

Prof. Albert Herrera
BISC 220 (General Biology: Cell Biology and Physiology), Fall 2021
Schedule for TuTh 9:30 - 10:50 am Lectures (Section 13022)
Tentative Lecture Schedule – Subject to Revision

Lecture	Date	Day	Topic	Campbell Biology, 12 th Ed
1	Aug 24	Tu	Course Introduction; Cells 1	Ch 6
2	Aug 26	Th	Cells 2	Ch 6
3	Aug 31	Tu	Cell Membranes	Ch 7
4	Sep 2	Th	Cell Communication 1	Ch 11
5	Sep 7	Tu	Cell Communication 2	Ch 11
6	Sep 9	Th	Metabolism 1*	Ch 8
7	Sep 14	Tu	Metabolism 2	Ch 8, 9
---	Sep 16	Th	<i>Exam 1 (lectures 1-7)</i>	-----
8	Sep 21	Tu	Metabolism 3	Ch 9
9	Sep 23	Th	Photosynthesis	Ch 10
10	Sep 28	Tu	Cell Cycle; Mitosis	Ch 12
11	Sep 30	Th	Cardiovascular System 1	Ch 42.1 - 42.4
12	Oct 5	Tu	Cardiovascular System 2	Ch 42.1 - 42.4
13	Oct 7	Th	Respiration 1**	Ch 42.5 - 42.7
---	Oct 12	Tu	<i>Exam 2 (lectures 8-13)</i>	-----
---	Oct 14	Th	<i>Fall Recess</i>	-----
14	Oct 19	Tu	Respiration 2	Ch 42.5 - 42.7
15	Oct 21	Th	Immunity 1	Ch 43
16	Oct 26	Tu	Immunity 2	Ch 43
17	Oct 28	Th	Fluid and Electrolyte Balance 1	Ch 44
18	Nov 2	Tu	Fluid and Electrolyte Balance 2	Ch 44
19	Nov 4	Th	Endocrine System 1	Ch 45
---	Nov 9	Tu	<i>Exam 3 (lectures 14-19)</i>	-----
20	Nov 11	Th	Endocrine System 2***	Ch 46
21	Nov 16	Tu	Neuronal Signals 1	Ch 48
22	Nov 18	Th	Neuronal Signals 2	Ch 48
23	Nov 23	Tu	Neuronal Signals 3	Ch 48
---	Nov 25	Th	<i>Thanksgiving Holiday</i>	-----
24	Nov 30	Tu	Motor System 1	Ch 50.5
25	Dec 2	Th	Motor System 2	Ch 50.5
	Dec 15	W	<i>Exam 4, (lectures 20-25)****</i>	

* Friday, September 10 is the last day to drop without a “W” and with tuition refund.

** Friday, October 8 is the last day to drop without a “W” on transcript only and without tuition refund.

*** Friday, November 12 is the last day to drop with a mark of “W”.

**** Note that the Exam 4 time is an (approved) exception to the regular final exam schedule.

Prof. Shirin Birjandi
BISC 220 (General Biology: Cell Biology and Physiology), Fall 2021
Schedule for TuTh 6:30 - 7:50 pm Lectures (Section 13021)
Tentative Lecture Schedule – Subject to Revision

Lecture	Date	Day	Topic	Campbell Biology, 12 th Ed
1	Aug 24	Tu	Course Introduction; Cells 1	Ch 6
2	Aug 26	Th	Cells 2	Ch 6
3	Aug 31	Tu	Cell Membranes	Ch 7
4	Sep 2	Th	Cell Communication 1	Ch 11
5	Sep 7	Tu	Cell Communication 2	Ch 11
6	Sep 9	Th	Metabolism 1*	Ch 8
7	Sep 14	Tu	Metabolism 2	Ch 8, 9
---	Sep 16	Th	<i>Exam 1 (lectures 1-7)</i>	-----
8	Sep 21	Tu	Metabolism 3	Ch 9
9	Sep 23	Th	Photosynthesis	Ch 10
10	Sep 28	Tu	Cell Cycle; Mitosis	Ch 12
11	Sep 30	Th	Cardiovascular System 1	Ch 42.1 - 42.4
12	Oct 5	Tu	Cardiovascular System 2	Ch 42.1 - 42.4
13	Oct 7	Th	Respiration 1**	Ch 42.5 - 42.7
---	Oct 12	Tu	<i>Exam 2 (lectures 8-13)</i>	-----
---	Oct 14	Th	<i>Fall Recess</i>	-----
14	Oct 19	Tu	Respiration 2	Ch 42.5 - 42.7
15	Oct 21	Th	Immunity 1	Ch 43
16	Oct 26	Tu	Immunity 2	Ch 43
17	Oct 28	Th	Fluid and Electrolyte Balance 1	Ch 44
18	Nov 2	Tu	Fluid and Electrolyte Balance 2	Ch 44
19	Nov 4	Th	Endocrine System 1	Ch 45
---	Nov 9	Tu	<i>Exam 3 (lectures 14-19)</i>	-----
20	Nov 11	Th	Endocrine System 2***	Ch 46
21	Nov 16	Tu	Neuronal Signals 1	Ch 48
22	Nov 18	Th	Neuronal Signals 2	Ch 48
23	Nov 23	Tu	Neuronal Signals 3	Ch 48
---	Nov 25	Th	<i>Thanksgiving Holiday</i>	-----
24	Nov 30	Tu	Motor System 1	Ch 50.5
25	Dec 2	Th	Motor System 2	Ch 50.5
	Dec 15	W	<i>Exam 4, (lectures 20-25)****</i>	

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** Friday, October 8 is the last day to drop without a “W” on transcript only and without tuition refund.

*** Friday, November 12 is the last day to drop with a mark of “W”.

**** Note that the Exam 4 time is an (approved) exception to the regular final exam schedule.

A. 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.

Instructors

Albert Herrera HNB 116 Phone 213-740-9177 aherrera@usc.edu

To meet with Dr. Herrera (via Zoom):

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

Shirin Birjandi SGM 611 <Phone> birjandi@usc.edu

To meet with Dr. Birjandi (via Zoom):

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

Laboratory Manager

TBN, ZHS 362, <email>, <Phone>

Office hours: <policy>

Laboratory Instructors

Prof. Nancy Castro, ncaastro@usc.edu (SEA-PHAGES Genomics sections and online sections)

Babak Hassanzadeh, bhassanz@usc.edu (regular lab sections)

Textbooks

- *Campbell Biology*, by Reece et al., 12th edition, 2020
N.B. – Although the 12th edition is the official textbook for the class, it is not substantially different from the 11th edition or even the 10th edition. Students interested in saving money may opt for one of the older editions.

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 Note: As of this writing (July 5), the plan is for both lectures to be presented remotely, via Zoom.

Lab sections will be held in-person and online as described below.

- Lectures will be given via live (synchronous) Zoom sessions on Tuesdays and Thursdays, 9:30-10:50 am PDT (for section 13022) or Tuesdays and Thursdays, 6:30-7:50 pm PDT (for section 13021). The sessions will start with students' video and audio muted, but students can turn on their cameras and audio at any time they wish. Questions during lecture are encouraged. Video and audio recordings of lectures will be posted on Blackboard the same day.

- We do not recommend these recordings as a substitute for regular participation in the live lectures. They are best used for filling gaps in your notes, reviewing difficult material, and as a substitute for the occasional missed lecture. *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 both online and in person. Lab sections on Wednesday 8:00-10:50 am and Wednesday 5:00-7:50 pm will be online. Lab sections on Thursday 11:00 am-1:50 pm, Thursday 2:00-4:50 pm, Thursday 5:00-7:50 pm, Friday 8:00-10:50 am, Friday 11:00 am-1:50 pm, and Friday 2:00-4:50 will be held in person in one of the ZHS lab rooms.
- The laboratory is an integral and essential component of the course, intended to give you 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 B of this syllabus.
- Performance in the laboratory will account for one-third of each student's grade.

Lecture Exams

- Times and coverage of lecture exams are as follows. All times are PDT.
Exam 1: Thursday, Sep 16, 6:30 - 7:30 pm, covering lectures 1-7
Exam 2: Tuesday, Oct 12, 6:30 - 7:30 pm, covering lectures 8-13
Exam 3: Tuesday, Nov 9, 6:30 - 7:30 pm, covering lectures 14-19
Exam 4: Wednesday, Dec 15, 9:00 - 10:00 am, covering lectures 20-25 (an exception to the usual time)
- Lecture exams will be administered in-person and will consist entirely of multiple choice and true/false questions. Details of the administration of exams will be announced later. Only lecture subjects will be covered on lecture exams; laboratory topics will be covered on separate lab exam and assignments. Please note: *Exam questions will not ask for rote repetition of information that can be easily memorized or looked up. Rather, questions will require you to use the lecture information to solve novel problems (see comments on quizzes below). Be prepared!*

Instructor-Led Exam Reviews

- For all 4 lecture exams, both instructors will hold an online review session via Zoom just before the exam. Dates and times of these review sessions will be announced. Exam reviews will be recorded and archived.

Twice Weekly Question & Answer Sessions

- Both instructors will host live Q&A sessions twice a week via Zoom. For Prof. Herrera, Q&A sessions will be held on Tuesdays 1:00-1:50 pm and Thursdays 4:00-4:50 pm. For Prof. Birjandi, Q&A sessions will be held on Mondays 1:00-1:50 pm and Wednesdays 1:00- 1:50 pm. All Q&A sessions will be recorded and posted on Blackboard.
- *Although they are not required, it is highly recommended that you participate in the Q&A sessions as often as you can. 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 your instructor directly for individual office hour appointments via Zoom. 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 August 21 and continuing through November 12. Quizzes must be completed by 9:00 am the following Monday (or Tuesday for Quizzes 1 & 7 – see table below). 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 session following the Monday deadline or anytime thereafter. 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.
- Here is the quiz schedule:

Quiz Number	Posted by 1 pm on Friday	Deadline 9 am on ...
1	Sep 3	Tuesday, Sep 7*
2	Sep 10	Monday, Sep 13
3	Sep 17	Monday, Sep 20
4	Sep 24	Monday, Sep 27
5	Oct 1	Monday, Oct 4
6	Oct 8	Monday, Oct 11
7	Oct 15	Tuesday, Oct 19*
8	Oct 22	Monday, Oct 25
9	Oct 29	Monday, Nov 1
10	Nov 5	Monday, Nov 8
11	Nov 12	Monday, Nov 15
12	Nov 19	Monday, Nov 22
13	Dec 3	Monday, Dec 6

**Note that deadlines are extended for quizzes 1 & 7.*

- 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

- 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 exam, lab report, quizzes, homework assignments, participation, 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 assignments listed in the syllabus. No extra credit will be given.

	Item	Pts Each	Number	Total	Portion Totals
Lecture	Lecture Exams	150	4	600	Lecture = 639 pts
	Online Quizzes	3	13	39	
Lab	Lab Assignments	-	-	-	Lab = 361 pts
					Course total = 1000 pts

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 contact one of the support services listed below, or bring them to the attention of one of the instructors. We may be able to offer accommodations. All such discussions will be confidential. Please seek help as soon as you feel your performance or well-being is affected.

Support Services

- Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents as soon as possible. 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. A list of offices to which one can report such incidents, as well as sources of support for other issues, follows.
- Student Health Counseling Services (213) 740-7711 – on call 24/7 engemannshc.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.
- National Suicide Prevention Lifeline (800) 273-8255 – on call 24/7 suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress.

- Relationship & Sexual Violence Prevention Services (213) 740-4900 – on call 24/7 engemannshc.usc.edu/rsvp Free and confidential therapy services, workshops, and training for situations related to gender-based harm.
- Office of Equity and Diversity - Title IX (213) 740-5086 equity.usc.edu, titleix.usc.edu Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.
- Bias Assessment Response and Support (213) 740-2421 studentaffairs.usc.edu/bias-assessment-response-support Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.
- Office of Disability Services and Programs (213) 740-0776 dsp.usc.edu Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs. Please see section below entitled “Students with Disabilities” for important course-specific information.
- USC Support and Advocacy (213) 821-4710 studentaffairs.usc.edu/ssa Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.
- Diversity at USC (213) 740-2101 diversity.usc.edu Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.
- USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – on call 24/7 dps.usc.edu, emergency.usc.edu Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.
- USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call dps.usc.edu Non-emergency assistance or information.

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 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. 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 the regular final examinations schedule. 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 designated 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 **TBD**. He may be contacted at bisc220si@gmail.com. The schedules for SI sessions and exam reviews will be posted at 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: A Guide to Understanding and Avoiding Academic Dishonesty: <https://sjacs.usc.edu/files/2015/03/tio.pdf>
 2. Trojan Integrity: A Guide for Avoiding Plagiarism: https://dornsife.usc.edu/assets/sites/903/docs/Trojan_Integrity_-_Guide_to_Avoiding_Plagiarism.pdf
 3. Overview of Academic Integrity: <https://sjacs.usc.edu/files/2015/11/Academic-Integrity-sheet-2013.pdf>
 4. Tutorials on Academic Integrity: <https://libraries.usc.edu/research/reference-tutorials>
 5. SCampus (see especially sections 11, 13, 15 and Appendix A): <https://policy.usc.edu/student/scampus/>
 6. Scientific Misconduct: <http://policy.usc.edu/scientific-misconduct/>

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, or go to their website: 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 Denise Kwok, Director of *Student-Athlete Academic Services* (SAAS) <https://saas.usc.edu/academic-support-services/travel/excused-absence-letter/>. 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: https://www.provost.usc.edu/ocaa_guidelines/. 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.

Students Who Are Repeating the Class

The faculty and staff of this course are dedicated to helping you succeed academically. If you are repeating this class because you had to withdraw, earned an unsatisfactory grade, or need to remove a mark of IN (Incomplete) from a previous semester, please take advantage of all the help we have to offer. You should try to attend every lecture, review the material promptly, complete all online and lab assignments to the best of your ability, prepare early for exams, and be ready to change your approach if initial results are not satisfactory. Above all, manage your time to maximize your academic and personal success. Please identify yourself and seek help from the instructors, the Lab Manager, and your SI Leader. We are here to help!

- Scientific Reading* – 15 pts
- Lab Report – 40 pts
- Lab Report Peer Review – 20 pts
- Disease Presentation – 30 pts
- Lab Exam – 150 pts

LAB SCORES

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

LABORATORY ATTENDANCE

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

LABSTER VIRTUAL LABS

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

POST-LAB QUIZZES

Bb post-lab quizzes will be due 24 hours after the end of your lab.

HOMEWORK

You will have one homework assignment based on the material you covered in lab, or data obtained in your lab experiments. Assignment will be posted on Bb.

SCIENTIFIC READING

You will have to read a peer-reviewed scientific paper, answer questions on Bb and participate in a lab discussion with your lab instructor and your labmates.

LAB REPORT PEER REVIEW

Each student will review one sample lab report. Instructions will be posted on Blackboard. This assignment will be done on Blackboard.

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](#).

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 will be administered on Bb. It will consist of multiple-choice questions, T/F, fill in the blanks, matching and short answers.

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

- If you miss a lab exam due to a serious illness, you must present a valid excuse to the Lab Manager **within 24 hours** of the missed exam. A valid excuse could 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 **at least 2 weeks in advance** of the absence. If the absence is approved, the student will be allowed to take the make-up lab exam.
- Student-athletes who will have to miss the lab exam due to a previously scheduled NCAA competition should bring the SAAS excuse letter to the Lab Manager **at least 2 weeks in advance** so alternatives can be arranged.

LAB SCORE NORMALIZATION

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

STUDENTS WITH DISABILITIES

Students requesting academic accommodations based on a disability are required to register with the Office of Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Be sure to email the accommodations letter (PDF) to the Laboratory Manager as early in the semester as possible, [preferably by Sep 10, 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.

CHANGING A LAB SECTION

During the first three weeks of classes you can change your 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 a lab section is currently closed you must wait until other students drop before you can switch into that section. No changes are allowed after the third week of classes. You are responsible for taking a screenshot of your scores from Blackboard **before** changing sections and emailing it to your lab manager so your scores can be transferred to the new section.

- Scientific Reading – 15 pts
- Lab Report Peer Review – 20 pts
- Lab Report – 40 pts
- Classic Literature Presentations – 56 pts
- Lab Exam – 126 pts

REQUIRED READING

[FALL 2021 BISC 220 General Biology Laboratory Manual](#). PDF will be posted on Blackboard and chapter printouts must be brought to lab each week.

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 have 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 knee-length lab coat. 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.

PRE-LAB QUIZZES

Each student will take a **Blackboard pre-lab quiz** prior to coming to lab each week. Quizzes will consist of multiple choice questions. Questions will test your knowledge of the material you will be covering that week in 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 Lab Instructor the lab manual before leaving the lab and obtain their signature. Lab manuals might be checked periodically throughout the semester.

HOMEWORK/POST-LAB ASSIGNMENTS

During the semester you will have three homework assignments, based on the data you obtain in your lab experiments. Assignments are explained in the lab manual and more information can be found on Bb.

SCIENTIFIC READING

You will have to read a peer-reviewed scientific paper, answer questions on Bb and participate in a lab discussion with your lab instructor and your labmates.

LAB REPORT PEER REVIEW

Each student will review one sample lab report. Instructions will be posted on Blackboard. This assignment will be done on Blackboard.

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](#).

CLASSIC LITERATURE PRESENTATIONS

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 can be found 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 EXAM

The cumulative lab exam will test your comprehension of the topics, concepts and exercises covered during the semester. Emphasis will be on application and analysis.

MISSED LAB EXAM

It is your responsibility to be present on the days of the lab exams. If you miss a lab exam due to a serious illness, you must present a valid excuse to the Lab Manager **within 48 hours** of the missed exam. A valid excuse is considered to be an official note from your doctor. 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 lab 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 exam.

MISSED LABS

If you miss a scheduled lab exercise **due to illness or emergency**, please contact the **Lab Manager** 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 only a 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: <https://orl.usc.edu/life/calendar/absences/>. 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, the instructors will determine a reasonable accommodation for the student.

Student-athletes who must miss occasional labs for legitimate reasons should bring or email the SAAS excuse letter to the Lab Manager 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, Thanksgiving break and for school-unrelated activities.

LAB SCORES

You can find scores for all 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 Blackboard scores weekly.

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 to email the accommodations letter (PDF) to the Laboratory Manager as early in the semester as possible, [preferably by September 10, 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 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.

SOME DATES TO REMEMBER

Aug 23	First day of Fall semester classes
Sep 10	Last day to register, add classes, and drop without a mark of "W" with tuition refund
Sep 6	Labor Day, University Holiday
Oct 8	Last day to drop without a mark of "W", on transcript only, without tuition refund
Oct 14-15	Fall recess
Nov 12	Last day to drop with a mark of "W"
Nov 24-28	Thanksgiving Break
Dec 3	Last day of Fall semester classes
Dec 4-7	Study days
TBD	Lecture Exam 4, Dec 15 at 9:00 AM

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.

BISC 220L General Biology Laboratory: SEAPHAGES Genomics

Department of Biological Sciences

University of Southern California

Course Overview

This course offers students an opportunity for a mentored research experience where they will learn how to apply the scientific method to make new discoveries and contribute to scientific knowledge.

A previously isolated phage genome that was sequenced by Howard Hughes Medical Institute will be provided to our lab section. Students will develop their research experience by learning how to annotate the genome of this phage. They will compare the genes identified in their phage to other phages that have been sequenced by the SEA-PHAGES program in order to appreciate the diversity of actinobacteriophages. At the end of the semester each student will be included as a co-author when the genomes are submitted to GenBank. Students in the course are part of the National Research Initiative funded by the Howard Hughes Medical Institute.

This class won't be like other classes you've taken or may take. There will be minimal lecturing by faculty, and we will instead utilize class time to do research and discuss scientific concepts relevant to our work. This course is an inquiry-guided learning experience, and it is meant to be students' first mentored research project. Some gene calls are more difficult than others, and sometimes there is no "correct answer." Students will be challenged to make the best calls they can with the current information that is available.

Faculty

Name	Email	Office	Office hours
Nancy Castro, PhD	ncastro@usc.edu	ZHS 256	TBD

Section Meeting Times

Section Meeting Times	Section/Course Number	Instructors	Email
Thursday 2:00 – 4:50 pm	13023	Nancy Castro	ncastro@usc.edu
Friday 8:00 - 10:50 am	13025	Nancy Castro	ncastro@usc.edu
Friday 11:00 – 1:50 pm	13026	Nancy Castro	ncastro@usc.edu
Friday 2:00 – 4:50 pm	13030	Nancy Castro	ncastro@usc.edu

Textbook

No textbook is required. The required readings for the course include the SEA-PHAGES Bioinformatics Guide, content unique to this course, and recently published papers on the course topic. They will be available on Blackboard.

Blackboard

Course materials and announcements will be posted on Blackboard. You are expected to check regularly for lecture notes, assignments, announcements, and other material. Main communication with the class will be via Blackboard announcements. If you need help accessing BB, contact the computer help desk at 213-740-5555.

Course Policies

Attendance is mandatory for each lab session and there will be no make-up labs. BISC 220L SEA-PHAGES section is an authentic, research-based course, so making regular progress on your research project is dependent on regular lab attendance and group work. Any absence must be properly excused by a healthcare provider for an illness or a University official for University business. If a class is missed due to technology problems, please contact the lab instructors via email as soon as possible to determine the best way to make up the lab session and group work.

Objectives

At the end of the course, students will be able to:

- a) Use a variety of computational software to correctly identify genes in phage genomes that produce functional biological macromolecules in bacteriophages.
- b) Describe basic bacteriophage genome properties and how genes of known function work in the phage life cycle.
- c) Appreciate the diversity of phage genomes and discuss how little is currently known about the functions of most phage genes.
- d) Read and assess primary literature and discuss what is currently known about phage biology and gene function.
- e) Submit finished gene calls in a timely and complete fashion.
- f) Clearly and concisely communicate scientific findings to others during group discussions, class presentations, and through a scientific laboratory report.
- g) Undergraduate students will present a research poster that summarizes our research findings and present this work to members of the university.

Grading

Laboratory point distribution (361 points):

Lab Notebook	60 pts (15 x 4)
Assignments and Quizzes	56 pts (12 x 5)
Genome Annotation	115 pts
Peer Review of Annotation	20 pts
Poster Project	60 pts
Journal Article Presentation	50 pts

Assignments and Quizzes – there will be assignments due throughout the term that will assess your overall understanding of the course objectives. Some may be given during class and some may be assigned as out-of-class work. Many of these are written into the course schedule, but additional assignments may arise and due dates may be adjusted throughout the semester. Unless otherwise noted in the course schedule, all assignments are due at the beginning of class. Any assignment handed in late will be docked 10% and will not be accepted after two days late without special permission from the instructor. Pre-lab assignments, such as quizzes and pre-lab notebook entries, are considered to be essential preparation for lab activities and will not be accepted late. Please note that arriving late to class or being absent for any reason does not alter the due date for any assignment.

Genome annotation – Students will work in teams to complete a thorough annotation of a bacteriophage genome. This group project will take several weeks to complete.

Lab Notebook – Students are required to use Google Docs or Google Sheets to maintain an electronic notebook that can be shared with your group and the instructors. Documenting your work in the lab is an essential part of developing your skills as scientists. Whenever possible you are expected to prepare your lab notebook with the title, objective, explanation, and protocol for the day's work. We will do the majority of data collection and analysis during the lab period. The notebooks are timestamped by the electronic notebook provider allowing the instructor to see when your work was completed. While we strongly encourage scientific discussions with your peers, your assignments and analysis of experiments in your notebook must be your own work.

Final Project and Poster – Students will be working in groups to collect data and analyze experiments. At the end of the semester, each group will assemble a scientific poster to be displayed in the Biological Sciences department and can be presented at a later time at the undergraduate research symposium.

Names/Nicknames and Pronouns

Course rosters are provided to instructors by the University with students' legal names as they were originally provided to the University, but we want to be sure that we are addressing you properly. We will gladly honor your request to be addressed by an alternate name or gender pronoun(s) that differ from your official University records. Please let us know of this early in the semester so that we can update our records.

Email Policy

University addresses will be used for all email correspondence. Please remember that emails are a professional correspondence and write them accordingly. Every attempt will be made to respond to emails within 24 hours of receiving them during the week. Email response during the weekend may take up to 48 hours for a response.

Students should also read e-mail sent to their University account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications.

Assignment Re-Grading Policy

You may request a re-grade of any portion of an assignment by submitting your request in writing and explaining why you think the grading was in error. You must include a detailed justification for the correctness of your answer, including references to the text used in the course (text, page, paragraph). This request must be submitted to the instructor within one week (5 business days) after the date the assignment is returned/grade is posted to Canvas. Unless the re-grade is due to an additional error, please be aware that your entire assignment may be reevaluated and any question that was graded incorrectly (in your favor) may also be re-graded resulting in points deducted from your total. Re-grading requests raised beyond a week after an assignment has been returned/grade is posted will not be addressed.

BISC 220L SEA-PHAGES Lab
General Biology Laboratory – SEA-PHAGES
Fall 2021 SYLLABUS - COURSE SCHEDULE

Bring a computer to every lab session, as you will work in a Google electronic lab notebook and with multiple software programs. Laboratory Notebook entries are to be completed independently of other students and will be presented and evaluated regularly in lab. Assignments in the course are also to be completed independently, except where specifically indicated. Refer to individual assignment instructions for guidance.

This schedule is tentative and subject to change based on the progress of experiments. Most recent update: 7/12/2021

Week	Dates	Lab Activities and Discussion	Assignment(s) to prepare for this week's lab
1	Aug. 26-27	<ol style="list-style-type: none"> 1. Introduction to course 2. Overview of lab and syllabus policies 3. Goals of the SEA-PHAGES program <ol style="list-style-type: none"> a. First semester review b. What does it mean to annotate a genome? c. Review of prokaryotic genetics d. Comparative genomics 	

2	Sep. 2-3	<p>1. Introduction to course software and websites</p> <ul style="list-style-type: none"> e. Google Doc f. DNA Master g. Phamerator h. PhagesDB.org <p>WEEK 2 QUIZ after class</p>	<p>READ: SEA-PHAGES Bioinformatics Guide- Introduction Section</p> <p>READ: SEA-PHAGES Phage Discovery Guice-Introduction to Bioinformatics</p> <p>ASSIGNMENT (due next week): make sure you have working DNA Master on your computer (via VM on Mac or PC), create account on phamerator.org</p> <p>ASSIGNMENT (due next week): read Bioinformatics guide and prepare for in-class discussion next week</p> <p>Pre-lab WEEK 3 QUIZ</p>
3	Sep. 9-10	<p>1. Preliminary review of genome and annotation guide</p> <p>2. Annotating the practice genome: <u>Is it a gene?</u></p> <ul style="list-style-type: none"> • GeneMark and Glimmer • GeneMark graphical output • Guiding principles of genome annotation <p>3. Annotating the practice genome: <u>Where does it start?</u></p> <ul style="list-style-type: none"> • BlastP (PhagesDB, DNA Master, NCBI) • Starterator • RBS Scores 	<p>READ: SEA-PHAGES Bioinformatics Guide-Bacteriophage Biology</p> <p>READ: SEA-PHAGES Bioinformatics Guide-Programs (review all)</p> <p>Pre-lab WEEK 4 QUIZ</p>

Week	Dates	Lab Activities and Discussion	Assignment(s) to prepare for lab
4	Sept. 16-17	<ol style="list-style-type: none"> 1. Review of blasted DNA Master genome <ol style="list-style-type: none"> a. Introduction to DNA Master 2. Annotating the practice genome: <u>What is the function?</u> <ol style="list-style-type: none"> a. BlastP b. Phamerator c. HHPred 	<p>READ: SEA-PHAGES Bioinformatics Guide-Bioinformatics Basics</p> <p>READ: SEA-PHAGES Bioinformatics Guide-DNA Master</p> <p>READ: SEA-PHAGES Bioinformatics Guide-Mechanics (DNA Master)</p> <p>Pre-lab WEEK 5 QUIZ</p>
5	Sept. 23-24	<ol style="list-style-type: none"> 1. Annotation decision tree process <ol style="list-style-type: none"> a. Is the gene call supported by strong evidence? b. Is the called start site the best possible choice? c. Do you have evidence to propose a function for this gene? Gathering evidence for functional assignments 2. Begin annotation assignments 	<p>READ: SEA-PHAGES Bioinformatics Guide-Phage Annotation, Genomics, and Data Interpretation</p> <p>READ: SEA-PHAGES Bioinformatics Guide-Documenting Your Annotation</p> <p>Pre-lab WEEK 6 QUIZ</p>

Week	Dates	Lab Activities and Discussion	Assignment(s) to prepare for lab
6	Sept. 30- Oct. 1	1. Annotation decision tree process <ol style="list-style-type: none"> Introduction to PECAAN Gathering evidence for functional assignments Evaluating gaps in the annotation Special circumstances: tRNAs and frameshifts 2. Work on annotations in work groups ASSIGNMENT: notebook check (15 pts; due at the end of lab)	READ: SEA-PHAGES Bioinformatics Guide-Programs (PECAAN) Pre-lab WEEK 7 QUIZ
7	Oct. 7-8	1. Work on annotations in work groups	TEAM ASSIGNMENT: work on annotations Pre-lab WEEK 9 QUIZ
8		NO LABS – Fall Recess	
9	Oct. 21-22	1. Annotation group work: resolving discrepancies <ol style="list-style-type: none"> Generating DNA Master notes files using PECAAN Checking gaps tRNAs and special cases ASSIGNMENT: notebook check (15 pts; due at the end of lab)	READ: SEA-PHAGES Bioinformatics Guide-Final .dnam5 File-Minimal Version READ: SEA-PHAGES Bioinformatics Guide-Final .dnam5 File - Complete Notes Version TEAM ASSIGNMENT: work on annotations

Week	Dates	Lab Activities and Discussion	Assignment(s) to prepare for lab
10	Oct. 28-29	<p>1. QC annotations</p> <p>TEAM ASSIGNMENT: group annotation finishing plan due at the end of class today</p>	<p>ASSIGNMENT: come prepared to present two gene calls, start and potential function (5 pts.)</p> <p>TEAM ASSIGNMENT: draft Introduction section for poster due at the beginning of Week 11 lab (10 pts.)</p> <p>TEAM ASSIGNMENT: final annotation file in PECAAN due Week 13 at the beginning of lab (page pages will be locked from further editing)</p>
11	Nov. 4-5	<p>1. Checking gaps</p> <p>ASSIGNMENT: notebook check (15 pts; due at the end of lab)</p>	<p>ASSIGNMENT: come prepared to present two gene calls, start and potential function (5 pts.)</p> <p>TEAM ASSIGNMENT: draft methods flow diagram for poster due at the beginning of week 12's lab (10 pts.)</p> <p>ASSIGNMENT: work on annotations</p>
12	Nov. 11-12	<p>1. Peer review of annotations assigned</p>	<p>ASSIGNMENT: come prepared to present two gene calls, start and potential function (5 pts.)</p> <p>TEAM ASSIGNMENT: draft Results section for poster due at the beginning of week 13's lab (10 pts.)</p>

Week	Dates	Lab Activities and Discussion	Assignment(s) to prepare for lab
13	Nov. 18-19	1. Journal Club student presentations (turn in peer review if not presenting, 3 pts.) ASSIGNMENT: Peer Review of annotations due (20 pts.) Final annotations due at end of class notebook check (15 pts; due at the end of lab)	TEAM ASSIGNMENT: work on posters
14	Nov. 25-26	No Labs – Thanksgiving Break	
15	Dec. 2-3	1. Journal Club student presentation (turn in peer review, if not presenting, 3 pts.) 2. Post-course survey	TEAM Final poster due in Box folder by the end of lab

Any changes to the syllabus will be announced in class and on Blackboard.

Lab Points Tracker

ASSESSMENTS:	DUE DATE	POSSIBLE POINTS	POINTS EARNED
Lab Notebook (16.2% of total lab grade) – 60 points	Notebooks are present every lab session		
Notebook check #1 (Week 6)	End of lab in Week 6 (09/30 – 10/01)	15	
Notebook check #2 (Week 9)	End of lab in Week 9 (10/21 – 10/22)	15	
Notebook check #3 (Week 11)	End of lab in Week 11 (11/4 – 11/5)	15	
Notebook check #4 (Week 13)	End of lab in Week 13 (11/18- 11/19)	15	
Assignments (16.2% of grade) – 56 points			
Week 2 Quiz	End of lab in Week 2 (09/02 – 09/03)	5	
Week 3 Quiz	Before lab in Week 3 (09/10 – 09/11)	5	
Week 4 Quiz	Before lab in Week 4 (09/16 – 09/17)	5	
Week 5 Quiz	Before lab in Week 5 (09/23 – 09/24)	5	
Week 6 Quiz	Before lab in Week 6 (09/30 – 10/01)	5	
Week 7 Quiz	Before lab in Week 7 (10/07 – 10/08)	5	
Week 9 Quiz	Before lab in Week 9 (10/21-10/22)	5	
Week 10 gene call presentation	Beginning of lab in Week 10 (10/28 – 10/29)	5	
Week 11 gene call presentation	Beginning of lab in Week 11 (11/04 – 11/05)	5	
Week 12 gene call presentation	Beginning of lab in Week 12 (11/11 - 11/12)	5	
Journal Club peer review (1) on first week not presenting	During lab in weeks 11/18 – 11/19	3	
Journal Club peer review (2) on second week not presenting	During lab in weeks 12/2 – 12/3	3	
Annotation (32.4% of grade) – 135 points			
TEAM Final submission	Beginning of lab in Week 13 (11/18-11/19)	85	
INDIVIDUAL annotation effort and quality score	Beginning of lab in Week 13 (11/18-11/19)	30	
INDIVIDUAL peer review of annotation		20	
Final Poster Project (16.2% of grade) – 60 points			
TEAM Introduction draft	Beginning of lab in Week 11 (11/4-11/5)	10	
TEAM Methods flow diagram draft	Beginning of lab in Week 12 (11/11-11/12)	10	
TEAM Results draft	Beginning of lab in Week 13 (11/18-11/19)	10	
TEAM Final written poster	End of lab in Week 13 (11/18-11/19)	30	
Journal Article Presentation (13.5% of grade) – 50 points			
Presentation of Journal article with partner (details on Bb)	Weeks 13 & 15, assigned by group	50	