

MCB 32L: Introduction to Human Physiology Laboratory  
Fall 2017

**Class times**

|                     |                              |                |
|---------------------|------------------------------|----------------|
| Lecture             | Mon 1-2pm                    | 105 North Gate |
| Laboratory Sections | Wed, Fri 9am-12pm            | 4056 VLSB      |
|                     | Tues, Wed, Thurs, Fri 2-5 pm | 4056 VLSB      |

**Instructor**

Robin Ball, [rball@berkeley.edu](mailto:rball@berkeley.edu)

Office hours: W 10:30-11:30am and Th 4-5pm in 134 LSA

**Graduate Student Instructors**

| <u>Section</u> | <u>GSI</u>           | <u>Email</u>   |
|----------------|----------------------|--|
| 101: Tu 2-5    | Stephanie Tran       | <a href="mailto:stephanie_tran02@berkeley.edu">stephanie_tran02@berkeley.edu</a>       |
| 102: W 9-12    | Daniela Flores       | <a href="mailto:daniela_flores@berkeley.edu">daniela_flores@berkeley.edu</a>           |
| 103: W 2-5     | Stephanie Tran       | <a href="mailto:stephanie_tran02@berkeley.edu">stephanie_tran02@berkeley.edu</a>       |
| 104: Th 2-5    | Patrick Martin-Tuite | <a href="mailto:patrick_martintuite@berkeley.edu">patrick_martintuite@berkeley.edu</a> |
| 105: F 9-12    | Daniela Flores       | <a href="mailto:daniela_flores@berkeley.edu">daniela_flores@berkeley.edu</a>           |
| 106: F 2-5     | Patrick Martin-Tuite | <a href="mailto:patrick_martintuite@berkeley.edu">patrick_martintuite@berkeley.edu</a> |

**Grading**

The final grade will be based on:

|                                    |                  | <u>Pts</u> |
|------------------------------------|------------------|------------|
| 1. Pre-Lab Questions               | 8 @ 10 pts each  | 80         |
| 2. Lab Reports                     | 4 @ 100 pts each | 400        |
| 3. Worksheets                      | 4 @ 40 pts       | 160        |
| 4. Independent Investigation *     | 1 @ 150 pts      | 150        |
| 5. Exam                            |                  | 80         |
| 6. Lab Participation               |                  | 90         |
| 7. Lecture Participation (Clicker) |                  | 10         |
| <b>Total Points</b>                |                  | <b>970</b> |

\* The independent investigation (Lab 9) will consist of 3 parts:

- Proposal 10 pts
- Laboratory report 100 pts
- Presentation 40 pts

**Pre-Lab Questions**

Pre-lab questions for Labs 1-8 will be posted on bCourses in the Assignments section and are due at the beginning of your lab section. They consist of some study questions from the previous lab, as well as questions related to that day's lab. The answers can be found in the lab manual and from the lab lectures (web searches won't always give you the right answer!). The

point of these questions is to make sure you read the laboratory manual before coming to class so you are totally prepared for the lab exercises. Lab will go a lot more smoothly if everyone reads the lab manual before class. You will get no credit for late pre-labs (even if it is 10 minutes late).

### **Lab Reports and Worksheets**

For each lab, you will either write a lab report or complete a worksheet. Lab reports are a formal write-up of the experiments you did, results you found, and the conclusions you can draw from these results. Although you perform the labs in a group, lab reports need to be written individually, using your own words. Your GSI will discuss the requirements in more detail with you. Guidelines for what to include in your lab report are found at the end of these labs.

Lab reports are submitted on bCourses and checked for copying using Turnitin. Write your own lab reports using your own words. Do not copy from others or from the internet/lab manual. If we discover that you have copied the work of another, you will receive 0 points on that assignment.

Labs 2, 4, 7 and 8 have worksheets instead of lab reports, which can be found at the end of these labs in the lab manual (neatly rip them out of your notebook and put your name on them).

### **Exam**

There will be one multiple choice exam in lecture November 13. You will get 50 minutes to take the 40 question exam. In order to prepare for the exam, attend lecture, do the pre-labs, study questions and generally pay attention during the lab.

### **Lab Participation**

These points will be awarded at the discretion of your graduate student instructor. It will be based on an evaluation of your participation during lab time, attendance, readiness for lab and the work you put into answering the study questions and thought questions for each lab.

### **Lecture Participation**

We will use iClickers in the lecture and you will receive 2 points for each lecture you use your Clicker for a maximum of 10 points total (so you need to attend at least 5 lectures). Beyond the points, it is really beneficial to pay attention to lecture. Answers to pre-lab and study questions are given in the lecture, as well as all the background information you need to do well in the lab. **Make sure you register your iClicker on our bCourses page!** Instructions are located on bCourses.

### **Independent Investigation**

During the last three labs of the semester, you will be working in groups to conduct and analyze your own experiments, which will follow up on concepts from earlier labs (see Lab 9 in manual). You will need to write a proposal for what you will test, how you will test it and how you will analyze the data. You will turn in one proposal per group and you will all receive the same grade. Your GSI will provide feedback to your group, so you can make changes to your plan before you start the experiments. You will have two lab sections to complete your lab and prepare your presentation. During the last lab section, you will each individually submit their own lab report. In the last lab section, your group will present your experiments to the rest of your lab.

### Late lab report and worksheet policy

10 points will be deducted for a laboratory report that is turned in late. For every additional class period, an additional 15 points will be deducted from the lab report. This policy is to be fair to all students across sections and to be fair to those students who turn their lab reports in on time. Late worksheets will lose 10 points for each class period that they are late. Late pre-labs will not be accepted and will receive 0 points.

### Missed lab policy

Unfortunately, due to the preparation involved in laboratory setup, it is usually not possible to make up any laboratories. **If you know ahead of time you will miss a laboratory or if you are sick and cannot attend you must contact your GSI.** A missed laboratory session without a valid reason will result in a deduction of 50 points from your final grade. Due to the enrollment size, **you cannot just attend another laboratory section.** If the absence is excused, you can still do the lab report or a make-up assignment for a worksheet. Please tell your GSI if you will be late to lab or if you need to leave early, but do not make a habit of it.

### Schedule

**There is lab during the first full week of the semester (starting Aug 29).**

You must attend lab during the first week to keep your place in the class.

| Week  | Monday lecture                      | Lab  | Assignments due                                     |
|-------|-------------------------------------|--|---|
| 8/28  | 1. Diffusion                        | Introductions, lab reports, journal article activity |   |
| 9/4   | <i>No lecture (Labor Day)</i>       | Lab 1 – Diffusion                                    | Pre-lab 1   |
| 9/11  | 2. Sensory systems                  | Lab 2 – Sensory systems                              | Pre-lab 2<br><b>Lab 1 report</b>                    |
| 9/18  | 3. Action potentials and reflexes   | Lab 3 – Nerve conduction                             | Pre-lab 3<br>Lab 2 worksheet                        |
| 9/25  | 4. Muscle contraction and summation | Lab 4 – Muscle excitability                          | Pre-lab 4<br><b>Lab 3 report</b>                    |
| 10/2  | 5. EMGs and muscle movement         | Lab 5 – EMG<br>Sign-up for Lab 9 topic               | Pre-lab 5<br>Lab 4 worksheet                        |
| 10/9  | 6. Heart, cardiac muscle            | Lab 6 – Frog heart                                   | Pre-lab 6<br><b>Lab 5 report</b>                    |
| 10/16 | 7. ECG, blood pressure, ventilation | Lab 7 – Physiological measurements                   | Pre-lab 7<br>Lab 9 proposal                         |
| 10/23 | 8. Exercise physiology              | Lab 8 – Exercise physiology                          | Pre-lab 8<br><b>Lab 6 report</b><br>Lab 7 worksheet |
| 10/30 | 9. Example presentation             | Lab 9 – Independent Investigation                    | Lab 8 worksheet                                     |
| 11/6  | Review for exam                     | <i>No lab all week (Veteran's Day)</i>               |   |
| 11/13 | <b>Exam (in lecture)</b>            | Lab 9 – Independent Investigation                    |   |
| 11/20 | <i>No lecture</i>                   | <i>No lab all week (Thanksgiving)</i>                |   |
| 11/27 | <i>No lecture</i>                   | Lab 9 presentations                                  | <b>Lab 9 report</b>                                 |

## **Honor code**

**The student community at UC Berkeley has adopted the following Honor Code:** “As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others.” The hope and expectation is that you will adhere to this code.

**Cheating:** A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating on a quiz or exam in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during the quizzes and exams.

**Plagiarism:** To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. We will check your papers for plagiarism, so please be careful about this. For additional information on plagiarism and how to avoid it, see, for example:

<http://www.lib.berkeley.edu/instruct/guides/citations.html#Plagiarism>

<http://gsi.berkeley.edu/teachingguide/misconduct/prevent-plag.html>

**Academic Integrity and Ethics:** Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing – furthering knowledge for the benefit of humanity.

Your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. And we also appreciate that being a student may be stressful. There may be times when there is temptation to engage in some kind of cheating in order to improve a grade or otherwise advance your career. This could be as blatant as having someone else sit for you in an exam, or submitting a written assignment that has been copied from another source. And it could be as subtle as glancing at a fellow student’s exam when you are unsure of an answer to a question and are looking for some confirmation. One might do any of these things and potentially not get caught. However, if you cheat, no matter how much you may have learned in this class, you have failed to learn perhaps the most important lesson of all.

## **Safe, Supportive, and Inclusive Environment**

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process. Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling (510) 642-1988.

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call (510) 643-7985, email [ask\\_ophd@berkeley.edu](mailto:ask_ophd@berkeley.edu), or go to <http://survivorsupport.berkeley.edu/>.