

PSY 312 Sensation & Perception

SABANCI Uni. – Course Info & Syllabus

Instructor: Nihan Alp, Ph.D.

Office Hours: TBA

Fall 2020-2021

Wednesday 2:40-3:30 pm

Online class location: <https://sabanciuniv.zoom.us/j/92918475686> (Meeting ID: 929 1847 5686 Passcode: VisNeuro

Office Hours: Wednesday 3:40 pm

Location: <https://sabanciuniv.zoom.us/j/93873641000> (Meeting ID: 938 7364 1000 Passcode: OFFHour)

I will be available online during the office hours. Since the whole semester will be online this year, there might be increased demands in participating office hours. In order to use limited time in maximum efficiency: please book a time slot and send your questions to TA a day prior to the office hour.

Course Objectives

The objective of this course is to help you master the fundamental facts and concepts of perceptual psychology and master the processes that bridge perception (of external stimuli with) and cognition for the human mind. As an intro/intermediate level class taught by many psychology departments, this course introduces various neuroscientific and biological concepts that cut across the fields of psychology, biology, and engineering.

My research is on visual perception, perceptual organization, cognitive neuroscience (human) and neuroimaging. I work with typical human populations in a research setting mostly using EEG in which I study different aspects of perceptual organization (e.g., symmetry) as well as biological motion and face perception. Therefore, I often work with interdisciplinary teams (neuroscientists, psychologists, electrical engineers, computer scientists).

I tried to create a class that:

- a) Is structured and organized. Therefore, I will heavily rely on the textbook for the organization of the material. The class is also organized around the five senses, even though we will spend most of our time on visual and auditory processing, as there is much more research in those fields
- b) Relies on scientifically supported testing and learning methods for student assessment
- c) Provides both a solid introduction to concepts and also an understanding of why these concepts matter
- d) Inspires you to think about these fundamental concepts outside the classroom. Therefore, we will have group projects that we will start working on from Day 1!

The only prerequisite for this class is willingness to learn. As long as you can show that to me, we will make a great team!

Grading

Final letter grades will be determined by a curve that mimics the distribution of grades at other classes at this level at Sabanci University.

Grades will be determined by your performance on the following five components:

- 1) 2 Midterm – 50% (Midterm 1: week 1 to 6; Midterm 2: from week 8 to 13)
- 2) Group project – 20% (15% paper %5 presentation)
- 3) Final exam – 30% (Everything is included)
- 4) Bonus: Research point (5 RP is equal to 2 actual point which will be added to your final exam grade)

For those of you who like knowing what they are getting into, here's what each one means:

- **2 Midterms – 50%.** We will have 2 midterms. These midterms will cover material from the past few lectures and chapters.
- **Group project – 20%.** We will have each one of you work with your classmates towards a group project that will be completed by Week 10 and presented by the last week of classes. I expect you to submit your group project report **by week 10 (2-4 page long short report - %15)**. If you miss the deadline (e.g. deadline: 00.00 but you submit your work at 00.01) your grade will be decreased by **half on the first day, then every day you of late submission you will lose 1 point (Be careful, I always give grades based on %)**. You will get 8-12 min slot to present (%5) your work during the final week, and your final grade will depend on the quality of your short report and the quality of your presentation.
- **Final exam – 30%.** This will cover material from the entire course. Details to follow.
- **Online discussion sessions:** I will hold an hour online discussion session during our scheduled course time every Wednesday between 2:40-3:30. You are expected to watch uploaded online course videos beforehand and bring your questions to our online discussion sessions. Our first online discussion session will be in the second week (14th of October 2020). Please send your questions to the TA a day prior to the online discussion sessions.

The exams will cover material from the lectures that are not necessarily in the book, as well as material from the book that is not covered in the lectures.

Group project requirement

This course includes a group project requirement. You will be assigned to a group by the instructor and will be able to choose one of the following thematic areas for your project:

- **Arts/Music/Media:** Your group will create a BRAND NEW visual or auditory illusion or a multi-media artwork that builds on one of the concepts we learned in class. You will not be allowed to spend an exorbitant amount of money on materials, and I encourage you to keep the costs at a minimum. The goal is to get very creative with cheap materials and have fun executing your well-thought-out, well-planned creative project together. You will present the story of your artwork, the ideas behind it, the approach, the methods, etc. in class.

- **Enactment/learning by movement:** Your group will come up with a dance or a sequence of movements that explain, demonstrate and clarify a concept we covered in class. If you can come up with something that can be scaled up (i.e., get your classmates involved), even better! Your performance will be preceded by a discussion of why you picked your approach, what is the goal/instructional value (or the 2-3 things we need to learn from this activity) followed by a presentation of your activity. We will then discuss what we learned and comment on what we observed and how it clarified things (and even suggest a few edits).
- Watch following video:
<https://www.youtube.com/watch?v=nUQvJOSCoI4>
- **Spend an hour “observing” without using your ears --** rely on sight, smell, touch (if appropriate). This can be accomplished by purchasing some earplugs (look for the highest dB reduction you can find) During the hour, try to do several different things (watching tv, eating, having a conversation, shopping, etc.). Have someone video type your activities. After the observation time has elapsed, write down what you were able to notice and prepare a presentation. Don’t forget to talk about each of the other senses you were using. Here are some questions to get you started: Were there any surprises? How was it trying to figure out what was going on with minimal hearing? What information did you pick up on that you may have ignored if you were using your ears? Have your views about deafness changed now that you have r gone for one hour with minimal sound? How much do you rely on hearing?
Watch following videos:
<https://www.youtube.com/watch?v=wr7rHD7pOsA>
<https://www.youtube.com/watch?v=sKIX1Ru4KQ8>
<https://www.youtube.com/watch?v=e34gyLUElBA>
- **Dining-in-the-dark** This activity helps you think about how your senses contribute to eating – an everyday activity. You should accomplish this by having blindfolds then ask someone to guide you to a seat. You remain blindfolded throughout the meal (from soup or salad through dessert). Answer the following questions in your essay and fill in Dining in the Dark Questionnaire (I will provide this).
 - Rank the senses: audition, taste, smell, touch, proprioception/kinesthesia
 - What, if anything, did you do differently?
 - What sensory aspects did you like most? Least?
 - What did you learn?
 - Was it enjoyable? Where in the semester should this occur?
 Finally, you should present your experience in the class.

Watch the following videos:

<http://listverse.com/2014/06/12/10-incredible-stories-about-blind-people/>
https://www.youtube.com/watch?v=H4bz4LbDc8A&feature=em-subscriptions_digest and other Tommy Edison YouTube videos (Google Tommy Edison and select several)
<https://www.youtube.com/watch?v=qLziFMF4DHA> (series of 5 videos about Ben Underwood) *watch at least one.

Caution: The last two projects require you to spend a minimum of one hour observing the world while one of your primary senses is greatly restricted or missing. Please be very careful when doing these projects. I strongly advise you to have a companion accompany you to help keep you from possible harm.

Report: 2-4 pages long. Your responses are to be typed, double-spaced, with Times New Roman 12

Teaching Assistants

Duygu Yücel is TA of this course. She will be helping with certain administrative aspects of the course. Reach out her (duyguyucel@sabanciuniv.edu) in case you have questions about administrative aspects of the course.

Readings

Text Book:

Name: Sensation and Perception, 9th Edition

Author: Dr. E. Bruce Goldstein **Publisher:** Cengage Learning

Year of publication: 8th edition

The book comes with a CD that has a number of nice demonstrations, but the CD is not required for the course. So, it is fine if you want to purchase a used book without the CD.

Lecture Notes: Lecture notes and chapters will be available on-line.

If you have any other special interest, come see me (virtually ☺) during office hours.

Rules of Engagement (how do make the class work)

Exams:

- **There will be only one make-up exam which will be given after the final exam.**
- If you think your exam has been graded incorrectly, **submit a written explanation** at the following class. I will double check the grading and get back to you.

Office Hours:

- You can come to my virtual office on my office hours, in addition, I will be available by appointment for possible hours. Either send me an email, listing several possible days/times, to set up an appointment, or talk to me after class. I check my email regularly.

Class and Classwork:

- **Please read the book, watch the videos and come to the online discussion class!** It is a very good textbook. You are responsible for material covered in the lectures even if it is not in the textbook, and you are responsible for the material in the textbook even if it has not been covered in the lectures. The on-line lecture notes are the best place to start when studying for the exams.
- **Come to class on time, and don't leave before it's over.** If you have another class that begins before this one is over, that means that you have to choose between one or the other. Besides being rude, it's disruptive and distracting to have people coming and going.
- **PLEASE ask questions during discussion hours. I advise you to email your questions to TA a day before discussion course so that we can use limited time efficiently.**

Announcements:

- Check the course web pages for regularly for announcements, information about exams and review sessions, grades, and changes to the schedule. You are responsible for finding out about this information.

Course Schedule

The readings listed in the schedule below refer to the book chapters that are most relevant to the material that will be covered in the corresponding lectures. The exams will also cover additional material from the lectures that is not in the book, as well as material from the book that is not covered in the lectures.

Week	Topic	Reading (Goldstein)
Week 1	Introduction to course and syllabus; Group Assignments; Intro to perception	Chapter 1
Week 2	Intro to visual perception: the eyes, rods and cones & receptive fields and action potentials	Chapter 2
Week 3	Beyond basic visual processing -feature detection & lateral inhibition	Chapter 3
Week 4	LGN and V1 – cortical organization	Chapter 4
Week 5	Neuroanatomy of the human brain & Psychophysics	Chapter 4
Week 6	Perception of objects and complex scenes, face perception	Chapter 5
Week 7	1st Midterm / Visual attention, neglect and blind sight	Chapter 6
Week 8	Perception of an action – action-based account of visual perception, mirror neurons, navigation	Chapter 7
Week 9	Motion perception, special effects, apparent motion intro to color perception	Chapter 8
Week 10	Color perception and constancy in perception/(Group paper submission deadline)	Chapter 9
Week 11	Depth and object size & visual illusions + Chemical senses (smell and taste)	Chapter 10
Week 12	Intro to hearing and sound perception	Chapter 11
Week 13	2nd Midterm / Auditory localization and organization + speech perception	Chapter 10
Week 14	Group presentations	Chapter 14