Cognitive Neuroscience
Psyc 3200
Summer 2025

Main Presession (19May-16Jun)
Monday-Friday 10:45 am – 12:45 pm in White-Gravenor #202

Instructor: Dr. Dick Dubbelde (he/him)
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Office Hours: By appointment.
Office: 301I (that's an I, pronounced like 'eye') White-Gravenor Hall

Course Overview

Cognitive neuroscience is an emerging interdisciplinary field in which psychological, physiological, and computational methodologies are brought together to understand the neural basis of cognitive processes. In this course, we will consider the application of various methodologies (fMRI, cell recording, lesion studies) to understand cognitive processes such as visual perception, attention, memory, language, semantics, and the organization and control of action. The emphasis will be on how the application of converging methodologies enables us to find important insights into the nature of cognitive processes in the brain.

Learning Outcomes

At the end of the course, students will be able to:

- Recognize the current questions, issues, and methods within cognitive neuroscience.
- Evaluate the strengths and limitations of these methods in understanding cognition.
- Read and critique peer-reviewed scientific articles.
- Summarize and present key findings from scientific articles.

Instruction and Independent Work Time
2.5 hours of direct instruction per week
3-5 hours of independent work per week

Required Text(s)

There is a recommended textbook for this course: Essentials of Cognitive Neuroscience (Second Edition) by Bradley R. Postle. The exams in this course will be on material that is covered in lecture, but there is a large amount of dense material in the class, so I recommend reading the text as a supplement to the lectures. The book covers nearly everything we discuss in class, and more, so this is a very good resource. Additionally, nearly every slide in the lectures (unless the slide is just there to make a joke work) has one or more citations on it.

Computer Accounts

This class will use Canvas and your Georgetown email for all class announcements and submitting assignments. It is your responsibility to check Canvas and your personal Georgetown email frequently for course announcements and class updates. Canvas will also be used for submitting all assignments.

Academic Integrity

Academic integrity is taken very seriously, and so you take it seriously as well. The full details of what academic integrity entails can be found here: https://honorcouncil.georgetown.edu/system/policies/ , but for this class, the main things that may come up are plagiarism (trying to pass off someone else's work as your own) and originality (the work that you do for this class should be new and turned in only for this class). Be careful to properly cite anyone else's work which you discuss in your papers or on your exams, write your own papers and exam answers, and write original work for this course.

Academic Integrity and AI

AI tools are not to be used in this class. There is writing in this class, but the point of it is exercise, not product generation. The writing is designed and assigned for you to work through the process yourself so that you can better understand it. As such, you're not permitted to use AI text generating tools at any point when working on your assignments, and I will treat the use of AI text generators as academic dishonesty, meaning, I will report the incident to the Honor Council.

Additional Policies

There are a number of other policies which are university-wide and thus apply to this class. These policies regard Accessibility and Accommodations, Equal Opportunity and Non-Discrimination, the Honor System (which was mentioned above), Protection of Minors, Religious Holidays, the Right to Privacy/FERPA, Study Days for Undergraduate Students, and Title IX/Sexual Misconduct. For full details on these university-wide policies which apply to this course, please use this link: https://cndls.georgetown.edu/georgetown-policies/

Grading

Your final grade is dependent on two components: question sets and attendance.

Item	Points
Question Set 1	20
Question Set 2	20

Question Set 3	20
Question Set 4	20
Attendance	20
Total	100

Question Sets

At the end of each week I'll post a set of essay questions. There will be at least one question per lecture that we've covered since the last question set. These questions you'll answer over the weekend and submit by the time that class starts the following Monday.

Attendance

This class is in the summer and it is every day. The temptation to not be in class is going to be STRONG. With that in mind, I'll give you 5 points a week (One a day) if you show up to and engage with every class. If you do need to be absent, we can talk about an absence being excused, but you'll need to have an unavoidable reason. If for whatever reason a class needs to be cancelled (e.g. our school is in DC and we live in a tumultuous time), please watch your e-mail for an announcement about how we'll deal with that. If class is cancelled, you obviously won't lose points for not attending that class.

Grade Point Scale

Points are rounded to the nearest hundredth, but no more. That's two decimal points. No more. If at the end of the course your grade comes to 83.99, that is a B-. There is nothing that can be done. I know this might seem harsh, but please review the above note about how the grading scheme in this course is very flexible.

Grade Point Scale

Grade Point Scale	
A	94-100
A-	90-93
B+	88-89
B	84-87
B-	80-83
C+	78-79
C	74-77
C-	70-73
D+	68-69
D	64-67
D-	60-63
F	<59

SONA Research Participation

You must participate in 3 hours (6 credits) of SONA studies. If you do not complete the research hours or an alternative assignment by the deadline, your final course grade will be lowered by one step (e.g., B- will become C+; A will become A-).

The SONA credits you accumulate during this semester can count toward the credit requirement for every psychology class you are enrolled in this semester. For example, if you are taking three 3000-level psychology courses and you accumulate 6 SONA credits, you have met the requirement for all three of your courses. Note that PSYC-1000 (General Psychology) and PSYC-2000 (Research Methods) have a higher credit requirement that you are required to meet in any semester you are enrolled. You will need to acquire new SONA credits for each semester that you are enrolled in psychology courses.

You must be 18 to participate in SONA. If you are under 18 or do not want to participate in SONA, you must inform your instructors via email at least 1 month before the last day of classes and complete the alternative assignment to avoid a lowered course grade.

Study participation is an invaluable contribution to the research of psychologists here at Georgetown, and is a unique way for you to learn how psychological research is conducted.

Instructions to participate in SONA

If you have not created an account previously, go to: georgetown.sona-systems.com/ and click on "Request Account". First time users should provide their name and georgetown email address, create a user ID. Select our class from the menu of available courses. Once you've logged in and selected our course, you must complete a pre-screen survey. Then you're ready to choose a study to participate in.

Each half hour of study participation is worth one SONA credit. A tally of the credits you earn will be automatically sent to the instructor at the end of the semester. Although you must assign your SONA credits to one course, your overall credits will be what is considered when it comes to fulfilling the requirement for each class. **The last day of classes this semester is the last day you will be able to participate in SONA studies for course credit.**

If you have any questions about SONA, email GRVP at: grvp@georgetown.edu

How to Succeed

Come to every class and be prepared to actively listen and ask questions. Most importantly, if you are not understanding a concept in the lecture, tell me. You are almost definitely not the only person not understanding. After each lecture, review the slides and your notes, being diligent to identify the main concepts in each lecture. Each lecture has a table of contents slide. If you can explain why each of those bullet points are there, then that likely means you understood the main points of each lecture. It will likely not suffice to scan the material in the week before the exam, as we will be covering too much in too great a depth. If you are unclear on a concept or feel you are falling behind, talk to me immediately. I am here to help and I love answering questions.

Also, this course is designed to not require anything more than basic prior knowledge of the brain and the mind. That being said, there is a lot of dense material in this course and there

is often specialized vocabulary. I will do my absolute best to define every concept and term, but it might be necessary for you to spend some amount of time looking things up, do a bit of background reading, or at the very least, raise your hand in class and ask me to spend a bit more time on a concept.

Additionally, while the material of this course is very heavily focused on concepts rather than details, the details are none the less important. I highly recommend using a spaced repetition flashcard system (SRS) to assist you in learning the material. I use Anki, I highly recommend it, and it is my best friend.

Course Schedule

The course schedule is subject to change. The exams and paper due dates will not change (barring large-scale calamity, which may postpone due dates), but the topic of each class is very likely to change depending on the pace of the class, how engaged the students are, how many questions are asked, and my erratic whims.

Weekday	Date	Topic	Due
Monday	19May	(1) Syllabus and Introduction	
Tuesday	20May	(2) History of Cognitive Neuroscience	
Wednesday	21May	(3) Evolution of the Brain	
Thursday	22May	(4) Necessary Anatomy and Physiology	
Friday	23May	(5) Methods I	
Monday	26May	(6) No Class – Memorial Day	
Tuesday	27May	(7) Methods II	
Wednesday	28May	(8) Early Vision	
Thursday	29May	(9) Late Vision	
Friday	30May	(10) Size Perception	
Monday	2Jun	(11) Attention I	
Tuesday	3Jun	(12) Attention II	
Wednesday	4Jun	(13) Attention III	
Thursday	5Jun	(14) Attention IV	
Friday	6Jun	(15) Objects	
Monday	9Jun	(16) Vision for Action	
Tuesday	10Jun	(17) Motor Planning	
Wednesday	11Jun	(18) Memory I	
Thursday	12Jun	(19) Memory II	
Friday	13Jun	(20) Memory III	
Monday	16Jun	(21) Memory IV	