

BISC 307 (General Physiology), Spring 2025 (Tentative, Subject to Revision)

| Date | Day | Topic | Silverthorn – 8 th Ed. | Quizzes* |
|--------|-----|--|-----------------------------------|----------|
| Jan 13 | M | 01 Introduction; Evolutionary Perspectives 1 | Ch 1, Ch 6 (181-190) | |
| Jan 15 | W | 02 Evolutionary Perspectives 2 | See Brightspace for resources | |
| Jan 17 | F | 03 Evolutionary Perspectives 3 | See Brightspace for resources | ---- |
| Jan 20 | M | <i>Holiday (MLK Day) – No Class</i> | ---- | |
| Jan 22 | W | 04 Regulation of Metabolic Fuel 1 | Ch 22 (692-719) | |
| Jan 24 | F | 05 Regulation of Metabolic Fuel 2 | Ch 22 (692-719) | Quiz 1 |
| Jan 27 | M | 06 Adrenal Glucocorticoids 1 | Ch 7, Ch 23 (728-734) | |
| Jan 29 | W | 07 Adrenal Glucocorticoids 2 | Ch 7, Ch 23 (728-734) | |
| Jan 31 | F | 08 Adrenal Glucocorticoids 3** | Ch 7, Ch 23 (728-734) | Quiz 2 |
| Feb 03 | M | 09 Thyroid, Growth Hormone | Ch 23 (734-741) | |
| Feb 05 | W | 10 Calcium Balance | Ch 23 (741-751) | |
| Feb 07 | F | 11 Reproduction 1 | Ch 26 (800-815) | Quiz 3 |
| Feb 10 | M | EXAM 1 | Jan 13 through Feb 5 (10 lects) | |
| Feb 12 | W | 12 Reproduction 2 | Ch 26 (815-836) | |
| Feb 14 | F | 13 Reproduction 3 | Ch 26 (815-836) | Quiz 4 |
| Feb 17 | M | <i>Holiday (Presidents Day) – No Class</i> | Ch 17 | |
| Feb 19 | W | 14 Respiratory System 1 | Ch 18 | |
| Feb 21 | F | 15 Respiratory System 2 | Ch 18 | Quiz 5 |
| Feb 24 | M | 16 Respiratory System 3 | ---- | |
| Feb 26 | W | 17 Cardiovascular System 1 | Ch 14 (432-452) | |
| Feb 28 | F | 18 Cardiovascular System 2*** | Ch 14 (432-452) | Quiz 6 |
| Mar 03 | M | 19 Heart as a Pump 1 | Ch 14 (452-474) | |
| Mar 05 | W | 20 Heart as a Pump 2 | Ch 14 (452-474) | |
| Mar 07 | F | 21 Heart as a Pump 3 | Ch 14 (452-474) | Quiz 7 |
| Mar 10 | M | EXAM 2 | Feb 7 through Mar 5 (10 lects) | |
| Mar 12 | W | 22 Blood Vessels & Pressure | Ch 15 (476-489) | |
| Mar 14 | F | 23 Distribution of Blood | Ch 15 (489-506) | Quiz 8 |
| Mar 17 | M | <i>Spring Break</i> | ---- | |
| Mar 19 | W | <i>Spring Break</i> | ---- | |
| Mar 21 | F | <i>Spring Break</i> | ---- | ---- |
| Mar 24 | M | 24 Membrane Dynamics | Ch 5 | |
| Mar 26 | W | 25 Electrical Signals 1 | Ch 8 (224-249) | |
| Mar 28 | F | 26 Electrical Signals 2 | Ch 8 (224-249) | Quiz 9 |
| Mar 31 | M | 27 Action Potentials 1 | Ch 8 (224-249) | |
| Apr 02 | W | 28 Action Potentials 2 | Ch 8 (224-249) | |
| Apr 04 | F | 29 Synaptic Transmission 1 | Ch 8 (249-265) | Quiz 10 |
| Apr 07 | M | 30 Synaptic Transmission 2 | Ch 8 (249-265), Ch 11 (355-368) | |
| Apr 09 | W | 31 Skeletal Muscle 1 | Ch 11 (368-372), Ch 12 (374-400) | |
| Apr 11 | F | EXAM 3**** | Mar 7 through Apr 7 (10 lects) | ---- |
| Apr 14 | M | 32 Skeletal Muscle 2 | Ch 12 (374-400) | |
| Apr 16 | W | 33 Skeletal Muscle 3 | Ch 12 (374-400) | |
| Apr 18 | F | 34 Smooth Muscle | Ch 12 (400-409) | Quiz 11 |
| Apr 21 | M | 35 Kidney Function & Filtration 1 | Ch 19 (587-600) | |
| Apr 23 | W | 36 Kidney Function & Filtration 2 | Ch 19 (587-600) | |
| Apr 25 | F | 37 Tubular Reabsorption & Secretion | Ch 19 (600-615) | Quiz 12 |
| Apr 28 | M | 38 Water & Salt Balance 1 | Ch 20 (618-636) | |
| Apr 30 | W | 39 Water & Salt Balance 2 | Ch 20 (618-636) | |
| May 02 | F | 40 Volume, Osmolarity, Acid-Base Balance | Ch 20 (636-652) | Quiz 13 |
| May 07 | W | EXAM 4, 2:00 – 4:00 pm | Apr 9 through Mar 2 (10 lects) | |

* Quizzes are available at 5 pm on indicated Fridays, and are due the following Tuesday by 10 am.

** **Friday, January 31** is the last day to drop without a mark of “W” and with tuition refund.

*** **Friday, February 28** is the last day to drop without a mark of “W” and without tuition refund.

**** **Friday, April 11** is the last day to drop with a mark of “W”.

A. General Course Description and Policies

Catalog Description

BISC 307L General Physiology (4 units, Spring semester only) Physiological functions of the circulatory, endocrine, integumentary, musculoskeletal, nervous, respiratory, and urogenital systems of animals. Lecture, 3 hours; laboratory, 3 hours. Prerequisite: BISC 220L or BISC 221L.

Overview

Physiology is unique among the biomedical sciences in its focus on the functions of intact, living organisms with all their complexity. It is especially concerned with homeostasis, which refers to regulation of conditions inside the body within the narrow limits that are compatible with life. This course will cover the physiology of human cells, tissues, organs, and organ systems, with emphasis on mechanisms by which homeostasis is maintained, and on the integration of each system with other systems. Evolution is emphasized as a unifying concept.

Instructor

Prof. Albert Herrera, HNB 116, aherrera@usc.edu

Laboratory Manager

Dr. Michael Moore, ZHS 371B, 213-740-6084, moore@usc.edu

Laboratory Instructors

TBN-1

TBN-2

Textbooks

- *Human Physiology: An Integrated Approach*, by Dee Unglaub Silverthorn, 8th edition.
Note: Reading assignments are given for the 8th edition, but that edition is not substantially different from the previous (7th) edition. Students interested in saving money may opt for the older version. Corresponding reading assignments for the 7th edition will be posted on Brightspace. Users of the 7th edition should consult the 8th edition to check for differences.

Website brightspace.usc.edu/

- We will post all course materials, information, recordings, announcements, and grades on Brightspace until the end of the semester. Brightspace is intended only for appropriate, course-related activities. Use for other purposes will result in disciplinary action.

Lectures

- Lectures will be given in-person, MWF 1:00-1:50 pm, in Social Sciences Building (SOS) B46.
- Lectures will be streamed live and recorded via Zoom. Links to Zoom meetings and recordings will be posted on Brightspace. The instructors are not responsible for technical problems that may result in loss of a lecture recording. Therefore, it is in the students' best interest to attend all lectures live in-person unless unable to do so due to illness or another documented reason (such as a family emergency or professional opportunity).
- Any recurring schedule conflicts with live lectures require a formal petition from the Registrar's Office and must be approved by the instructors involved. Please contact the course instructor and laboratory manager if you anticipate that you will have this kind of conflict with the lecture or laboratory portions of the course.

- For some topics, basic or introductory material will be presented via short, pre-recorded video lectures. When we meet in class, we can then use the lecture time to discuss more advanced aspects of the topic. So, it is important that you view and understand the pre-recorded lectures before coming to class. This approach will also free up lecture time for interactive problem-solving, discussion of applications, and analysis of recent research – activities that will help you prepare for the lecture exams. Not every topic will follow this approach. Some topics will be covered entirely by traditional lectures.
- Important Advice: ***Please do not use the lecture recordings as a substitute for regular attendance at lecture or as an excuse to procrastinate.*** In the past, students who earned the highest grades were those who attended nearly every lecture and took careful notes. Shortly after each lecture, use the recordings to fill gaps in your notes, focus on the more difficult material, and as a substitute for the occasional missed lecture. In this way, you will keep up with the lecture schedule and be able to use the time just before exams to practice applying your knowledge to solve novel problems. ***Given the breadth, depth, and integrative nature of the course material, you must not fall behind!***
- Be creative in your use of the lecture recordings. For example, keep track of the approximate elapsed time during the lecture, so you can note the timing of material you need to review. Try viewing the video recordings in small groups, so you can pause and discuss the material as you proceed. Take advantage of the portability of the audio recordings. Download them to your phone, computer, or other audio player and look for opportunities to listen when you are not otherwise occupied with mindful tasks. Speed up the playback or better yet, slow it down!

Laboratory

- See Part B below for the laboratory syllabus.

Lecture Exams

Lecture exams will be given in SOS B46 at the following times:

Exam 1: Monday, Feb 10, 1:00-1:50 pm

Exam 2: Monday, Mar 10, 1:00-1:50 pm

Exam 3: Friday, Apr 11, 1:00-1:50 pm

Exam 4: Wednesday, May 7, 2:00-4:00 pm

- Lecture exams will consist entirely of multiple choice and true/false questions. The exams are closed-book, i.e., you may not consult books, notes, internet sources, other references, or other persons during the exams.
- Lecture exams cover lecture subjects only; laboratory subjects will not be covered nor will textbook topics not covered in lecture. Lecture exams are not cumulative; each of the four exams will be worth the same number of points and will cover 10 lectures, as specified in the Lecture Schedule. There will not be a comprehensive final. Exam 4 will be given at the scheduled time of the final but will cover only the last 10 lectures of the course.
- Thoroughly memorizing and understanding the terms and concepts are essential. However, this level of learning will leave you only about half-prepared for the lecture exams. **On exams, you will be required to apply what you learned to solve novel problems, many of which will pertain to situations that we never specifically discussed.** Students find this approach very challenging but when they master it, as most of you will, the level of satisfaction is high. Even better, you will likely discover that you learned more than you thought you would. We will not ask more of you than you can handle, if you are willing to work hard. Please see the next section (Lecture Quizzes) for additional comments on exam questions.
- Re-grading: Answers to lecture exam questions will be posted on Brightspace shortly after each exam. If you feel an error was made in the grading of your exam, you should submit your well-justified case to Dr. Herrera via email. Specify which questions you think were incorrectly graded and why.

Lecture Quizzes

- Thirteen quizzes will be administered via Brightspace. The quizzes will be posted by 5 pm on Fridays and must be completed by 10:00 am on the following Tuesday. Most quizzes will cover the lecture material discussed on the previous Friday, Monday, and Wednesday but there are a few exceptions (see table below). Each quiz will consist of 4 questions, worth 0.5 points each. Question types will be multiple choice, true/false, or short answer. Only the highest 12 scores will be counted toward the final grade. Therefore, a maximum of 24 points can be earned from the quizzes, or 4 % of the total course grade. No accommodations will be made for students who take fewer than 12 quizzes. Quiz answers will be posted at the 10 am Tuesday deadline. You will likely find it helpful to discuss the quiz questions and answers at the Q&A sessions on Tuesdays and Fridays (see below).
- My intention is to make the quiz questions as challenging as those that will appear on the more point-heavy exams. To do well in this course, it will not be sufficient to merely look up or memorize answers. You must also be able to apply your knowledge to solve novel thought problems. The quizzes are designed to give you low-stakes practice at this and to gauge your level of preparation for exams. This 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, nor try to obtain answers from current or former students, for several reasons. First, you will not know until after the deadline whether your answer is correct. Second, you may deprive a fellow student of a learning opportunity. Third, you will diminish your own chances for a better grade by broadcasting your hard-won answers. Fourth, quiz questions are revised regularly, usually with the goal of making them more challenging. Each quiz is worth only 0.3% of the course grade, but its potential value as a learning tool is much greater. The quizzes will require a disproportionately large amount of effort – on my 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 the many years since we introduced the quizzes, students have come to see them 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.
- The following table gives important information about the quizzes.

| Quiz No. | Posted by 5 pm on Friday | Deadline 10 am on Tuesday | Lectures Covered |
|----------|-----------------------------|------------------------------|--------------------|
| 1 | Jan 24 | Jan 28 | 1, 2, 3, 4 |
| 2 | Jan 31 | Feb 4 | 5, 6, 7 |
| 3 | Feb 7 | Feb 11 | 8, 9, 10 |
| 4 | Feb 14 | Feb 18 | 11, 12 |
| 5 | Feb 21 | Feb 25 | 13, 14 |
| 6 | Feb 28 | Mar 4 | 15, 16, 17 |
| 7 | Mar 7 | Mar 11 | 18, 19, 20 |
| 8 | Mar 14 | Mar 25 | 21, 22 |
| 9 | Mar 28 | Apr 1 | 23, 24, 25 |
| 10 | Apr 4 | Apr 8 | 26, 27, 28 |
| 11 | Apr 18 | Apr 22 | 29, 30, 31, 32, 33 |
| 12 | Apr 25 | Apr 29 | 34, 35, 36 |
| 13 | May 2 | May 6 | 37, 38, 39, 40 |

Twice Weekly Question & Answer Sessions

- Dr. Herrera will hold live Q&A sessions via Zoom twice a week:
Tuesdays, 1:00-1:50 pm
Fridays, 2:30-3:30 pm (To help you prepare for Exam 3, the Q&A session for Apr 11 will be held one day earlier, on Thurs, Apr 10 at 2:30-3:30 pm)
- Q&A sessions will be recorded and archived via Zoom. Links to recordings will be available on Brightspace.

Instructor Office Hours

Please contact Dr. Herrera directly for individual 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.

Grading

- Grades will be based on the total number of points earned on exams, online quizzes and laboratory work, as shown in the table below. After each exam, a curve and table will be posted that shows the letter grades that correspond to current point totals.

| Portion | Item | Pts Each | Number | Total | Portion Totals |
|--|-----------------------|----------|--------|-------|------------------------|
| Lecture | Exams 1-4 | 100 | 4 | 400 | Lecture = 424 pts |
| | Online Quizzes | 2 | 13 | 24* | |
| Laboratory | Group Presentation | 35 | 1 | 35 | Lab = 176 pts |
| | Lab Quizzes | 5 | 8 | 40 | |
| | Lab Reports | 30 | 3 | 90 | |
| | General Participation | 11 | 1 | 11 | |
| *Only the highest 12 quiz scores will count. | | | | | Course total = 600 pts |

- Final letter grades will be determined by the following scheme. The mean point total of the top 10% of students will be determined. Students who earn a certain high percentage of that mean will earn an A or A-. Students whose totals fall below the A- level but above a certain lower percentage will earn a B+, B, or B-. Students below the B- level but above an even lower percentage will earn a C+, C, or C-, etc.
- ***An important consequence of this scheme is that, for the most part, grading is not competitive in this class. There are not fixed numbers of As and Bs to be assigned. The more the point totals are skewed (clustered) toward high values, the more As and Bs will be assigned.***
- ***One goal of this scheme is to facilitate cooperative learning and peer instruction. Higher-achieving students should help others; doing so will not jeopardize their higher grades. By teaching others, students will solidify their own understanding. Methods for accomplishing this will be discussed.***

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.

List of Support Services

- [Counseling and Mental Health](#) - (213) 740 - 9355 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.
- [988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273 - 8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.
- [Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740 - 9355 (WELL) – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).
- [Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740 - 5086
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.
- [Reporting Incidents of Bias or Harassment](#) - (213) 740 - 2500 or (800) 348 - 7454
One location for reporting all concerns about misconduct, including discrimination, harassment, retaliation, hate crimes, hazing, unprofessional faculty/staff behavior, violence, threats, inappropriate patient care, and other misconduct.
- [The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740 - 0776
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.
- [USC Campus Support and Intervention](#) - (213) 740 - 0411
Assists students and families in resolving complex personal, health-related, financial, and academic issues adversely affecting student success.
- [Diversity, Equity and Inclusion](#) - (213) 740 - 2101
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 – 24/7 on call
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 - 1200 – 24/7 on call
For non-emergency assistance or information.
- [Office of the Ombuds](#) - UPC: (213) 821 - 9556, HSC: (323) 442 - 0382

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

- [Occupational Therapy Faculty Practice](#) - (323) 442 - 2850 or email otfp@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

Absences, Extensions and Make-ups

Please read this section carefully, and if you have any questions about these policies, do not hesitate to reach out to the instructors or the laboratory manager.

- There are no assignment extensions, make-up exams/quizzes, or make-up lab assignments, except in the case of exceptional extenuating (and well-documented) circumstances.
- If you miss one of the four lecture exams for a valid (documented) reason, your exam grade will be set as the average of your other three exam scores. Without valid documentation, you will receive a “0” for the missed exam.
- If you miss the final exam in the course, you will receive a mark of Incomplete (IN) for the course.
- If you miss two or more exams for valid (documented) reasons, you will receive a mark of Incomplete (IN) for the course.
- Incomplete grades (IN) must be resolved within one calendar year of when you originally enrolled in the course. You do not need re-enroll in the course in order to make up the missed work. Students are expected to coordinate with their original instructor to determine what must be done to remove the IN and when/how this should be done. Such students should also ask the instructor for access to the course Brightspace site during the make-up semester. It is strongly recommended that students do not postpone making up missed work and that they seek guidance from their academic advisor during this process.

Health and Well-Being

The course is conducted in-person. It is important that you follow the guidelines below as they relate to your physical health and well-being. Especially in the first half of the Spring semester, COVID-19, influenza, respiratory syncytial virus, colds, gastroenteritis, and other infectious diseases will be prevalent in the community. To protect yourself and others, please do the following:

- If you feel sick, notify the lab manager and your teaching assistant via email immediately. Do not attend the lecture or laboratory sections in-person.
- Explain your valid reason for being absent (physical/mental health-related or family emergency) and include relevant documentation to verify your illness or injury. ***Please note that the Student Health Center does not provide doctor’s notes for illness. See the policy [HERE](#). However, you can fill out the Self-Verification Form available on their website and in-person to attest to your illness.***
- Provide information about how you will keep up with information presented in the section(s) you missed, e.g., reviewing recordings, scheduling office hours with your instructor(s).

Academic Integrity

- Our university depends on honesty, integrity, and ethical behavior among its members. For 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. There are well-defined standards for the ethical behavior of instructors as well.
- We have reliable, time-tested methods for detecting cheating, plagiarism, and other violations of academic integrity. Please note that to protect the integrity of grades and the academic process, sanctions for violations are severe. The minimum sanction is usually an F for the course. Suspension or expulsion from the university is also possible.

- To learn more about integrity and accountability in academics and student life see [The USC Student Handbook](#). Information about integrity in research can be found [HERE](#).

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with the Office of Student Accessibility Services (OSAS) each semester. A letter of verification for approved accommodations can be obtained from OSAS and should be delivered to Prof. Herrera and Dr. Moore early in the semester, *at least two weeks before Exam 1*. For more information, please call the OSAS office at 213-740-0776 or go to their website: osas.usc.edu.

Policies Concerning Student-Athletes

Although the schedule of athletic competitions is somewhat uncertain due to COVID-related restrictions, USC's policy is that 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, the student-athlete should inform the instructor in advance. The student must provide the instructor with an Excused Absence Letter from Student-Athlete Academic Services (SAAS). Information about such letters can be found on the SAAS website (<https://saas.usc.edu/>). The letter must certify that the student-athlete is participating in a University-sponsored event that deserves accommodation. Accommodations will not be made for other types of conflicting events. More information on the University's policy on student-athletes can be found at faculty.usc.edu/leadership/service/ocaaa/. 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. Please check your USC email regularly.

Emergency Preparedness / Course Continuity / COVID-19 Health and Safety Protocols

If an officially declared emergency makes travel to campus infeasible, [USC Emergency Information](#) (213-740-9233) will provide information related to safety and course continuity. We expect that instruction will be continued by means of Brightspace, teleconferencing, video/audio recording, and other technologies. Alternative assignments may be given if classes are canceled for prolonged periods. Be sure you are registered with [TrojansAlert](#) to facilitate communication during emergencies.

B. Laboratory

| Wk | Dates | Day | Exercises | Comments |
|----|-----------------------|---------------|--|--|
| 1 | Jan 14 ↓ Jan 16 | Tu ↓ Th | No lab meeting this week | |
| 2 | Jan 21 ↓ Jan 23 | Tu ↓ Th | Introduction to Lab | Safety issues; introduce group presentations of classic papers; introduce lab reports, discussions of papers, quizzes, lab reports |
| 3 | Jan 28 ↓ Jan 30 | Tu ↓ Th | Group Presentations | Powerpoint (or similar) group presentations discussing classic papers & modern followups |
| 4 | Feb 04 ↓ Feb 06 | Tu ↓ Th | Discussion of two evolution papers | Be prepared to ask and answer questions. Quizzes 1&2 (10 Q) due 48 hours after end of lab period |
| 5 | Feb 11 ↓ Feb 13 | Tu ↓ Th | Discussion of two endocrinology papers | Be prepared to ask and answer questions. Quizzes 3&4 (10 Q) due 48 hours after end of lab period |
| 6 | Feb 18 ↓ Feb 20 | Tu ↓ Th | Cardiology Lab Simulation; Introduction to SimHeart & SimVessel | Quiz 5 (5 Q) due 48 hours after end of lab period |
| 7 | Feb 25 ↓ Feb 27 | Tu ↓ Th | Introduction to LabScribe cardio-vascular system | Draft of cardiovascular proposal due 48 hours after end of lab period |
| 8 | Mar 04 ↓ Mar 06 | Tu ↓ Th | Conduct cardiovascular experiments | Lab Report 1 due at start of lab week of Mar 24 |
| 9 | Mar 11 ↓ Mar 13 | Tu ↓ Th | Simulation: Electrical activity in <i>Aplysia</i> & leech | Quiz 6 (5 Q) due 48 hours after end of lab period |
| 10 | Mar 18-20 | --- | <i>Spring Break</i> | ----- |
| 11 | Mar 25 ↓ Mar 27 | Tu ↓ Th | Discussion of Cl ⁻ current paper; Introduction to SimNeuron & SimNerve | Quiz 7 (5 Q) due 48 hours after end of lab period Draft of SimNeuron or SimNerve proposal due 48 hours after end of lab period |
| 12 | Apr 01 ↓ Apr 03 | Tu ↓ Th | Conduct nerve experiments | Lab Report 2 due at the start of lab, week of Apr 14 |
| 13 | Apr 08 ↓ Apr 10 | Tu ↓ Th | Skeletal Muscle Simulation Introduction to SimMuscle | Quiz 8 (5 Q) due 48 hours after end of lab period |
| 14 | Apr 15 ↓ Apr 17 | Tu ↓ Th | Introduction to LabScribe EMG system | Draft of SimMuscle proposal due 48 hours after end of lab period |
| 15 | Apr 22 ↓ Apr 24 | Tu ↓ Th | Conduct muscle experiments | Lab Report 3 due Monday, May 5 at noon |
| 16 | Apr 29 ↓ May 01 | Tu ↓ Th | Kidney Function - Urinalysis | |

Goals of the Laboratory

The laboratory is an integral and essential component of the course, with 3 main goals:

1. Give you experience with the processes, tissues, and concepts discussed in the lecture part of the class.
2. Encourage the development of scientific literacy, i.e., the ability to find, read, comprehend, and discuss original research articles from the physiology literature.
3. Deepen your appreciation of the scientific method by requiring you to design, execute, and analyze your own experiments.
4. Develop writing skills in the format of scientific research papers and a lab manual exercise.

Laboratory Sections

| | | | | | |
|--------|-------------|--------|--------|------------|--------|
| Tue am | 11:00-1:50 | 13284R | Wed pm | 2:00-4:50 | 13286R |
| Wed am | 10:00-12:50 | 13281R | Thu am | 11:00-1:50 | 13285R |

Lab Manual

- A laboratory manual will not be required for this class. Handouts describing the lab exercises will be distributed as PDF files via Brightspace.

Lab Grading (*Details of grading for the lab portion of the class will be announced.*)

- Performance in the lab will account for about 30% of each student's grade. The assignment of lab points is shown on page 5.
- Lab reports will be graded strictly, according to a published rubric which was adapted by Dr. Herrera for this course. The rubric will be published on Brightspace. The grading rubric is strict, perhaps stricter than you have encountered in other courses with laboratory components. We use these strict standards, which approach a professional level, to encourage you to improve your writing,

Final Thoughts

- Please forgive the length of this syllabus. We feel it is important for everyone to know exactly what to expect. We hope you will enjoy our mutual exploration of physiology. The mechanisms we will study are fundamentally important in all animals, and highly relevant to the understanding of human health. We promise to apply all of our experience in teaching and research to present an interesting and informative course and to assign grades fairly. Good luck!