

**CGSC 3501B Cognitive Neuroscience, Winter 2024**

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**Course Hours and Locations**

Welcome to Cognitive Neuroscience class! Our class meets on Thursdays from 11:35 am to 2:25 pm.

**Course Prerequisite(s)**

Third year standing and CGSC2001.

**Course Description: Goals and Objectives**

This course explores the neurocognitive processes that support attention, memory, vision, hearing, motor control, language, and reasoning. It introduces basic neuroanatomy, neuroimaging and behavioural measures of cognition, and discusses brain development and evolution. Evidence from patients with neurological conditions (e.g., Alzheimer's disease, Parkinson's disease, amnesia, aphasia, etc.) and from neurotypical human participants will be discussed.

Upon completion of this course, students should be able to:

- Describe key concepts, principles, and overarching themes relevant to cognitive neuroscience.
- Articulate the concepts and current states of knowledge in cognitive neuroscience.
- Engage in a critical scholarly discussion on a psychological topic using evidence to support claims.
- Critically evaluate the presentation of scientific ideas and research.
- Apply principles of cognitive neuroscience to the understanding of everyday problems.

**Text and Readings***Required*

- Selected journal articles. These will all be available through Brightspace. The readings are organized by week.

**Course Web Page (Brightspace)**

The course website is located at <https://brightspace.carleton.ca/>

On this site you will find the course outline, schedule, grading rubrics, assigned readings, and useful links.

**Information for Students with Disabilities**

Students with a disability who require academic accommodations should come and discuss these with me as soon as possible.

## Course Calendar

Week	Topic	Evaluation
1 (11/01)	Introduction	
2 (18/01)	Nervous System	
3 (25/01)	Methods of Cognitive Neuroscience	
4 (01/02)	Sensorimotor System	Test 1 (Based on Weeks 1, 2, 3)
5 (08/02)	Sensation and Perception: Vision <u>Science Communication Project: Check 1</u>	
6 (15/02)	Object Recognition (CLASS WILL BE DONE DISTANTLY)	
7 (22/02)	Fall Break / NO CLASS	
8 (29/02)	Hearing & Language	Test 2 (Based on Weeks 4, 5, 6)
9 (07/03)	Memory & Learning <u>Science Communication Project: Check 2</u>	
10 (14/03)	Attention	Test 3 (Based on Weeks 8, 9)
11 (21/03)	Social Cognition; Emotions	
12 (28/03)	Brain Development & Plasticity	
13 (4/04)	Final Project Presentations (1 per Group) <b>Due: Final Paper (1 per Group)</b>	Test 4 (Based on Weeks 10, 11, 12)

## Evaluation

Evaluation Components	Due Dates	Percent of Grade
1. Tests (4 x 10% each)	See schedule above	40
2. Paper Discussions	ongoing	30
3. Final Paper (Group Paper)	ongoing	15
4. Final Project (Group Project)	ongoing	10
5. Participation in Group Paper + Project	ongoing	5

### Tests (40% of your final grade)

There are 4 summative tests that will be given as noted in the schedule. The tests will cover content from lectures and assigned readings. Each test is worth 10% of the final grade. If you miss a test for any unapproved reason, you will not be able to make it up later. If you miss a test due to an approved absence from class, please get in touch with me or a TA ASAP to arrange for a make-up test.

The format of tests will be a combination of multiple-choice questions, fill the blanks questions, short answers questions, and extended answers questions. All tests are open book. **Please prepare for these tests.** You will not have sufficient time to complete each test if you start looking for answers to every single question. I adopt “an open book” approach to my tests to ease the level of stress. You are still expected to know key concepts discussed in the class.

### **Paper Discussions (30% of your final grade)**

Each weekly class will have an assigned reading. You are expected to read a paper before our weekly meeting and be ready to discuss it. The professor will lead discussions. Questions for discussions are available at Brightspace. To ensure that all students have a chance to participate in the discussion, the professor will ask all students to provide their responses in writing to 2 randomly-selected discussion questions.

After each class, your participation will be assessed on a three-point scale: *3 – Class engagement was sustained (3 or more substantive contributions to discussion); 2 – Class engagement was adequate (2 substantive contributions to discussion); 1 – Class engagement was minimal (1 substantive contribution to discussion); 0 – Did not participate in discussion/No evidence that you read the article/Absent.* Your final discussion grade will be based in large part on an average of these scores. Grades are assigned weekly to provide timely feedback; one or two poor marks will not significantly damage a final participation grade.

The one absence rule means that I will drop the lowest 1 of the weekly paper discussion marks. Students missing class for a legitimate reason and who wish to make up for missed class should arrange for a meeting with a TA to discuss assigned readings with a TA.

### **Final Project (30% of your final grade)**

Your final assignment is a two-part group project. Both parts communicate important and relevant information about five empirical research articles from the field of cognitive neuroscience on a topic of your choosing. The first part of the project is a 5-page APA style paper, summarizing the five articles. The second part of the project is a science communication project (e.g., youtube video, infographics, tiktok-style video, animated story, etc.), in which the same relevant information about the articles is communicated in a medium in which a lay audience could understand it. You must have at least five articles, but you may also have more if you would like to include additional research. You must use *empirical research articles*, meaning that the articles must have been published in academic journals and must describe a study that was conducted on the topic. Review articles and book chapters are not acceptable for this project.

## Important Information

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

Grades entered by Registrar:

WDN = Withdrawn from the course

DEF = Deferred

## PLAGIARISM

The University Academic Integrity Policy defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.” This includes reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source.

Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and
- failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of “F” for the course.

## Statement on Student Mental Health

As a University student you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. Here is a list that may be helpful:

**Emergency Resources (on and off campus):** <https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

#### **Carleton Resources:**

- Mental Health and Wellbeing: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

#### **Off Campus Resources:**

- Distress Centre of Ottawa and Region: (613) 238-3311 or TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>
- Empower Me: 1-844-741-6389, <https://students.carleton.ca/services/empower-me-counselling-services/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>
- The Walk-In Counselling Clinic: <https://walkincounselling.com>

#### **Requests for Academic Accommodations**

##### **ACADEMIC ACCOMMODATION**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

**Pregnancy obligation:** write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).

**Religious obligation:** write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details [click here](#).

**Academic Accommodations for Students with Disabilities:** The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, please request your accommodations for this course through the [Ventus Student Portal](#) at the beginning of the term, and no later than two weeks before the first in-class scheduled

test or exam requiring accommodation (*if applicable*). Requests made within two weeks will be reviewed on a case-by-case basis. For final exams, the deadlines to request accommodations are published in the [University Academic Calendars](#). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

### **Survivors of Sexual Violence**

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/equity/sexual-assault-support-services>

### **Accommodation for Student Activities**

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation will be provided to students who compete or perform at the national or international level. Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

### **Important Information**

- Students must always retain a hard copy of all work that is submitted.
- Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting <http://carleton.ca/ccs/students/>
- November 15, 2023: Last day for academic withdrawal from full fall and late fall classes
- March 15, 2024: Last day for academic withdrawal from full winter, late winter and fall/winter courses.

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**For a list of dates and deadlines, including holidays and exam dates, please visit:**

<https://calendar.carleton.ca/academicyear/>