

**CGSC 3501a Cognitive Neuroscience, Fall 2022**

**Instructor:** Nadine Charanek 520-2600 x.4148  
Office hours: via zoom by appointment  
Email: [nadinecharanek@cmail.carleton.ca](mailto:nadinecharanek@cmail.carleton.ca)  
**Teaching Assistant:** TBA  
Office hours: via zoom by appointment  
Email:

**Course Hours and Locations**

The class will be in person. We will meet in person in Dunton Tower Room 2203 on Wednesdays and Fridays from 10:05-11:25. Lecture material will be available for viewing one week before class. Please attend all lectures (usually on Wednesdays followed by flash talks on Fridays). When we meet, we will (a) discuss and clarify the lecture content, (b) listen to presentations of papers done by students, (c) discuss assigned readings, and (d) complete brief weekly quizzes. In addition, there will be a midterm and a final exam (see schedule below).

**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 considered

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	Assigned Reading
1 (07/09)	<b>Introduction</b>	No Reading
1 (09/09)	<b>Intro to Cognitive Neuroscience</b>	No Reading
2 (14/09)	<b>Nervous System</b>	@Brightspace
2 (16/09)	<b>Flash Talks+ Quiz</b>	
3 (21/09)	<b>Methods of Cognitive Neuroscience</b>	@Brightspace
3 (23/09)	<b>Flash Talks+ Quiz</b>	
4 (28/09)	<b>Sensorimotor System</b>	@Brightspace
4 (30/09)	<b>Flash Talks+ Quiz</b>	
5 (05/10)	<b>Sensation and Perception: Vision</b>	@Brightspace
5 (07/10)	<b>Flash Talks+ Quiz</b>	
6 (12/10)	<b>No Class. Conference.</b>	No Reading
6 (14/10)	<b>No Class. Conference</b>	
7 (19/10)	<b>Object Recognition</b>	@Brightspace
7 (21/10)	<b>Flash Talks+ Quiz</b>	
8 (24/10)	<b>Fall Break / NO CLASS</b>	24-28 October
9 (02/11)	<b>Midterm</b>	No Reading
9 (04/11)	<b>Flash Talks+ Midterm feedback/discussions</b>	
10 (09/11)	<b>Hearing &amp; Language</b>	@Brightspace
10 (11/11)	<b>Flash Talks+ Quiz</b>	
11 (16/11)	<b>Memory &amp; Learning.</b> <b>Online class due to Conference.</b>	@Brightspace
11 (18/11)	<b>No Class. Conference.</b>	
12 (23/11)	<b>Attention, Consciousness, Executive Functioning</b>	@Brightspace
12 (25/11)	<b>Flash Talks+ Quiz</b>	
13 (30/11)	<b>Social Cognition &amp; Emotions</b>	@Brightspace
13 (02/12)	<b>Flash Talks+ Quiz</b>	
14 (07/12)	<b>Brain Development &amp; Plasticity</b> <b>Flash Talks+ Quiz</b>	@Brightspace
14 (09/12)	<b>No class</b>	

**I will be away for two conferences the weeks of October 10-15 and November 16-22. There will be an online lecture for the week of November but not in October. Flash Talk presentations will be cancelled for those two weeks. After the second conference, we will resume lectures on November 23 and presentations on November 25.**

### Evaluation

Evaluation Components	Due Dates	Percent of Grade
1. Midterm Exam	See schedule above	30
2. Final Exam	During the exam period	30
3. Brief Weekly Quizzes	ongoing	15
4. Paper Presentation (Flash Talks)	ongoing	10
5. Paper Discussions	ongoing	15

### **Midterm and Final Exams**

There are 2 summative exams that will be given as noted in the schedule. The exams will cover content from lectures, assigned readings, and flash talks. The midterm exam will be based on the content of Weeks 1-7. The final exam will be based on the content of Weeks 10-13. Each exam is worth 30% of the final grade. If you miss an exam for any unapproved reason, you will not be able to make it up later. If you miss an exam due to an approved absence from class, please get in touch with me or a TA ASAP to arrange for a make-up exam.

The format of exams will be a combination of multiple-choice questions, fill the blanks questions, short answers questions, and extended answers questions. Study guides accompanying lectures are provided at Brightspace to assist you in preparation.

### **Brief Weekly Quizzes**

Brief quizzes will be given weekly during our meetings. Each quiz will contain 5 questions to be completed within 3 minutes. The quiz will be based on content of that week's lecture. There will be 10 quizzes (and a trial quiz administered during week 1). I will drop the lowest 1 of the 10 weekly quizzes. Together the quizzes will account for 15% of the final grade. If you miss a quiz for any reason, you will not be able to make it up later. Study guides accompanying lectures are provided at Brightspace to assist you in preparation for quizzes.

### **Paper Presentation (Flash Talks)**

Each student will make a brief presentation of ONE empirical paper that has not been assigned for reading to class. The papers will be assigned during the first week of classes. If you missed our first meeting, please contact a TA to get a paper assigned to you.

You have to read the assigned paper and present it in class. You will have FIVE minutes to present research described in the paper to class. Your presentation should have no more than 5 slides (e.g., slide 1 – explain a research question; slide 2 – describe the methods, slide 3(4) – describe the results, slide 5 – conclusions). At the end of your presentation, students will have TWO minutes to ask you questions.

Your presentation is worth 10% of your final grade. A grading rubric is available at Brightspace.

### **Paper Discussions**

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 instructor will lead discussions. Questions for discussions are available at Brightspace. To ensure that all students have a chance to participate in

the discussion, the instructor will ask all students to provide their responses in the chat window to 3 randomly-selected discussion questions. Your responses will be visible to the instructor only.

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 paper 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 11 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.

**Important Information**

- Students must always retain a hard copy of all work that is submitted.
- All final grades are subject to the Dean’s approval.
- 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/>
- **The last day for academic withdrawal for Fall courses is November 15<sup>th</sup>, 2022.**
- For a list of dates and deadlines, including holidays and exam dates, please visit: <https://calendar.carleton.ca/academicyear/>

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

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### **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-andcrisis/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-mecounselling-services/>
- **Good2Talk:** 1-866-925-5454, <https://good2talk.ca/>
- **The Walk-In Counselling Clinic:** <https://walkincounselling.com>

### Statement on Pandemic Measures

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

**Feeling sick?** Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you should follow Carleton's **symptom reporting protocols**.

**Masks:** Masks are no longer mandatory in university buildings and facilities. However, we continue to recommend masking when indoors, particularly if physical distancing cannot be maintained. We are aware that personal preferences regarding optional mask use will vary greatly, and we ask that we all show consideration and care for each other during this transition.

**Vaccines:** While proof of vaccination is no longer required to access campus or participate in in-person Carleton activities, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible and submit their booster dose information in **cuScreen** as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the **University's COVID-19 website** and review the **Frequently Asked Questions (FAQs)**. Should you have additional questions after reviewing, please contact [covidinfo@carleton.ca](mailto:covidinfo@carleton.ca).

### 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, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first inclass scheduled test or exam requiring accommodation (if applicable). 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/wpcontent/uploads/Accommodation-for-Student-Activities-1.pdf>