Psychology 2050, *Perception*  
Professor James Cutting Fall, 2018

**Uris Auditorium (G01)**  
TR, 1:25-2:40

**SYLLABUS**

**Text:** E. B. Goldstein & J. R. Brockmole, *Sensation and Perception* (10th ed.)  
Belmont, CA: Wadsworth Cengage

**Course Website:** through Blackboard

**Office Hours:** (all in Uris Hall)  
J. Cutting, 274, M 9:45-11:15, or appt jec7  
Caitlyn Finton, 231, W 11:00-1:00 cjf225

**Extra credit:** [https://cornellpsych.sona-systems.com/](https://cornellpsych.sona-systems.com/)

**Goals:** To understand how our sensory systems sculpt our experience of the world around us.  
To understand how our senses differ and how they are similar.  
To understand methodologies and statistical techniques used to assure us of how our senses work.  
To place the workings of the human body and its senses within an evolutionary context, and to understand how these develop both across species and within our own life spans.  
To begin to come to grips with the duality of having both minds and brains.

<table>
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<tr>
<th>Week</th>
<th>Day</th>
<th>Lecture number and topic</th>
<th>Reading assignment</th>
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| 0 R  | 23 Aug | 1. Doctrine of the specific qualities of nerves.  
Mueller & Oppenheimer paper, on the course Blackboard site. | |
| 1 T  | 28 Aug | 2. Two metaphors for cognitive neuroscience.  
Chapter 1: 3-19. Introduction to perception.  
R 30 Aug | 3. Two psychophysical phenomena.  
Chapter 2: 21-47. The beginnings of the perceptual process. |
| 2 T  | 4 Sep | 4. Signal detection.  
R 6 Sep | 5. Olfaction  
Chapter 15: 361-383. The chemical senses. |
| 3 T  | 11 Sep | 6. Taste and the vomeronasal organ  
no reading assignment.  
R 13 Sep | 7. Three kinds of adaptation.  
no reading assignment |
| 4 T  | 18 Sep | 8. Skin, pain, and phantom limbs.  
Chapter 14: 337-359. The cutaneous senses.  
R 20 Sep | 9. Haptics, posture, and movements  
| 5 T  | 25 Sep | 10. Sounds, the ear, and deafness.  

6 T 2 Oct: 12. FIRST PRELIMINARY EXAMINATION, during class time.
Question answering session to be arranged for 28 Sep. No make ups.
R 4 Oct: 13. Parapsychology
no reading assignment.

7 T 9 Oct: Fall Break
review Chapter 2: 21-47. The beginnings of perception.

Chapter 3: 49-70. Neural processing [1st prelims handed back]
Chapter 4: 73-91. Cortical organization.

no reading assignment
Chapter 5: 93-122. Perceiving objects and scenes.

10 T 30 Oct: 19. M.C. Escher and the perception of form
no reading assignment
R 1 Nov: 20. Color, history, and physiology

Chapter 7: 149-169. Taking action.
R 8 Nov: 22. Depth and layout
Chapter 10: 227-257. Perceiving depth and size.

12 T 13 Nov: 23. Motion and movies.
Chapter 8: 171-193. Perceiving motion
R 15 Nov: 24. SECOND PRELIMINARY EXAMINATION. material since 1st prelim.
Question answering session to be arranged for 16 Nov. No make ups.

no reading assignment
R 22 Nov: Thanksgiving

R 29 Nov: 27. Illusions.
no reading assignment.

15 T 4 Dec: 28. The common sensibles and sensory substitution.
no reading assignment

W 12 Dec: FINAL EXAM. Comprehensive. Location to be arranged.
9AM Question answering session to be arranged. No early exams.
OTHER IMPORTANT MATTERS

It is expected that all students will follow the Cornell Code of Academic Integrity: http://cuinfo.cornell.edu/aic.cfm

Grading and a Contract: Most of your grade will be determined by the mean of your two highest grades. Thus, if you are happy with your two prelim grades, you need not take the final. But, there are no makeups for the prelims or for the final. Your prelims and/or final exam grade will count 90% of your course grade. Members of athletic teams and others away on Cornell University business during the prelims may take the exam while they are away under the supervision of a trainer, coach, or faculty sponsor. Please notify me well in advance so that arrangements can be made.

In addition to the prelims and final, there will be six “pop short essays.” That is, at the end of certain lectures you will be asked to write (longhand) for five minutes a short paragraph on a topic from the course, based mostly on the previous lecture. Your lowest score of these six of these will also be dropped. Each of the essays counts 2% toward your final grade.

Students with Disabilities: Please give me your Student Disability Services (SDS) accommodation letter early in the semester so that I have adequate time to arrange your approved academic modifications. Meeting with me in my office hours will help ensure confidentiality. If you need an immediate accommodation for equal access, please speak with me after class or send an email message to me and/or SDS at sds_cu@cornell.edu. If the need arises for additional accommodations during the semester, please contact SDS.

Extra credit: Given that the bulk of the presentation of material in this course is experimental, I have found it useful for students to participate in experiments (but not questionnaire studies). To this end, you may earn up to three points of extra credit towards your grade should you choose to participate in sponsored experiments through the website SONA. These points would be added to your second lowest grade, after the lowest has been dropped. Again the URL is: https://cornellpsych.sona-systems.com/. Questions can be directed to: sona-admin@cornell.edu.

Secondary Posting of Course Material. There are a number of commercial sites, the most prominent of which is Course Hero, that encourage students to post materials from their classes. While students are only supposed to post material that they have created or for which they have permission to post, in many cases faculty-authored material is posted without permission. Let me be clear: you do NOT have permission to re-post material from the Blackboard course site or to sell that material, either on your own or to a commercial vendor.

TakeNote sometimes chooses this course to notate, and then sell their notes to students. They have thus “authored” that material. I do not endorse the use of their notes (I have found that they are sometimes inaccurate), but I see no reason to restrict your use of their notes.
SONA is a website that allows you to sign up to participate in research studies for credit in your psychology or human development class. Not all Psych and HD classes participate, so be sure to check your syllabus or with your TA/Instructor about whether SONA credits are being offered in your course.

The website can be reached at: https://cornellpsych.sona-systems.com/  Note: Some of your courses in other departments might have their own SONA websites. This is the link for research credit in Psychology and Human Development courses only.

Setting up an account on SONA
Go to the website and click “Request Account.” Your “User ID” must be your NetID.

Select the classes in which you are enrolled from the course list. If you would also like the option of signing up for experiments for pay, you may also choose “Paid Participant” as one of your classes. You may add new courses to your account at any time on the “My Profile” page.

The system will assign you a unique SONA identification number. You must bring this number to all of your study appointments, because it is the only information researchers will know about you. You can view your SONA identification number on the “My Profile” page, under “Identification Code.”

You may be given the option to complete a “Prescreen” (if it is active this semester). This is an optional survey that may qualify you to participate in additional studies that are seeking particular types of participants (for example: women only, freshmen or sophomores only, etc.). If a prescreen survey is available, it is completely up to you whether to complete it. It may make more studies available to you.

Signing up for studies
From your account, you may view the list of currently active studies that give credits in at least one of the courses in which you are enrolled. You may also view descriptions of the studies and sign up by selecting from the available appointment timeslots. Be mindful of the signup and cancellation deadlines, study duration and location, and other information in the study description.

Note that many studies require that you be at least 18 years of age. Be sure to check the study description for possible age requirements before signing up for an appointment.

When you sign up for a study, you will be asked to select the class to which you would like to assign the credit. You cannot choose both credit and pay for the same study, or use the same study for credit in multiple classes.

Each half hour of study time corresponds to 1 credit on SONA. It is up to your professor how these credits will be integrated into your grade for the class.

Important note about multiple classes: If you have added more than one class to your SONA account for research credit, you will see available studies that offer credits in at least one of your classes. A study might not qualify for credit in all of your classes. So, be sure to check the study description to see a list of classes for which that study is offering credit. If you assign a credit to a class that does not allow credits from that study to be counted, the credit will automatically be reassigned to one of your approved classes.

Please make sure to arrive at your study appointments on time. Cancel early or email the researchers as soon as possible if you will be unable to make your appointment. Repeatedly missing appointments without excuse will result in you being blocked from further research participation on SONA. You must then speak with your professor about options for non-research extra credit.

For questions about the use of the site, please email: sona-admin@cornell.edu
The Doctrine of the Specific Energies of Nerves
(Doctrine of Sensory Qualities)

Johannes Müller (1838) *Handbuch der Physiologie des Menschen*,
Vol. V, (English translation by William Baly, 1842). Core ideas in *italics*

I. *External agencies can give rise to no kind of sensation which cannot also be produced by internal causes, exciting changes in the condition of our nerves.*

II. *The same internal cause excites in the different senses different sensations, in each sense the sensations peculiar to it.*

III. *The same external cause also gives rise to different sensations in each sense, according to the special endowments of its nerve.*

IV. The peculiar sensations of each nerve of sense can be excited by several distinct causes internal and external. [summary of I-III]

V. Sensation consists in the sensorium’s receiving through the medium of the nerves, and as the result of the actions of an external cause, a knowledge of certain qualities or conditions, not of external bodies of the nerves of sense themselves; and these qualities of the nerves of sense are in all different, the nerve of each sense having its own peculiar quality or energy. [a consequence of I-III]

VI. *The nerve of each sense seems to be capable of one determinant kind of sensation only, and not of those proper to the other organs of sense; hence one nerve sense cannot take the place and perform the function of another sense.*

VII. *The central portions of the nerves included in the encephalon are susceptible of [the] peculiar sensations [of the nerves], independently of the more peripheral portion of the nervous cords which form the means of communication with the external organs of sense.*

VIII. The immediate objects of the perception of our senses are merely particular states induced in the nerves, and felt as sensations either by the nerves themselves or by the sensorium; [restatement of VI]

but inasmuch as the nerves of the senses are material bodies, and therefore participate in the properties of matter [generally occupying space, being susceptible of vibratory motion, and capable of being changed chemically as well as by the action of heat and electricity], they make known to the sensorium, by virtue of the changes thus produced in them by external causes, not merely their own condition, but also properties and changes of condition of external bodies. [restatement of the first part of VIII]

The information thus obtained by the senses concerning external nature, varies in each sense, having a relation to the qualities or energies of the nerve.