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Office Hours Online in Zoom (optional)
S&P (Sec 03): Wed, 5-6 pm, *open OH's*
S&P (Sec 01): Wed, 6-7 pm, *open OH's*
Other times by appointment only

Asynchronous Remote ("AR") Online Learning in Canvas

All instruction and activities will be conducted asynchronously. There are no required meeting times, but courses are structured with weekly assignments that students are expected to complete by assigned dates throughout the semester. If you are international, I recommend having a VPN software that allows you to access web content and videos on the internet in the US. Set your VPN location to NY/NJ. For technical help with Canvas, please visit <https://it.rutgers.edu/help-support>.

Optional Office Hours via Zoom

The virtual zoom office hours are optional, if someone needs to ask a question or wants to have social contact with the professor or other students in the class. You will have everything you need posted on Canvas, including printable slides, homework files, readings, and video segments, so you can work on your own timeline. You can find the Zoom link in the main menu on our Canvas page.

Course Description

This course emphasizes classic concepts, theories, and research regarding the psychophysical, neural and mental processes involved in sensation and perception. There will be a review of each of the five major senses, with an emphasis on vision and hearing. The course will provide a survey of perceptual processes, an appraisal of current theories. The fundamental phenomena and mechanisms of the visual, auditory, gustatory, olfactory and cutaneous systems will be described and related to underlying physiological processes as well as their developmental trajectories and subsequent sensorimotor functions.

Prerequisite: a passing grade in an entry-level course, such as Introductory Psychology.

Course Goals

- In this class you will learn about the foundations of perception, with an emphasis on sight and hearing, and more broadly how we are able to make sense of the world around us based on the input from our five senses. Several important discoveries have been made through the study of perception, including some of the deepest insights about how the nervous system develops and functions. This class will highlight the ways in which this information was discovered and what we can conclude from these facts. This course also places an emphasis on scientific reasoning about how we come to know the few things that we really know about sensory and perceptual processing mechanisms in humans and other animals.
- You will learn about research that is conducted to study sensory processes, namely how we are able to perceive, interpret, attend to, and remember information about sounds, colors, shapes, and 3D objects, as well as dynamic actions and events in the world around us.
- This course will provide you with a scientific basis for understanding sensory abilities and perceptual processes in humans, non-human primates and other animal species.

Student Learning Objectives

By the end of this course, students will be able to:

- Differentiate between the various behavioral research methods and neuroscience techniques devised for evaluating and comparing perceptual abilities in humans and non-human animals.
- Identify the neural substrates of perception across all five sensory modalities, and describe the pathways from receptors to cortical receiving areas for each of the five senses.
- Describe theoretical models of visual perception, object recognition, mechanisms of attention, hearing, and speech and language perception.
- Develop analytical thinking skills and gain experience with reading and evaluating scientific research.

Textbook

Goldstein, E. B. (2010). *Sensation & Perception*, 8th ed. Cengage Learning.
(ISBN-10: 0495601497 & ISBN-13: 9780495601494).

Note: A copy of the book is posted as a PDF on our Canvas course page.

Textbook Companion Website (open access -- no code required)

The publisher offers a freely available companion web site with quizzes and other study aids:

http://www.cengage.com/cgi-wadsworth/course_products_wp.pl?fid=M20b&product_isbn_issn=9780495601494&discipline_number=24

Weekly reading assignments may include a textbook chapter and/or a journal article. Lecture slides, homework readings, homework assignments, links to articles and quizzes, etc., will all be available for you to download from our Canvas course page.

Grading

60% Exams (3 Non-cumulative Midterms worth 20% each, online in Canvas)

40% Written Work (Discussion Board Questions, Homework – all submitted online in Canvas)

Requirements and Expectations

To do well in this course, you will need to engage in approximately 4 to 6 hours of time outside of class each week for reading and/or writing. For optimal performance, it is highly recommended that students attend class on a regular basis, complete all written homework assignments and exams as scheduled, and keep up with weekly readings. All students should complete the online course evaluations for their classes before the end of the semester.

Discussion Board Questions & Homework Readings with Question Sets

The required reading and writing assignments will typically involve reading a textbook chapter and a primary research article from a scientific journal. There will be a question set for each of the readings. Some assignments will be entered online in the Discussion Board and some will be typed into Word documents and uploaded in Canvas. The journal articles and homework files will be available for you to view and download on Canvas. You fill in your answers and upload the completed and correct file into the submission link on Canvas. You must complete the assignments in a timely manner on or before the closing date to earn credit. No extensions permitted.

The HW and DBQ assignments will help you learn at a deeper level about particular topics in psychology. Homework will include your responses to a set of guiding questions in a short answer format and each written assignment will be approximately 2 pages in total length. All written work should be submitted on or before the due date via online upload directly in Canvas.

Late work will not be accepted. Extensions will not be permitted.

Exams

There are **three** exams. These exams are non-cumulative midterms (**20% each**). All exams will be comprised primarily of multiple choice, fill-in responses, matching, or short essay questions. Materials covered both in lecture, textbook chapters, and homework will be included in all exams. Please note that you are responsible for all assigned reading materials, whether or not they are discussed at length in class. Students should take advantage of the study guides and practice tests using the textbook's freely accessible companion web site for the 8th edition of the textbook (use the clickable link here and it is also located above:

http://www.cengage.com/cgi-wadsworth/course_products_wp.pl?fid=M20b&product_isbn_issn=9780495601494&discipline_number=24).

Optional Extra Credit

Opportunities for optional extra credit may be offered to students who wish to participate. Stay tuned for announcements and instructions if and when it is available. Late work will not be accepted. Extensions will not be permitted.

Policy on Written Work and Assignments

- All of your written work must be done by you and written in your own words using your own thoughts and ideas. Please remember to cite your sources of information in the references.
- Students should aim to complete their written work by the due date. The assignment file can be uploaded directly into Canvas as per the instructions.
- E-mailed assignments will **NOT** be accepted. Do not email your work to the Professor or TA.
- Students are expected to submit all assignments on time as per the specified due date.
- Late work will **NOT** be accepted and extensions will not be permitted.
- All work and exams must be completed prior to the conclusion of our final class period of the term (see syllabus schedule for dates). The due dates for submissions are set. Extensions beyond those dates will not be permitted.

Exams and General Attendance Policy

Participating in class means logging into our course page on Canvas, reading the weekly materials, doing the written work, joining the optional office hour sessions (if you want to) and being on time with written work are valuable and important components of the college experience and in life more generally. Your participation and presence in our virtual learning environment is an integral part of a successful classroom format. If you are unable to attend an exam session due to an unforeseen emergency, you must notify the instructor as soon as possible and provide evidence of the legitimacy of the events that barred you from completing the exam.

Online Exam Attendance

Exams are to be taken during the scheduled date during the specified time period. Please make note of the midterms and final exam dates and speak to the Professor during the first week of class if you anticipate a problem. We cannot schedule alternative exam times for students who have heavy examination schedules, travel plans, etc. An unexcused absence on a known exam day will result in a grade of "F" (i.e., a "zero") on that exam. To be excused from an exam in the event of a medical or family emergency, it is critical to notify the Professor prior to the exam if that is possible. It is generally not acceptable to email the Professor immediately prior to the test, or during the test session, asking to be excused. As soon as you are able, you would need to present documentation certifying the legitimacy of your urgent absence from the exam period. The exam would need to be completed prior to returning and reviewing the graded exams during the next class period. Please note that make-up tests are not typically administered in this course, and there are limited situations in which a make-up exam will be offered, i.e., if and when a medical and academic clearance has been obtained. If such a scenario occurs, then the Professor will examine the situation and make a decision on how to proceed. Please note that the University strictly limits situations in which a grade of "Incomplete" can be granted. If a student misses one or more exams, there may be an alternative option to complete a cumulative final exam during the final exam period. This would be offered at the sole discretion of the instructor.

As a college student, you are entirely responsible for being prepared for your exam periods and for communicating with your Instructor and Dean of Students if an emergency situation should arise.

If you do miss an exam, there are two steps involved to verify your legitimate, valid, urgent situation:

- (1) If it is a medical condition, please have your doctor write a letter explicitly stating that you were barred from taking the exam that day due to your medical condition.
- (2) Contact the Dean of Students or your Academic Advisor and have them write a memo on your behalf excusing you from the exam and asking me (the faculty member) to pardon you from the test period and grant you additional time on account of your personal emergency or urgent medical condition.

Student Evaluations of Instruction

You are responsible for completing the Student Evaluations for this course and for all your courses with an enrollment of five or more students. The Instructors value your feedback and will use it to improve on teaching and planning in the future sections of the course. Please complete the online survey during the open period at the end of the semester.

Accommodations for Students with Disabilities

Our community values diversity and seeks to promote meaningful access to educational opportunities for all students, and the university is committed to providing access to all programs and curricula to all students. If you have a disability that requires an academic accommodation or the use of auxiliary aids and services in the classroom, and/or testing accommodations based on the impact of a disability, please let the instructor know within the first two weeks of classes. You should also contact the Office of Disability Services (ODS) as soon as possible. The ODS determines the specific needs of students with disabilities, and develops and implements programs and policies to meet those needs. Procedures for registering with ODS can be found online at: <https://ods.rutgers.edu/students/registering-for-services>

The ODS will provide instructors an Accommodation Memo verifying the need for accommodations. Assessing and providing services requires advanced planning, and students are encouraged to request accommodations as close as possible to the beginning of the semester.

Student Learning Center (Tutoring)

If you would like tutoring, or to be a tutor for your peers, contact the peer tutoring office on campus. Visit the website for locations and times:

<https://rlc.rutgers.edu/student-services/peer-tutoring>

Student Health Services and Psychological Counseling Center (CAPS)

To set up an appointment, visit the website:

<http://health.rutgers.edu/medical-counseling-services/appointments/>

CAPS. Tel: 848-932-7884, just call and leave a voicemail with your name, phone number, and RU ID. Try to speak slowly and clearly into the phone. Calls are returned promptly within a few minutes during regular business hours. They call you back from a private number.

Scarlet Listeners

scarlet.listeners@gmail.com

Career Resource Center

Get helpful assistance building your resume, finding volunteer opportunities and summer internships. Visit the website for more information: <https://careers.rutgers.edu/>

Statement on Academic Integrity

The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity. Scholarship, by its very nature, is an iterative process, with ideas and insights building one upon the other. Collaborative scholarship requires the study of other scholars' work, the free discussion of such work, and the explicit acknowledgement of those ideas in any work that informs our own. This exchange of ideas relies upon a mutual trust that sources, opinions, facts, and insights will be properly noted and carefully credited.

In practical terms, this means that, as students, you must be responsible for the full citations of others' ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent. Any breach of this intellectual responsibility is a breach of faith with the rest of our academic community. It undermines our shared intellectual culture, and it cannot be tolerated. Students failing to meet these responsibilities should anticipate disciplinary action.

Academic honesty in writing assignments, examinations, and participation is expected of all students in this class. Academic dishonesty is one of the most serious offenses a student can commit in college. Not only does it violate the University's policy, it severely inhibits your opportunity to develop academically, professionally, and socially.

Statement on Academic Integrity (continued)

Students are expected to maintain the highest standards of honesty in their college work. Cheating, forgery, and plagiarism are serious offenses, and students found guilty of any form of academic dishonesty are subject to disciplinary action.

Academic dishonesty may be intentional or unintentional. Here are some examples:

- Plagiarism (copying word for word or even paraphrasing illegitimately, without proper citation or acknowledgment, from any other written, electronic, or online source)
- Cheating on examinations (regardless of whether you are on the providing or receiving side)
- Unauthorized collaboration or receiving unauthorized assistance on an assignment
- Submitting work for one course that has already been used for another course
- Unauthorized distribution of assignments and exams (including taking screenshot of exam contents)
- Forgery (alteration of college forms, documents, or records, or the signing of such forms or documents by someone other than the proper designee)
- Lying to an Instructor or College official
- Obtaining advance knowledge of exams or other assignments without permission
- Sharing contents and answers on quizzes and exams, whether publicly or privately

Cheating is defined as giving or obtaining information by improper means in meeting any academic requirements. Receiving credit for the same work in more than one course without knowledge or consent of the instructor(s) is also a form of cheating and is a serious violation of academic integrity.

Plagiarism is the representation, intentional or unintentional, of someone else's words or ideas as one's own. Since words in print are the property of an author or publisher, plagiarizing is a form of larceny punishable by fine. When using another person's words in a paper, students must place them within quotation marks or clearly set them off in the text and give them appropriate footnoting. When students use only the ideas and change the words, they must clearly identify the source of the ideas. Plagiarism, whether intentional or unintentional, is a violation of the property rights of the author plagiarized and of the implied assurance by the students when they hand in work that the work is their own.

Faculty members are responsible for making the initial determination of the academic penalty to be imposed in cases of cheating, plagiarism, or forgery and for informing the department chair, the dean and the student in writing of the alleged violation and proposed penalty. The academic penalty may range, for instance, from a reprimand accompanied by guidance about how to avoid plagiarism in the future to failure for the course. The academic dean may request that the Dean of Students send a follow-up letter to the student indicating that they have also been notified of the academic integrity violation and that subsequent violations will lead to judicial action.

If a student has any question about what constitutes a violation of academic integrity, it is that student's responsibility to clarify the matter by conferring with the instructor and to seek out other resources available on the campus.

Schedule of Weekly Topics and Assignments

(schedule as of Jan 10 -- topics and order may be subject to minor changes)

Module	Date	Schedule of Weekly Lecture Topics	Reading
-	18-Jan	No Classes -- in observance of Martin Luther King, Jr. Day	-
1	Jan 18-22	Course Introduction & Overview	-
1	Jan 18-22	Anatomy of Receptors, Neurons and the Brain	Ch. 1 & 2
2	Jan 25-29	Psychophysics & Retinal Physiology: Journey of Light in the Visual System	Ch. 3
2	Feb 1-5	The Retinocortical Pathway & Visual Cortex	Ch. 4
3	Feb 8-12	Color Vision: Theory of Trichromacy, Color Opponency, Color Blindness & Synaesthesia	Ch. 9
4	Feb 15-19	Object Recognition, Face Perception and Visual Illusions Homework 1 Due	Ch. 5
HW 1	Feb 17 (Weds)	Homework 1 Due (Visual System) Note: HW is located in the Assignments tab in Canvas -- Due on or before Weds, Feb 17 -- the submission link closes at 11:59 pm)	-
5	Feb 22-26	Visual Attention, Selective Attention & Eye Movements	Ch. 6
Exam	Mar 3 (Weds)	MIDTERM EXAM 1 (Topics 1, 2, 3, 4 only) Note: The Exam is located in the Quizzes tab in Canvas and will be available from 12am-11:59pm EST (NY/NJ time, and the submission link closes at 11:59 pm.	EXAM 1
6	Mar 8-12	Perceptual Development	Ch. 16
<i>Break</i>	Mar 15-19	<i>Spring Recess -- No classes</i>	-
7	Mar 22-26	Depth, Size and Shape Perception	Ch. 10
8	Mar 29 - Apr 2	Motion and Action	Ch. 7-8
9	Apr 5-9	The Auditory System: Structures and Functions, Sound Localization, Speech and Hearing, & Hearing Loss	Ch. 11, 12, & 13
HW 2	April 7 (Weds)	Homework 2 Due (Auditory System) Note: HW is located in the Assignments tab in Canvas -- Due on or before Weds, April 7 -- the submission link closes at 11:59 pm)	-
Exam	April 14 (Weds)	MIDTERM EXAM 2 (Topics 5, 6, 7, 8 only) Note: The Exam is located in the Quizzes tab in Canvas and will be available from 12am-11:59pm EST (NY/NJ time, and the submission link closes at 11:59 pm.	EXAM 2
10	Apr 19-23	Chemical Senses (Gustation and Olfaction)	Ch. 15
HW 3	April 21 (Weds)	Homework 3 Due (Taste & Smell)	Ch. 15
11	Apr 26-30	Cutaneous Senses (Touch and Pain)	Ch. 14
HW 4	April 28 (Weds)	Homework 4 Due (Neurogenesis and Limb Control)	-
-	May 3 (Monday)	Last Day of Classes!	-
Exam	Date TBA (During Final Exam Week May 6-12)	MIDTERM EXAM 3 (Topics 9, 10, 11 only) Note: The Exam is located in the Quizzes tab in Canvas and will be available from 12am-11:59pm EST (NY/NJ time, and the submission link closes at 11:59 pm.	EXAM 3