attending students. (11.18)*- All of these offenses were considered serious and resulted in disciplinary action. Do not do them!*
- Resources on academic integrity standards, policies, and expectations:
  1. Trojan Integrity Guide: <http://www.usc.edu/student-affairs/SJACS/forms/tio.pdf>
  2. Guide for Avoiding Plagiarism: <http://www.usc.edu/student-affairs/SJACS/forms/tig.pdf>
  3. Overview of Academic Integrity: <http://www.usc.edu/student-affairs/SJACS/forms/AcademicIntegrityOverview.pdf>
  4. Tutorial on Academic Integrity: [http://www.usc.edu/libraries/about/reference/tutorials/academic\\_integrity/index.php](http://www.usc.edu/libraries/about/reference/tutorials/academic_integrity/index.php)
  5. SCampus (University Governance, paragraph 11): <http://web-app.usc.edu/scampus/1100-behavior-violating-university-standards-and-appropriate-sanctions/>
  6. Scientific Misconduct: <http://policy.usc.edu/scientific-misconduct/>

### Other Conduct Issues

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* (<http://equity.usc.edu/>) or to the *Department of Public Safety* (<http://capsnet.usc.edu/departments/departments-public-safety/online-forms/contact-us>). Call DPS at 213-740-4321 if you need immediate assistance or to report a crime. Reporting such incidents is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The *Center for Women and Men* (<http://www.usc.edu/student-affairs/cwm/>) provides 24/7 confidential support, and the Sexual Assault Resource Center webpage (<http://sarc.usc.edu>) describes reporting options and other resources.

### 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 and should be delivered to the Lab Manager early in the semester, at least three weeks before Exam 1. If a student's approved accommodation is limited to extra time on examinations, the teaching staff of BISC 220 will provide the accommodation. For any other accommodation, such as a private room, reader, scribe, etc., students must make arrangements with the DSP office at least 2 weeks before the exam date. For more information, you can visit the DSP office in GFS 120 (8:30-5:00, M-F), call at 213-740-0776, email at [ability@usc.edu](mailto:ability@usc.edu), or go to their website: [http://sait.usc.edu/academicsupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html).

### **Policies Concerning Student-Athletes**

Student-athletes may not be penalized when University-sanctioned competitions conflict with course activities or examinations. When a class will be missed for a sanctioned competition, it is the student-athlete's responsibility to approach the instructor in advance. The student-athlete must provide the instructor with a letter from Magdi El Shahawy, Director of *Student-Athlete Academic Services* (SAAS, <https://saas.usc.edu/>). The letter must certify that the competition is a University-sponsored event that deserves accommodation. Accommodations will not be made for other types of conflicting events. Details on the University's policy can be found at <http://www.usc.edu/admin/provostoffice/ocaaa/guidelines.html>. Arrangements for the accommodation must be agreed upon in advance of the event. If multiple team members will be absent, each must make an individual arrangement with the instructor. If an assignment is due on the date when class is missed, the instructor may require that it be turned in before the missed class or at the first class meeting after the student returns. If a test has been scheduled for the date when class is missed, the instructor may arrange with SAAS to have the test administered by an academically qualified proctor (not a coach) during the trip. Alternatively, the instructor may agree to pro-rate the exam score, i.e., substitute the missing exam score with a score based on the average of the student's scores for the other exams compared to the class average for those exams.

### **Email Communication**

To ensure privacy, only students' USC accounts (*usc.edu* domain name) can be used for email communications regarding confidential matters. Other email accounts cannot be used. Students are responsible for understanding the content of official messages that instructors send to their USC accounts. Therefore, each student must check their USC email regularly and make sure their account is not over quota, so new messages can be received.

### **Emergency Preparedness / Course Continuity**

If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* (<http://emergency.usc.edu/> or 213-740-9233) will provide information related to safety and course continuity. We expect that instruction will be continued by means of Blackboard, teleconferencing, and other technologies. Alternative assignments may be given if classes are canceled for prolonged periods. If you have not already done so, please register with TrojansAlert (<https://trojansalert.usc.edu/>) to facilitate communication during emergencies.



## C. Laboratory Syllabus

Lab Schedule:

Wk	Dates	Exercises	Manual	Lab No.
1	Aug 23 - Aug 26	NO LABS THIS WEEK	---	---
2	Aug 30 - Sep 02	Introduction to BISC 220 Labs & Macromolecules	Ch 1	1
3	Sep 06 - Sep 09	<b>Enzymes*</b>	Ch 2	2
4	Sep 13 - Sep 16	Cell Physiology	Ch 3	3
5	Sep 20 - Sep 23	Photosynthesis (Lab Report 1 due)	Ch 4	4
6	Sep 27 - Sep 30	LAB PRACTICAL EXAM 1	Chs 1 - 4	---
7	Oct 04 - Oct 07	<b>Cellular Respiration and Fermentation*</b>	Ch 5	5
8	Oct 11 - Oct 14	DNA Technology and Genetic Engineering	Ch 6	6
9	Oct 18 - Oct 21	Cardiovascular System (Lab Report 2 due)	Ch 7	7
10	Oct 25 - Oct 28	Kidney Structure and Function	Ch 8	8
11	Nov 01 - Nov 04	The Human Nervous System	Ch 9	9
12	Nov 08 - Nov 11	LAB PRACTICAL EXAM 2	Chs 5 - 9	---
13	Nov 15 - Nov 18	Classic Literature Presentations	---	---
14	Nov 22 - Nov 25	THANKSGIVING – NO LABS	---	---
15	Nov 29 - Dec 02	Classic Literature Presentations	---	---

**\*Exercises for which 5-7 page, typed lab reports are required. Guidelines are posted on Blackboard.**  
The Lab Manager reserves the right to make some adjustments to the lab syllabus during the semester.

### 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 expected to remain for the entire lab session or until excused by your instructor. Do not make 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 Lab Instructor before leaving.
- *No eating or drinking is allowed in the laboratory under any circumstances.*

### Lab Quizzes

- In the first 5 minutes of each of the 9 lab meetings when lab exercises are planned, a 7-point quiz will be given. Four of the 7 points will be based on that day's lab exercise, i.e., the one you are about to perform. The remaining 3 points will be based on the previous exercise.
- Students who come late to lab without a legitimate and verifiable excuse will not be allowed to make up the quiz.

### Lab Reports

- Appreciation of the scientific method and development of scientific literacy are among the main goals of the laboratory portion of the class. Accordingly, formal lab reports will be strongly emphasized. Instructions on writing lab reports are given in the document entitled "*Format and Guidelines for BISC 220 Lab Reports*." These instructions are summarized in the document "*Summary Guidelines for BISC 220 Lab Reports*." Both documents will be posted on Blackboard.
- Two lab reports will be written during the semester. Lab reports must be submitted electronically via Turnitin, using the link provided on the Blackboard site for the lab section. Specific instructions on how to upload lab reports will be emailed to each student. It is each student's responsibility to confirm that their lab reports were successfully uploaded. *In addition, you must submit a paper copy to your Laboratory Instructor at the beginning of the lab session when it is due* (see Lab Schedule above).

### Lab Practical Exams

- Two lab practical exams will be given to test your understanding of the topics and exercises covered in the laboratory sessions. The first lab practical exam will cover material from labs 1 - 4. The second lab practical exam will cover material from labs 5 - 9.
- *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, you must present a valid excuse to the Laboratory Manager, Gorjana Bezmalinovic ([bezmalin@usc.edu](mailto:bezmalin@usc.edu)) within 48 hours of the missed exam. A valid excuse is considered to be an official statement from your doctor, together with authorization for us to discuss your excuse with your doctor, which we will do. If you were seen at the USC Engemann Student Health Center, you should present their "Professor's Limited Discussion Form." Note that neither you nor the doctor need tell us the nature of your illness, but we do need to verify that you were too ill to take the exam. If you miss a lab exam for non-illness related reasons, you must provide similarly convincing documentation of the emergency to the Lab Manager within 48 hours. 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.

### Classic Literature Presentation and Participation

- The last two lab meetings of the semester are reserved for PowerPoint presentations on classic papers from the cell biology/physiology literature and their relation to modern papers. The goals of this

assignment are to give you a greater appreciation of the scientific literature and science as a process, as well as to work and communicate collaboratively with fellow students.

- Briefly, groups of 3 students will pick one classic paper from a list of several dozen papers that will be provided. All these papers are widely recognized as having had a major impact on the evolution of our understanding of cell biology or physiology. Each group must then find a recent paper (published within the past 5 years) that directly follows from the classic paper. In the PowerPoint presentation, groups must explain the findings in the classic and modern paper, explain the connection between the two papers, discuss the significance of both studies, and suggest some follow-up experiments that should be done.
- Complete and detailed instructions for this assignment will be presented during the first lab meeting and in the document “*Classic Literature Presentation and Participation*” posted on Blackboard.
- Credit will be assigned to each group based on the clarity of their presentation, understanding of the material, fulfillment of all aspects of the assignment, and their abilities to lead a discussion on the topic and to answer questions. Credit will also be given to non-presenting students based on their participation in discussing the presentations of others.

### **Lab Participation and Lab Manual**

- A total of 36 points will be awarded on the basis of lab participation (18 pts) and completeness of your lab manual (18 pts). We expect you to come to lab well-prepared and ready to contribute positively to the academic atmosphere. We also expect you to complete all aspects of the lab exercises, and to record data, observations, and answers to post-lab questions in your lab manual every week. Each student is required to show his/her Lab Instructor the lab manual before leaving the lab and obtain their signature. Lab manuals will be checked periodically throughout the semester (they will not be collected at the end of the semester). See the section above entitled “Laboratory Performance Guidelines” for more information on how lab participation points will be assigned.

### **Missed Lab Meetings**

- If you miss a scheduled lab exercise due to illness or emergency, please contact Lab Manager Gorjana Bezmalinovic ([bezmalin@usc.edu](mailto:bezmalin@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 Lab Manager Gorjana Bezmalinovic ([bezmalin@usc.edu](mailto:bezmalin@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 Laboratory Manager, Gorjana Bezmalinovic ([bezmalin@usc.edu](mailto:bezmalin@usc.edu)), at least 2 weeks in advance so alternatives can be arranged. See details above.
- Please note that no lab make-ups will be allowed during the week prior to a holiday and for activities unrelated to official university events.

### **Laboratory 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. In this procedure, the mean total score of all students in

each Lab Instructor's labs is compared to the mean total score of the entire class and each student's score is adjusted.

### **Some Dates to Remember**

August 22	First day of Fall semester classes
September 5	Labor Day, University Holiday
September 9	Last day to register, add classes, and drop without a mark of "W" with tuition refund
October 7	Last day to drop without a mark of "W" without tuition refund
November 11	Last day to drop with a mark of "W"
November 23-26	Thanksgiving Recess
December 2	Last day of Fall semester classes
December 3-6	Study days
December 8	Lecture Exam 4, 11 am -1 pm

### **Final Thoughts**

- Please forgive the length and detail of this syllabus. In a class like ours, with so many graded assignments and with grades so important to our students' academic and career goals, we feel it is important for everyone to know exactly what to expect.
- Rules and disclaimers aside, we hope that you will enjoy our mutual exploration of cell biology and physiology. The mechanisms we will study are of fundamental importance in all living things, and highly relevant to the understanding of human health and disease. We instructors promise to apply our decades of experience in teaching and research, as well as some of the latest pedagogical techniques, to present an interesting and informative course, assign grades fairly, and prepare you well for future studies in biology.