

BISC 221. Advanced General Biology: Cell Biology and Physiology. Spring 2021

Lecturers:	Office	Phone	Email	Office Hours
David McKemy, Ph.D.	HNB 201	213-821-5724	mckemy@usc.edu	By appointment
Bruce Yazejian, Ph.D.	HNB B20	213-740-2220	yazejian@usc.edu	By appointment

Lab Manager:	Office	Phone	Email	Office Hours
Gorjana Bezmalinovic	ZHS 362	213-740-6078	bezmalin@usc.edu	Zoom chat by request

Lab Instructors:	Dr. Bancroft/Dr. Spence (13192)	Eric Getz (13193 & 13195)	Kyla Kelly (13191 & 13194)
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Textbook: **Campbell Biology 12th ed.**; 11th edition acceptable as well

Websites: **Blackboard** <https://blackboard.usc.edu/> for detailed class notes, announcements and grades.

Lecture: MWF 10 – 10:50 am, via Zoom.

Labs: Tue 11-2, 2-5 and 5-8, Wed 11-2 and 2-5, via Zoom

Lecture Exams

Each semester will include 3 mid-term exams and a final exam (not cumulative). The exams will consist of multiple choice and true/false questions. Exams will be administered on Bb through *Respondus and Lockdown Browser* so make sure you download this program on your computer/laptop before semester starts.

Grading

Final grades are based on the total points earned in the course. The distribution of points is as follows:

Lecture exams 70% *Lab Assignments and Lab exam 30%*

The final course grade will be based on a total of 1000 points. **300** points will be based on lab performance (lab simulations, post-lab quizzes, homework assignments, peer review, report, presentation and lab exam). The remaining 700 points will be based on the lecture and reading materials: **700** points from the 4 exams (175 points each). In some cases, the instructors will consider whether to bump up a student based on their **subjective** evaluation of the following: participation in laboratory; effort; achievement relative to abilities, background, or circumstances; record of improvement. Laboratory scores will be standardized to correct for differences in grading between lab instructors.

Re-grades of Exam Questions

To request a re-grade, you must submit a re-grade request through email and attach a screenshot of the question and your answer. Re-grade requests must be submitted to the instructor within 1 week of the time scores were posted on Blackboard, along with an explanation of why you think your answer deserves credit.

Missed Exams

No make-up exams will be given in this course. If you miss a midterm exam due to illness you must email a valid medical excuse to the Lab Manager within one week of the missed exam. A photo of a doctor's note or a summary visit would be an acceptable document, and in that case your grade for that exam will be based on the average of your other midterm and final exam scores, called "prorating". If you miss an exam for a non-illness related reason, such as an emergency, you must provide similarly convincing documentation of the emergency to the Lab Manager within 24 hours. If you do not have a valid excuse, or fail to provide it within the allotted time, you will receive a zero for that exam. Students who wish to miss an examination 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> .

If you miss the final exam and have a valid medical excuse, the following options exist:

1. If the excuse is turned in to the Lab Manager within 48 hours of the missed final, a grade of incomplete (IN) will be recorded on the grade sheet and you will be permitted to take a makeup final during the following year. Receipt of an IN grade means that you can take the final exam the next time the course is offered and receive your grade for the course. Alternatively, you may request to take an oral exam at the beginning of the following semester. If your request is granted, the oral exam will be administered by the faculty lecturers from the semester you were enrolled in the course and one TA (not necessarily yours).
2. If no excuse is turned in to the Lab Manager within 48 hours of the missed final, a grade will be calculated on the basis of your other scores and a zero for the final. This grade will be submitted on the grade sheet and will remain your final grade UNLESS a valid medical excuse is provided to the Lab Manager within 2 days of the missed exam. In that case, your grade will be changed to an IN, which can be removed the following year as described above OR you may elect to keep the originally assigned grade by declining a makeup exam in writing.

N.B. -It is the policy of the USC student health center to not provide routine medical excuses (*i.e.*, they will not issue a slip stating that you were seen at the health center). Simply going to the health center is not a valid reason for missing an exam. If you are seriously ill and are seen by a doctor (at the health center or elsewhere), you must turn in a written notification to the Lab Manager as described above within one week of the missed exam.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from the DSP website. Please be sure to email the accommodations letter (PDF) to the Laboratory Manager as early in the semester as possible, [preferably by January 29, 2021](#). DSP is located in STU301 and is open 8:30a.m.–5:00p.m., Monday through Friday. The phone number for DSP is (213)740-0776. For more information, please visit the following website:

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

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. 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, while the recommended sanctions are located in Appendix A: <http://web-app.usc.edu/scampus/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. 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/> .

Month	Date	Day	Lectures	Themes	Topic	Lecturer	Reading
January	15	Friday	1	Biochemistry	Biochem 1 - Carbon, macromolecules. Carbs.	McKemy	1-5
	18	Monday			MLK Day		
	20	Wednesday	2	Biochemistry	Biochem 2 - Lipids, Proteins, Nuc. Acids	McKemy	5
	22	Friday	3	The Cell and its Functions	The Cell 1	McKemy	6
	25	Monday	4		The Cell 2	McKemy	6
	27	Wednesday	5		The Cell 3	McKemy	6
	29	Friday	6		Cell membranes 1	McKemy	7
February	1	Monday	7		Cell membranes 2	McKemy	7
	3	Wednesday	8		Cell communication 1	McKemy	11
	5	Friday	9		Cell communication 2	McKemy	11
	8	Monday	10	Energy & Cell Metabolism	Energy & cell metabolism 1 (on Midterm 2)	McKemy	8
	10	Wednesday			MIDTERM 1*	McKemy	
	12	Friday	11		Energy & cell metabolism 2	McKemy	8,9
	15	Monday			PRESIDENTS' DAY		
	17	Wednesday	12		Energy & cell metabolism 3	McKemy	9
	19	Friday	13		Energy & cell metabolism 4	McKemy	9
	22	Monday	14		Energy & cell metabolism 5	McKemy	10
	24	Wednesday	15	The Cell Cycle	The cell cycle 1 - Mitosis 1	McKemy	12
	26	Friday	16		The cell cycle 2 - Mitosis 2/Meiosis 1	McKemy	13
March	1	Monday	17		The cell cycle 3 - Meiosis 2	McKemy	13
	3	Wednesday	18	Genetics	Mendel & the Gene Idea	McKemy	14,15
	5	Friday	19		Molecular Basis of Inheritance	McKemy	16

	8	Monday	20	Organ systems introduction	General principles (on midterm 3)	Yazejian	40
	10	Wednesday			MIDTERM 2*	McKemy	
	12	Friday			Wellness Day		
	15	Monday	21	Nutrition & Circulation	Nutrition	Yazejian	41
	17	Wednesday	22		Circulation		42
	19	Friday	23				
	22	Monday	24	Gas Exchange	Gas exchange	Yazejian	42
	24	Wednesday	25	Immunity	Innate immunity		43
	26	Friday	26		Acquired immunity		43
	29	Monday	27	Excretion	Water balance	Yazejian	44
	31	Wednesday	28		Kidney		44
April	2	Friday	29	Endocrine	Chemical signals		45
	5	Monday	30		Pituitary	Yazejian	45
	7	Wednesday			Wellness Day		
	9	Friday	31		Endocrine	Yazejian	45
	12	Monday			MIDTERM 3*		
	14	Wednesday	32	Nervous system	Nervous system intro	Yazejian	48
	16	Friday	33		Membrane & action potentials		48
	19	Monday	34		Synapses	Yazejian	48
	21	Wednesday	35		Nervous system architecture		49
	23	Friday	36		Sensory systems		49
	26	Monday	37	Behavior	Muscles & movement	Yazejian	46
	28	Wednesday	38	Reproduction	Human fertilization, Birth		46
	30	Friday			Wellness Day		
May	10	Monday		8:00 – 10:00 am	MIDTERM 4*		

*Exams will be administered on Blackboard through *Respondus LockDown Browser*.
<https://www.youtube.com/watch?v=XuX8WoeAycs&feature=youtu.be>

BISC 221 LABORATORY SYLLABUS for LABS BASED ON LECTURE TOPICS
SPRING 2021

Lab Manager: Gorjana Bezmalinovic
bezmalin@usc.edu
 Office hours: 'Zoom chat' upon email request

Lab Instructors: TBA (13191 & 13194)

Laboratory Schedule for the two TUESDAY labs (13191 & 13194):

Lab #	The Week of	Laboratory
1	Jan 18 th	NO LABS THIS WEEK
2	Jan 25 th	Lab Safety & Intro to BISC 221 Labs
3	Feb 1 st	Pipetting
4	Feb 8 th	Introduction to Food Macromolecules
5	Feb 15 th	Experimental Design*/ Scientific Reading*
6	Feb 22 nd	Cell Membrane and Transport
7	March 1 st	Cellular Respiration/ Journal Club I
8	March 8 th	Pigment Extraction*
9	March 15 th	Cardiovascular Function During Exercise*
10	March 22 nd **	Antibodies*
11	March 29 th	Renal Physiology (lab report due)
	April 5 th	Endocrinology* (peer review due)
	April 12 th	Action Potential/ Journal Club II
	April 19 th	Lab Exam
	April 26 th	Disease Presentation

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

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










** 'Wellness Day' that affects lab schedule:

- **Tuesday, March 23** – no Zoom lab session/ simulation due on Wednesday/ watch the Zoom recording/ post-lab quiz due on Wednesday before the end of the day

Some minor changes might occur during the semester.

LABORATORY POINT DISTRIBUTION for LABS BASED ON LECTURE TOPICS

The laboratory portion (**300 points**) will count for **~30%** of your final course grade, distributed as follows:

-  *Labster* simulations (virtual labs) – 60 pts (12 x 5)
-  Homework assignment – 9 pts
-  Post-lab quizzes – 21 pts (3 x 7)
-  Scientific Reading – 10 pts
-  Journal Club – 20 pts (2 x 10)
-  Lab Report – 40 pts
-  Lab Report Peer Review – 10 pts
-  Disease 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 recorded on Blackboard (Bb) after you complete each simulation.

HOMEWORK & POST-LAB QUIZZES

You will have one homework assignment and three post-lab quizzes, based on the material you covered in lab, or data obtained in your lab experiments. Assignments will be posted on Bb. You will have one week to turn in your homework. Post-lab quizzes are due before the end of the day (before midnight) on the day of the lab.

PRE-LAB ASSIGNMENT – 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. This assignment will be done on Blackboard.

JOURNAL CLUB:

Dr. McKemy and Dr. Yazejian will each lead a journal club Zoom 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 each expected to participate actively in the discussion of the papers during the journal club.

DISEASE PRESENTATION

This assignment will be done in pairs. You will have to prepare a presentation about a specific disease 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 with 30 questions will be administered on Bb and students will have to be on Zoom during the exam. The exam 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 the DSP website. Please be sure to email the accommodations letter (PDF) to the Laboratory Manager as early in the semester as possible, **preferably by January 29, 2021**. 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.