Department of Psychology - Columbia University
Cognitive Neuroscience
UN2430 / Course Syllabus / Fall 2024

Instructor: Alfredo Spagna, Ph.D.
Class Meets: M & W 2:40 - 3:55 PM
Room: SCH 501

Office: Schermerhorn 315
Office Hours: M-T 9 to 10AM
Email: as5559@columbia.edu

Teaching Assistants:
Zall Hirschtein (Grad): zsh2109@columbia.edu
Paige Williams (UG): phw2109@columbia.edu
Montaha Rahman (UG): mr4159@columbia.edu
Max Ruohomaa (UG): mr4137@columbia.edu
Reina Dora Baron (UG): rdb2150@columbia.edu

TAs office hours schedule:

Monday:	Paige (5:00 PM - 7:00 PM); Location - TBA but on Zoom this week
Tuesday:	Zall (12:00 PM - 1:00 PM); Location - Zoom
Wednesday:	Max (12:30 PM - 2:30 PM); Location - Schermerhorn 318C
	Zall (4:00 PM - 5:00 PM); Schermerhorn 318c
Thursday:	Montaha (1:00 PM - 2:00 PM); Location - Schermerhorn 318C
	Reina (4:00 PM - 5:00 PM); Location - Schermerhorn 318C
Friday:	Montaha (10:30 AM -11:30 AM); Location - Zoom
	Reina (3:00 PM - 4:00 PM); Location - Schermerhorn 318C

Bulletin Description

This course provides an in-depth survey of the extant data and models of a wide variety of human cognitive functions. Drawing on behavioral, neuropsychological, and neuroimaging research, the course will explore the neural mechanisms underlying complex cognitive processes, such as perception, memory, and decision-making. Importantly, the course will examine the logic and assumptions permitting the interpretation of brain activity in psychological terms

Course Description

This course aims to provide students with a strong foundation in the field of Cognitive Neuroscience, a field that studies the intricate links between the mind, the brain, and behavior. You will first learn basics about brain anatomy and function, and about the methods used to study how the brain supports cognition and behavior. Then, we will explore the various functions of the brain by taking a journey from lower- to higher-level cognitive processes: we will study how we can sense and perceive the world, act in it, learn and think about it, and remember it.

Prerequisites

PSYC UN1001 The Science of Psychology, or an equivalent introductory course in psychology.

Role of PSYC UN2450 in the curriculum

PSYC UN2430 Cognitive Neuroscience is an intermediate-level lecture course, open to undergraduates and students in the Post-baccalaureate Psychology program. It fulfills the following degree requirements:

- For the Neuroscience & Behavior major, UN2430 Cognitive Neuroscience can be used to fulfill
    - the P2. Course in Neuroscience requirement OR
    - the P4. Additional 2000-level Psychology Lecture course but not both

  Students wishing to use UN2430 Cognitive Neuroscience to fulfill the P.4. requirement must then take UN2450 Behavioral Neuroscience to fulfill the P.2. requirement). Please note that because of the significant overlap between this course and the previously offered PSYC UN1010 Mind, Brain & Behavior, students are not permitted to count both courses towards the major. Students who have already taken PSYC UN1010 to fulfill their P.2. requirement should register for a different 2000-level course from the approved list.
- For the Psychology major and concentration and for the post-baccalaureate certificate program, PSYC UN2430 Cognitive Neuroscience will meet the Group II (Psychobiology and Neuroscience) distribution requirement.

Course website

The most up-to-date information, including changes to the syllabus or to the class schedule, announcements, lecture slides and additional materials are contained on the course website on CourseWorks (Canvas). Be sure you are familiar with it, that you are easily able to login to the website. It could be helpful to have the lecture slides with you (whether in print or digital form). If you have problems accessing the course website at any point during the semester, please let me know.

Readings

Textbook (Recommended but optional):
Brain and Behavior: A cognitive neuroscience perspective, by David Eagleman & Jonathan Downar. Oxford University Press. *Copies of this book are on reserve at the Science & Engineering Library in the Northwest Corner building. Call number: QP360.5 .E24 2016*
Slides will be be made available on Courseworks prior to each lecture.

Assessment

Exams will only cover material discussed in the lectures (which follow the recommended textbook fairly closely). Slides can be used as a study aid, but they will not be a good resource on their own unless you come to class and take notes. Material that is only in the textbook and not covered at all in lecture will not be tested.

The format of the exams will be a mix of multiple choice, fill-in, and short-answer questions. While studying, try to emphasize *understanding* and *critical thinking*. Knowing key concepts and definitions is highly valued, of course, but successful students use that knowledge to scaffold a more comprehensive understanding of the material. This is highly advisable for these exams and in general for your career. Rather than simply "memorizing," try to "understand" the material and use your Instructor and the TAs for clarification. Test questions will include more basic definitional / conceptual knowledge as well as application of that knowledge to new scenarios.

Both the Midterm and the Final Exam are going to be administered **through Canvas.** More details about this will be discussed in class.

Make-up exams will be allowed only with written justification (e.g., a note by your doctor or advising dean) documenting a physical or mental health issue or a family emergency. Make-up exams must be taken within one week after the exam and cannot be taken before the actual exam.

Late Submissions Policy: a penalty worth of 50% of an assignment's grade will be applied to late submission (i.e., exams, quizzes, group work, writing). Coursework is set up to apply this penalty automatically. Note: to avoid the penalty for late submission try to work on the assignments ahead of time. It is often the case that Canvas glitches happen during the process of submitting an assignment the last minute. The best way to avoid incurring in the late submission penalty is giving yourself enough time *before* the actual deadline.

Grading

Midterm 1: 30% of the final grade
Midterm 2: 30% of the final grade
Final Exam: 40% of the final grade (cumulative)

Letter Grade Scheme

A+: 100%	B+: 87-89.9%	C+: 77-79.9%	D: 60-60.9%
A: 95-99%	B: 83-86.9%	C: 73-76.9%	F: 0-59/9%
A-: 90-94.9	B-: 80-82.9%	C-: 70-72.9%	

Schedule: The calendar below details topics and readings for each class period.

Date(s)	Topic	Readings
September 4 (W)	Info about the Course and Intro	
September 9 & 11	Brain and Nervous System	Ch 2
September 16 & 18	Neurons and Synapses	Ch 3
September 23 & 25	Vision & Other Senses	Ch 5 & 6
September 30	**Catch Up & Review**	
October 2	**Midterm 1 (W)**	
October 7 & 9	Motor System	Ch 7
October 14 & 16	Attention	Ch 8
October 21 & 23	Memory	Ch 9
October 28 & 30	Sleep	Ch 10
November 4	*Academic Holiday*	
November 6	**Catch Up & Review**	
November 11	**Midterm 2**	
November 13 & 18	Language and Lateralization	Ch 11
November 20 & 25	Decision Making	Ch 12
November 27 & 2	Social Cognition	Ch 15
December 4	Neurological and Psychiatric Conditions	Ch 16
December 9	**Catch Up & Review**	
December 16 (TBC)	**Final Exam (Cumulative)**	

Class policies: Important Information below – please read carefully!

Disability Services: In order to receive disability-related academic accommodations for this course, students must first be registered with their school Disability Services (DS) office. Detailed information is available online for both the Columbia and Barnard registration processes.

Refer to the appropriate website for information regarding deadlines, disability documentation requirements, and drop-in hours(Columbia)/intake session (Barnard).

For this course, students are not required to have testing forms or accommodation letters signed by faculty. However, students must do the following:

1. The instructor section of the form has already been completed and does not need to be signed by the professor.
2. The student must complete the student section of the form and submit the form to Disability Services.
3. Master forms are available in the Disability Services office or online:https://health.columbia.edu/services/testing-accommodations

Religious observances: If you are going to miss class(es) due to religious holidays, you must notify me during the first week of class so that accommodations may be made.

Academic integrity: As members of this academic community, we are responsible for maintaining the highest level of personal and academic integrity: "Each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity. The 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… [and] you must always submit your own work and not that of another student, scholar, or internet agent" (from the Columbia University Faculty Statement on Academic Integrity) http://www.college.columbia.edu/academics/academicintegrity.

Cheating and plagiarism – whether intentional or inadvertent – is a serious violation of academic integrity. Plagiarism is the practice of claiming or implying original authorship of (or incorporating materials from) someone else's written or creative work, in whole or in part, without adequate acknowledgement. If you have any questions about what constitutes plagiarism and/or how to properly cite sources, please come to me. I am more than happy to help. Similarly, if you put yourself in a situation in which you think your best option might be to cut some corners, see me. If you feel like you are falling behind, don't understand the material, or are not confident about your ability to take tests, talk to me as soon as possible instead of taking measures that go against principles of academic integrity. We are here to learn, not to merely judge. It is a far better option to come talk to me than compromise your academic integrity and potentially put your academic standing in jeopardy.

Sexual Respect: Any form of gender-based misconduct will not be tolerated. Columbia University is committed to fostering an environment that is free from gender-based discrimination and harassment, including sexual assault and all other forms of gender-based misconduct. Visit this website for more information: http://sexualrespect.columbia.edu/

Attendance: Coming to class is meaningless if class time is spent inappropriately. Chatting with friends, watching videos online, and browsing social media are not appropriate activities for the classroom. Also, remember to silence your cell phone before class. Generally, eliminate distractions as much as possible to respect your classmates, as well as increase your chance of staying focused and learning the material during class.