

CGSC 3501b	Cognitive Neuroscience, Winter 2021
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Professor:	Olessia Jouravlev	DT 2209	520-2600 x.4148
Office hours:	via zoom by appointment		
Email:	<u>olessia.jouravlev@carleton.ca</u>		
Teaching Assistant:	TBD		
Office hours:	TBD		
Email:			

Course Hours and Locations

The class will be in the blended format. We will meet via zoom weekly on Thursdays from 11:35 to approximately 12:30 - 13:00. Lectures will be pre-recorded and available for viewing one week before a scheduled meeting. Please watch a lecture BEFORE a meeting. When we meet online via zoom, we will (a) clarify any questions that you might have about 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 3 summative tests administered during class time (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 CU Learn. The readings are organized by week.

Recommended

- American Psychological Association (2010). *Publication Manual of the American Psychological Association* (6th Edition). American Psychological Association. Washington, DC. Available from Indigo or amazon.ca. You can access the highlights of APA format at: <https://owl.english.purdue.edu/owl/resource/560/01/>

- Strunk, W. Jr. & White, E. B. (1999). *The Elements of Style, 4th Edition* by W. Strunk Jr. & E. B. White, Allyn & Bacon. This handy little book will help you become a better writer.
- Northey, M., & Timney, B. (2012). *Making sense in psychology: A student's guide to research and writing*. Don Mills, Canada: Oxford University Press

Course Web Page (cuLearn)

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

On this site you will find the course outline, schedule, grading rubrics, assigned readings, and useful links. We will use the discussion forum to post questions on assigned readings.

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 and Evaluation Components

Week	Topic	Assigned Reading	Quiz
1 (14/01)	Introduction	No Reading	
2 (21/01)	Nervous System	@CULearn	
3 (28/01)	Methods of Cognitive Neuroscience	@CULearn	
4 (4/02)	Sensorimotor System	@CULearn	
5 (11/02)	Sensation and Perception: Vision	@CULearn	Test 1: Weeks 1, 2, 3, 4
6 (18/02)	Winter Break	No Reading	
7 (25/02)	Object Recognition	@CULearn	
8 (4/03)	Hearing & Language	@CULearn	
9 (11/03)	Memory & Learning	@CULearn	Test 2: Weeks 5, 7,8
10 (18/03)	Attention, Consciousness, Executive Functioning	@CULearn	
11 (25/03)	Social Cognition	@CULearn	
12 (1/04)	Emotions	@CULearn	
13 (8/04)	Brain Development & Plasticity	@CULearn	Test 3: Weeks 9, 10, 11, 12

Evaluation

Evaluation Components	Due Dates	Percent of Grade
1. Summative Tests (3 x 10)	See schedule above	30
2. Brief Weekly Quizzes	ongoing	10
3. Paper Presentation (Flash Talks)	ongoing	10
4. Paper Discussions	ongoing	10
5. Final Paper	27 April 2021	40

Summative Tests

There are 3 summative tests that will be given as noted in the schedule. The test will cover content from the previous weeks (lectures, assigned readings, and flash talks). Each test is worth 10% of the final grade, and together the tests will account for 30% of the final grade. The tests will be given during our weekly meetings and will last 20 minutes. 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 a TA to arrange for a make-up tests.

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

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 11 quizzes (and a trial quiz administered during week 1). I will drop the lowest 1 of the 11 weekly quizzes. Each quiz is worth 1% of the final grade, and together the tests will account for 10% 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 CULearn 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 CULearn.

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 professor will lead discussions. Questions for

discussions are available at CULearn. To ensure that all students have a chance to participate in the discussion, the professor 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 Professor 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.

Final Paper

The goal of the final paper is to get students read original research articles and make use of knowledge acquired in this class to discuss those papers critically. Students should read and critically review at least 5 articles that address a common topic, but use, at least, two different methods (e.g., patient studies & fMRI, fMRI & MEG, MEG & EEG, etc). The list of topics will be available at CULearn. When reviewing the papers, emphasize the ideas that are described and the experiments that led to these discoveries/claims. It would be best to have some continuity among the research you describe so you can develop the historical flow of ideas. It would also be preferable if you identified competing ideas/views and covered them in your final paper.

The paper will be a maximum of 10-pages (double-spaced). Your written work will be evaluated for content, style, grammar, spelling, and clarity -- the APA manual and Strunk & White will be helpful in this regard. Furthermore, APA format (i.e., the format for much of the work published in cognitive science journals, as specified by the American Psychological Association) will be required and assessed. All assignments and papers should be typed and double-spaced with 1 inch (2.54 cm) margins. Pages should be numbered consecutively, starting with the title page.

Late Papers and Missed Deadlines

Grades will be decremented by 5% per day that the assignment is late. If there are extenuating circumstances (e.g., illness), you will need to provide a self-report documentation. Contact me as soon as you know that you will not be able to meet the deadline to make alternative arrangements.

REGULATIONS AND INFORMATION COMMON TO ALL COGNITIVE SCIENCE COURSES

Grades

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

Academic Regulations, Accommodations, Etc.

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website.

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 more details see the Student Guide

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 see the Student Guide

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 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 in - class scheduled test or exam requiring accommodation (if applicable). After requesting an accommodation from PMC, meet with me to ensure accommodations arrangements are made. Please consult the PMC website for the deadlines to request accommodations for the formally - scheduled exam (if applicable).

Plagiarism: The University Senate defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.” This can include: • 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; • submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else; • using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment; • using another’s data or research findings; • failing to acknowledge sources through the use of proper citations when using another’s works and/or failing to use quotation marks; • handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs."

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.

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/>

For a list of dates and deadlines, including holidays and exam dates, please visit:
<https://carleton.ca/registrar/registration/dates-and-deadlines/>