MCB 32: Introduction to Human Physiology, Fall 2015
Lectures: T/Th 9:30-11am, 2050 VLSB

Instructors
Robin Ball, rwball@berkeley.edu
Office hours: M 3-4pm in 134 LSA

Terry Machen, tmachen@berkeley.edu
Office hours: M 2-3pm in 231 LSA

Voluntary discussion section with faculty: T 4-5pm, 179 Dwinelle

Graduate Student Instructors
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Course description
This course is intended as an introduction to human physiology for non-MCB majors. We will start off the course reviewing basic cell biology, which will be necessary for understanding how the human body works. We will then cover all the major organ systems of the human body, including endocrinology, reproductive system, nervous system, muscles, cardiovascular physiology, respiratory physiology, renal physiology and the gastrointestinal system. By the end of the semester, you will have an understanding of how your organs function and how your body regulates the different organ systems to help maintain homeostasis and keep you alive.

Discussion sections
There are discussion sections once a week. Please attend the section you are enrolled in.

Discussion sections will give you more opportunities to work through the material, form study groups and ask questions. Weekly quizzes will be administered in discussion sections.

Required material
Textbook: Cindy L. Stanfield, *Principles of Human Physiology*, Pearson, 5th edition

A new version of this textbook is available at the UC Berkeley bookstore and packaged with a free physiology coloring book (useful for studying, but not required). You may also buy used copies elsewhere. You may use the 4th edition, but our notes will refer to specific figures or pages from the 5th edition. The 4th edition is on reserve at Moffitt Library (not the Biosciences Library).

You do not need to purchase Mastering A& P, the online tool that comes with the textbook, though you might find that helpful.

The schedule tells you which chapters of the book to review for each lecture, but you do not need to know extra material in the textbook that was not discussed in lecture. Use the textbook to clear up confusing points from lecture and to review the figures.

iClickers: You will need an iClicker remote, which can be purchased at the bookstore. You should bring these with you to every lecture. There is more information about the Clickers on page 3 of the syllabus.

Course website

https://bcourses.berkeley.edu/ or find it via CalCentral.

Lecture notes and slides will be posted in the "Files" section before class. Weekly homework can be found in the Assignments section. You should check the course web site for announcements or have them automatically emailed to you. It is up to you to check the course website regularly.

Grades

Grades: >90% = A, 80% = B, 70% = C, 60% = D

Quizzes (best 5 out of 9)	50 pts
Midterm 1	100 pts
Midterm 2	100 pts
Midterm 3 and final	170 pts
Homework	14 pts
Clickers	16 pts
Total	**450 pts**

Quizzes: Quizzes will be administered in discussion sections by the GSIs. There will be 9 brief quizzes, given in discussion beginning Sept 8 and ending Nov 20 (we will announce make-up quizzes for holidays). Each quiz counts 10 points and only the top 5 scores will be counted. There are no make-up quizzes.

Exams: Three midterms cover material immediately preceding these sections of the course. These exams are taken in class, 80 minutes duration. Midterm 3 will take place along with the final exam. The final exam covers material from the entire course.

The format will be primarily multiple choice, true/false, matching, labeling and similar questions. There will also be a few short answer questions. Some of these questions will be similar to practice problems in the lecture slides and in the textbook.

You will be expected to sign an honor code statement on the front of every exam, stating that you have not cheated on the exam. We take cheating very seriously and if you are caught cheating, we will give you a zero on that exam or quiz.

Homework: The homework assignments will be posted on bCourses in the Assignments section. There will be a homework assignment each week of the semester **due on Tuesdays at 9:30am**. These will often involve watching an online video or animation and answering questions about them on bCourses. You will get two chances to get the correct answers and your highest score will be recorded

in bCourses. You will not receive credit for late homework. The homework assignments are a good chance to practice and prepare for quizzes and exams.

Clickers: You will earn 1 point for each class you participate in the Clicker questions. Participation entails answering more than 50% of the Clicker questions in the lecture (regardless of the answer). The most points you can earn are 16 points, but there will be at least 23 lectures that use the iClickers, so you can miss a few days of class or forget your iClicker a few times without consequence.

Using the iClickers in class has been proven to keep students engaged in lectures. They also help the instructors understand what you know and what needs to be covered again, while giving everyone a chance to participate in class. The following section explains how to register your remotes.

iClicker remotes

You will need to purchase an iClicker remote from the bookstore. If you already have an iClicker from another class, this will work fine. Any version should work just fine as long as you register it properly.

Unfortunately we cannot use the iClicker app this term, so you will need to use a remote.

Registering iClickers

In order for us to know you used your iClicker, you will need to register the remote in bCourses. Look for the iClicker menu on the left in our course site. Follow the directions for registering your remote. Do not register your remote on iclicker.com, because we will not be able to match your responses with your name, so you will not receive credit.

Clickers in class

Bring your iClickers to class on Sept 1 and Sept 3 to check that they are functioning properly, and starting Sept 8 we will start keeping track of responses for credit. Each week the Clicker scores will be uploaded to bCourses, so pay attention to those scores to make sure your Clicker is registered correctly.

We consider bringing a fellow student's iClicker to class to be cheating and a violation of the University Honor Code. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all Clicker points and may face additional disciplinary action.

Accommodations

If you need disability-related accommodations in this class, if you have emergency medical information you wish to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class or email me.

Students who need academic accommodations (for example, a notetaker), should request them from the Disabled Students' Program, 260 César Chávez Center, 642-0518 (voice or TTY). DSP is the campus office responsible for verifying disability-related need for academic accommodations, assessing that need, and for planning accommodations in cooperation with students and instructors as needed and consistent with course requirements.

LECTURE SCHEDULE (subject to change)

RB = class taught by Robin Ball, TM = class taught by Terry Machen

Date	Lec		Subject	Quiz	Chs
Week 0					
Th 8/27	1	RB	Introduction and homeostasis		1
Week 1			Homework 1 due 9/1	No quiz	
Tu 9/1	2	RB	Chemistry review, biomolecules, energy, enzymes		2, 3
Th 9/3	3	RB	Cells, organelles and tissues		1-3
Week 2			Homework 2 due 9/8	Quiz 1	
Tu 9/8	4	RB	Membrane transport		4
Th 9/10	5	RB	Intercellular signaling		5
Week 3			Homework 3 due 9/15	Quiz 2	
Tu 9/15	6	RB	Endocrine regulation: pituitary and pancreas		6, 21
Th 9/17	7	RB	Reproductive system: hormonal regulation		22
Week 4			Homework 4 due 9/22	Quiz 3	
Tu 9/22	8	RB	Nervous system: membrane and action potentials		7
Th 9/24	9	RB	Nervous system: AP conduction, synaptic transmission		7, 8
Week 5			Homework 5 due 9/29	Quiz 4	
Tu 9/29	10	RB	Central nervous system: anatomy and sensory intro		9, 10
Th 10/1	11	RB	Sensory physiology: touch and vision		10
Week 6			Homework 6 due 10/6	No quiz	
Tu 10/6	12	RB	REVIEW 1		
Th 10/8			MIDTERM 1, LECS 1-11 (100 pts)		
Week 7			No homework	No quiz	
Tu 10/13	13	RB	Autonomic nervous system and somatic motor system		11
Th 10/15	14	RB	Skeletal muscle: contraction and force generation		12
Week 8			Homework 7 due 10/20	Quiz 5	
Tu 10/20	15	RB	Skeletal muscle: spinal reflexes and voluntary control		12
Th 10/22	16	TM	CV: Cardiac muscle and heart		13
Week 9			Homework 8 due 10/27	Quiz 6	
Tu 10/27	17	TM	CV: Smooth muscle and blood vessels		14
Th 10/29	18	TM	CV: Regulation of blood flow and pressures		14
Week 10			Homework 9 due 11/3	Quiz 7	
Tu 11/3	19	TM	Respiration: anatomy, mechanics and pressures		16
Th 11/5	20	TM	Respiration: O_2+CO_2 transport		17
Week 11			Homework 10 due 11/10	Quiz 8	
Tu 11/10	21	TM	Respiration: regulation		17
Th 11/12	22	TM	Renal: anatomy and kidney tubule specializations		18
Week 12			Homework 11 due 11/17	Quiz 9	
Tu 11/17	23	TM	Renal: fluid and electrolyte balance		19
Th 11/19	24	TM	REVIEW 2		
Week 13			Homework 12 due 11/24	No quiz	
Tu 11/24			MIDTERM 2, LECS 13-23 (100 pts)		
Th 11/26			THANKSGIVING HOLIDAY		

Week 14			No homework	No quiz	
Tu 12/1	25	TM	GI: anatomy, digestion, secretion and absorption		20
Th 12/3	26	TM	GI: integration during a meal		20
Week 15			Homework 13 due 12/8 (2 pts)	No quiz	
Tu 12/8	27	RB	FINAL REVIEW (RRR WEEK)		
Th 12/10	28	TM	FINAL REVIEW (RRR WEEK)		
Final					
Tu 12/15 3-6 PM			MIDTERM 3 (20 pts) + FINAL EXAM (150 pts) Final covers material from entire course (cumulative)		

How to succeed in MCB 32

1. Attend lecture and discussion section regularly.
2. Review lecture notes and slides within a day of class. Rewrite notes to make them clearer. Use the textbook to clear up confusing points.
3. Stay up with the material by doing the homework (try answering the questions without using your notes the first time).
4. Form study groups with friends or other students in your discussion section. Use the BuddyUp app to help find study groups (see the section below).
5. Meet regularly with your study group to discuss the concepts from class. Quiz each other and teach each other. The best way to learn new material is to teach it to someone else.
6. When you are going about your day, think about what is happening in your body. If you are walking, think about what is happening in your motor neurons and skeletal muscles each time you contract your leg muscles. Talk yourself through the process to review the material.
7. Attend the faculty discussion section and office hours whenever you have questions.
8. Before the exams, study the lecture notes and slides again. Redraw diagrams. Do the practice problems from the slides, Clicker questions, and questions in the textbook (though not all of these are relevant). It is much better to review notes and slides than to reread the textbook.

BuddyUp app

To help you form study groups, our class will be using a platform called BuddyUp. This app, which was created by students, makes it easy to chat with your classmates, coordinate study groups and find study partners. To download the app, visit www.buddyup.org and create a new profile.

To encourage you to use this service, we will give one point of extra credit to any student who has signed up by Thursday September 10. We encourage you to start studying together and meet other students in the class as early as possible in the semester.

Still have questions?

Check the Frequently Asked Questions section on bCourses. You can get to the FAQs from the link on the homepage.