C126: PERCEPTION
SYLLABUS

Professor:
TBD

Graduate Student Instructors:
TBD

LECT	DATE	LECTURE TITLE	DUE?	WOLFE 3RD ED	ESSENTIAL PAGES
1	TBD	INTRODUCTION; LIGHT, OPTICS, AND EYES		CHAPTER 1-2	
2	TBD	EXPLORING OUR BRAINS, RECEPTIVE FIELDS		CHAPTER 2	21-25, 44-49, 70-75
3	TBD	MODULES AND MAPS, CENTRAL VISUAL PROCESSING; PATTERN AND SHAPE PERCEPTION		CHAPTER 3	371,263
	TBD	NO CLASS (PRESIDENTS' DAY)			
4	TBD	PATTERN AND SHAPE PERCEPTION; SURFACES AND OBJECTS	PRESUB. ENQ. #1	CHAPTER 4,	15-17, 75-83, 86-106
5	TBD	SURFACES AND OBJECTS; LIGHT AND SHADOWS			152-162
6	TBD	OBJECT RECOGNITION; DEPTH, SCENE DEPTH, SIZE		CHAPTERS 4 & 6	106-113, 152-162
	TBD	*MIDTERM EXAM 1 (LECTURES 1-5)*			
	TBD	NO CLASS (SPRING BREAK)			
7	TBD	DEPTH CONTINUED; BINOCULAR DEPTH		CHAPTER 6	163-185
8	TBD	MOTION OF OBJECTS AND SCENES; MOTION MECHANISMS		CHAPTER 8	
9	TBD	COLOR 1; COLOR 2	PRESUB. ENQ. #2	CHAPTER 5	
10	TBD	COMMON ANALYSES: TOUCH, VISION, HEARING, SMELL, AND TASTE		BSPACE RESOURCES	BSPACE RESOURCES
11	TBD	ATTENTION, CONSCIOUSNESS, DEVELOPMENT	OBS PAPER	CHAPTER 7	
	TBD	*FINAL EXAM (ALL LECTURES): DOUBLE CHECK TIME AND LOCATION, PLEASE!*			

Disclaimer: The readings are reasonable approximations for the core material presented in lectures. They are not (I repeat: not) a substitute for going to class.
**note: Please check for updates of the syllabus, readings, and dates on bSpace, bspace.berkeley.edu.*

C126: PERCEPTION
NAVIGATING THE COURSE

CONTACT INFORMATION & OFFICE HOURS
TBD
email: TBA
office: TBA
office hours: TBD and by appt.

GSI TBA
office: TBA
office hours: TBA

COURSE DETAILS:
C126 is a 3-unit course. There is one lecture per week. There will be 1 midterm exam and a cumulative final exam, as well as a couple of written reports. The lecture outline, attached here, shows topics and readings (*Sensation & Perception*, by Wolfe et al). The text is in the bookstore (used copies should be available). Amazon, Google shopping, etc are other good and cheap sources for used versions. You can rent a copy online for about $20-$50.

Course website: <bspace.berkeley.edu> Check this website *frequently* for announcements, updates, extra readings, and general information about the course.

REQUIRED TEXT:
Wolfe (2008). Sensation and Perception. 3rd Ed. Sinauer Associates.

READINGS:
The lecture does not strictly follow the book, but the book does provide the big picture and can help fill in the gaps if there's anything you miss or don't understand. It is recommended that you read the whole chapter before each lecture. The "essential pages" on the syllabus provide some the selections that are most relevant and useful; make sure to at least read these. Please check the course website at bspace.berkeley.edu for frequent updates of these readings.

GRADING:
Grades will be based on 1 midterm exam and 1 final exam, along with a set of written papers, and discussion section activity. The exams are required, and the final exam is cumulative. Please note that NO makeup midterm or final exams will be granted, except in cases of extreme and serious illness that is well documented by a doctor. Plan your travel accordingly. Here is the grade breakdown:

The midterm exam = 25% of your grade
+ Discussion section grade = 15% (14% discussion section + 1% RPP credit—see bspace)
+ Observation paper (written report) = 25% (5% for each of 2 pre-submission enquiries, 15% for final submission)
+ The final exam = 35% of your grade
= Total grade = 100 %

Exam format: all multiple choice for all exams. Exam questions will be drawn from both the book and the lecture. Many questions draw from material covered in lecture that is *not* covered in the book; reading the book is not a substitute for attending lecture. Some material covered in discussions may be fair game for exams as well.

Your grade on each exam is a number (not a letter grade), and the final grade is calculated from the average of these exam grades (according to the formula above). If we provide a rough estimate of letter grades for the midterm exam, please keep in mind that these letter grades are not very meaningful (e.g.,

you cannot average two letter grades A and B+ together and automatically assume that the average is an A-; if you had a high scoring A and a relatively high B+ you could still receive an A overall). Take midterm letter grades lightly; take the numbers seriously. There may be a curve in the grade distribution, but only in an upward direction, and depending on the distribution. If everyone does a superb job, I am happy to give everyone an A.

If you require special accommodations of any sort, please contact the GSIs or instructor by email. The DSP website contains a useful FAQ and the official accommodation policy: http://dsp.berkeley.edu/

RPP credit: In order to learn how to create an RPP account and start participating in experiments, please go to the following link: http://psychology.berkeley.edu/undergraduate-program/research-participation-program and click on "Important Information for Students." If you have any questions, you can contact RPP at rpp@berkeley.edu.

Observation papers (written reports): separate instructions will be distributed to guide you through the observation paper process (see the bspace “resources” folder for “observation paper pointers” and examples). Each observation paper is a written report, but before writing your observation paper, you should submit two “presubmission enquiries” (two separate inquiries on two **separate** topics) to make sure you are on the right track. Check bspace for the observation paper pointers and presubmission enquiry documents. Ask your GSI if you have questions or concerns.

LEGALESE:
See several UCB sources online about academic misconduct, plagiarism, etc (many more are available, ask if you’d like to see more): [http://sa.berkeley.edu/code-of-conduct] and [http://catalog.berkeley.edu/policies/conduct.html] and [http://teaching.berkeley.edu/academic-integrity-under-construction]. These and others provide detailed information about UCB policies. UCB takes cheating and plagiarism *very* seriously. To summarize these webpages: it’s not worth it.

GENERAL ADVICE:

1. Go to class. If you don’t go to class, you will regret it. I promise. The podcast is not a substitute for class; use the podcasts after going to class to review material. If you listen to the podcast instead of going to class, you will regret it during the exams.

2. Take notes in class. The lecture slides may seem clear during class, but will look like a foreign language the night before the exam. The pdf slides are just an outline. The substance of what you need to know is said in lecture but often not listed on the outline. All it takes is a few quick notes in the margins of each slide on the pdf, and you’ll remember what was in lecture. *Take notes in class.*

3. Use the book to supplement the lectures. The exams will draw mainly on the information from lectures. While the material in the textbook is often not specifically emphasized, the readings can be very useful to reinforce and clarify lecture material and provide "the big picture." Most important is to read about the things that are discussed in lecture, especially the parts of the lecture that seemed confusing to you.

4. Use the one-minute quizzes. One-minute quizzes are your chance to let me know what was and was not clear in lecture. Although this is a relatively large lecture course (nearly 300 students), I will do my best to cover all of your questions and concerns raised in the one-minute quizzes.

C126: PERCEPTION
COURSE DETAILS

COURSE DESCRIPTION:
This course is an introduction to sensation and perception. The brain processes huge amounts of data--more than any camera or machine can handle--and yet we seem to perceive the world effortlessly. How does the brain handle all this information? With an emphasis on visual perception, this course will answer such questions and many others: How well does my cat see? Why do flies and bees have eyes different from ours? What if we had eyes like a fly? Why does the moon look so big when it's near the horizon? Why can't I see when I walk into a movie theater from a bright sunny day? What does a 4-month-old baby see? How does a batter hit a baseball traveling over 100 mph? What do the brains of blind people process? Everything we do depends on our perception of the world, and this course will provide an introduction to the world of perception.

WHAT IS IN THIS COURSE? WHY MIGHT YOU WANT TO TAKE IT?
-- Find out what scientists know about "how we see" and how this might reveal how the brain works more generally.

-- Perception has a very long tradition, rooted in physics, physiology, medicine, psychology and art. At present the scientific study of perception remains interdisciplinary, bounding the fields of philosophy, biology, mathematics, physics, psychology and computer science.

-- Perception permits a blend of science and personal everyday experience. It is one way to get an appreciation of rigorous scientific thinking in a way that relates closely with the immediate aspects of one's personal experience. This means that occasionally some chance daily occurrence has the possibility of illuminating our deepest understanding of perception and brain function. As such the field is full of interesting surprises.

-- Practically speaking, if we are ever to build artificial visual system which has more than trivial capacities, we will probably need to develop some greater understanding of our own.

SOME QUESTIONS (LARGE AND SMALL) THAT MIGHT BE BETTER UNDERSTOOD AS A RESULT OF THIS COURSE:
--How is the visual part of the brain organized? Is it true that there seem to be separate areas for color and motion? How did our visual system come to be wired up as it is?
--What are visual illusions and why do we have them? Are they important?
--How come we see things "out there" when my eye is being stimulated?
--How well does my cat see? How well does a hawk see? What does a 4 month old baby see? How do we know this?
--How come my vision is rather clear for moving objects but it's very blurred if I took a snapshot with a camera? Isn't my eye like a camera?
--Why can't I see when I walk into a movie theater from a bright sunny day?
--Why haven't robots learned to see as we do?
--Is it true that over half of the monkey's brain is devoted to vision?
--Why do red flowers look so dark at dusk?
--What is the best way to camouflage oneself, why should we remain stationary if at all possible?
--Can I remember every little detail in a visual scene which is briefly presented.
--What kind of visual deficits can happen after a stroke? What does this tell us about how visual information is represented in the brain?
--What happens at the ophthalmologist's office?
--Why can I often see depth better with two eyes than with just one?