

Issues in Cognitive Science
(CGSC5100)

Carleton University, Fall 2022

Day/Time: Mondays, 11:35am – 2:25pm **Location:** DT2203

Prof. Myrto Mylopoulos

Office: 3A47 Paterson Hall **Office Telephone:** 613-520-2600 x3943

Office Hours: Mondays, 2:30pm-3:30pm; Tuesdays, 2:30pm-3:30pm; and by appointment
over Zoom

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Course Description

In this course, we will examine key issues and debates in cognitive science, both classic and contemporary, across a range of topics that are representative of the field. Our engagement with these specific topics will serve the more general aim of understanding how interdisciplinary research and theorizing in cognitive science is conducted, what progress the field has made since its inception, and what future directions it might take.

Course Objectives

Our aim in this course will be to support and develop the following skills:

- Ability to critically reflect on key theoretical claims and empirical findings in cognitive science.
- Ability to read research articles in a careful, active, and engaged manner.
- Ability to articulate in writing a critical viewpoint on a theoretical claim or empirical finding.
- Ability to draft a research proposal fit for a Master's scholarship application.
- Ability to respond to a professional talk in writing.
- Ability to critically summarize a research paper and guide a group discussion of its content.
- Ability to clearly and effectively argue in favour of a position on a relevant theoretical debate within cognitive science in a well-researched paper.

Course Materials

- All required readings and additional resources will be made available on Brightspace.

For basic background material, I recommend the following:

- Bermúdez, José Luis. 2020. *Cognitive Science: An Introduction to the Science of the Mind*. Third edition. CUP.

- Cain, Mark, J. 2016. *The Philosophy of Cognitive Science*. Polity Press.
- Friedenber, Jay and Gordon Silverman. 2015. *Cognitive Science: An Introduction to the Study of Mind*. Third edition. Sage Publications.
- Kolak, Daniel, William Hirstein, and Peter Mandik. 2006. *Cognitive Science: An Introduction to Mind and Brain*. Taylor & Francis.

Course Requirements

Course Component	Percentage of Final Grade
Reading Assignments (Perusall)	10%
Class Participation	10%
Critical Reading Responses (x5)	25%
Research Proposal	5%
Colloquium Response	5%
Class Presentation	15%
Term Paper (incl. Abstract)	30%

Reading Assignments

Readings will be assigned for every class session except the first. All readings are required, except for those marked ‘optional’ on the course syllabus. While optional, you are strongly encouraged to do these readings, as they’ll help both to fill in the background for, and expand upon, the material we’ll be discussing in class.

To work through the readings, we will be using Perusall, a collaborative e-reading platform that enables you to tackle the readings together as a group in between our class sessions. The reading assignments you complete on Perusall will be worth **10%** of your final grade. They will be due the day before class (Sundays) by 5pm.

We will discuss further details for these reading assignments and a grading rubric on the first day of class. Reading assignments on Perusall will only be counted in your grade from week 3 onwards, to allow you to try out the platform and gain some familiarity with it first.

To register for a free Perusall account, go here: <https://app.perusall.com/> For info on how to use it, please see: <https://support.perusall.com/hc/en-us/categories/360002173133-Students>

Class Participation

Participation is a key component of this seminar and worth **10%** of your final grade.

There are four main ways to earn your participation grade:

1. By attending class and contributing to our weekly class discussion. You can do so by raising questions pertaining to the course material, answering questions asked by myself or one of your classmates, and generally being active and engaged throughout the duration of each class.

2. By contributing to the weekly class discussion about the course readings on Perusall (especially going above and beyond what is strictly required for the reading assignment).
3. By asking questions during the Q&A session after a class presentation.
4. By attending office hours to discuss course material.

If for any reason you expect to miss a class, I would appreciate a quick note letting me know.

Critical Reading Responses

One of the main objective of this course is to critically engage with theoretical claims and empirical findings presented in the readings and their implications. As such, you will be asked to write critical responses to the weekly readings (choose one to focus on). You may write **up to six** critical reading responses (max. 500 words each) over the course of the semester (**starting in week 2**). Only your **best five** responses will be counted. These will each be worth **5%** of your final grade for a total of **25%**.

The responses are intended to give you an opportunity to critically reflect, in structured writing, on the main findings, claims, arguments, or theories you encounter in the readings. As such, **you should not merely summarize** the material you are addressing, though of course some summary will be necessary, but rather **share your own reflections on it**.

We will go over a marking rubric in class and some general suggestions for how you might approach these responses.

Responses will be submitted via Brightspace and are due **by 5pm on the day before the class** for which the relevant reading is assigned (Sundays). (Earlier than that is of course fine, too.) **Late submissions will not be accepted.**

You are encouraged to use ideas you develop in these responses as the basis for your term paper.

OGS Research Statement

You will write a draft research statement according to the guidelines specified by the Ontario Graduate Scholarships (OGS) Program. The due date for this is **Monday, October 31st**.

(This is to give you enough time to submit the final, polished version by the Carleton **November 15th** deadline.) We will discuss further details in class. In the meantime, you can find relevant information here: <https://gradstudents.carleton.ca/awards-and-funding/external-awards/ogs/>

Colloquium Response

The weekly colloquium talk (to be held online, Wednesdays, 3:00pm - 4:30pm) is an excellent way to learn what cognitive scientists (often in the local area) are currently working on, to engage with members of the department, and to develop the skill of asking well-formulated questions in response to a research presentation. **You are strongly encouraged to attend each talk. (I will post a link to the colloquium schedule once it is up.)**

You will select **one** talk to write a response paper on (using the same guidelines as those for our reading responses, except the questions you formulate should be ones that it would be appropriate to ask the speaker). This is worth **5%** of your final grade.

Class Presentations

Starting in **week 3**, each of you will have the opportunity to do a class presentation on a topic of your choice. This is to give you the chance to explore some research areas that are not included in the planned course schedule, or further examine ones that are. This is worth **20%** of your final grade. You will sign up for presentation slots on a first-come, first-served basis.

Presentations will be approximately 20 mins. with an additional 10 mins. for Q&A.

Requirements:

- (i) Find one research article on your topic to serve as the basis of your presentation.
- (ii) Prepare a handout (3-4 pages) or slides that will guide the class through your presentation, including some background on your topic, a general summary of the research article you've chosen, and some discussion questions for the class.

You should arrange to meet with me **at least one week** before your presentation date to discuss which article you will be using. If you would like further guidance on how to decide on a topic/select an article, please don't hesitate to reach out.

A marking rubric for the presentations will be made available on Brightspace.

Term Paper

You are required to write one term paper (**15-20 pages**) to be submitted on Brightspace on **Friday, December 9th**. It will be worth **30%** of your final grade. Late submissions will be penalized **5% per day or part day**, including weekends, except in the case of severe illness or emergency, with appropriate documentation (where applicable).

You will also write an abstract (**150 – 250 words**) for this paper, to be submitted on Brightspace no later than **Friday, November 18th**. This will be worth **5%** of your paper grade, and will be graded on the basis of completion only (pass/fail).

We will discuss further instructions/guidelines for the final paper closer to the due date.

Online Office Hours and Availability

My regular office hours are as stated at the beginning of this document and will be held in person. I'm happy to meet you over Zoom on other days/times as well—just make arrangements with me over email.

I will do my best to respond to your emails within 24 hours, but I may be a bit slower on weekends and holidays. If you think your message will require a lengthy reply from me, please arrange an online appointment instead.

Schedule of Course Topics

*****May be revised. Check Brightspace for most up-to-date version.*****

Week 1 (Sept. 12): Introduction

- Optional: Newell (1973), “You Can’t Play 20 Questions with Nature and Win”

Week 2 (Sept. 19): Rationality

- Lieder & Griffiths (2020), “Resource Rational Analysis: Understanding Human Cognition as the Optimal Use of Limited Computational Resources”
- Tversky & Kahneman (1983), “Probabilistic Reasoning”

Week 3 (Sept. 26): Skill and Expertise

- Christensen et al. (2016), “Cognition in Skilled Action: Meshed Control and the Varieties of Skill Experience”
- Dreyfus & Dreyfus (1986), “Five Steps from Novice to Expert”

Week 4 (Oct. 3): Language

- Dehaene et al. (2022), “Symbols and Mental Programs: A Hypothesis About Human Singularity”
- Hauser, M.D. et al. (2002). “The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?”
- Optional:
 - Fedorenko & Varley (2016), “Language and Thought Are Not the Same Thing: Evidence from Neuroimaging and Neurological patients”

Week 5 (Oct. 10): No Class (Thanksgiving)

Week 6 (Oct. 17): Artificial Intelligence

- Marcus (2018), “Deep Learning: A Critical Appraisal”
- Turing (1950), “Computing Machinery and Intelligence”
- Optional:
 - Lake et al. (2017), “Building Machines That Learn and Think Like People”

Week 7 (Friday, Oct. 21): Consciousness

- Seth & Bayne (2022), “Theories of Consciousness”
- Chalmers (1995), “Facing Up to the Problem of Consciousness”

Week 8 (Oct. 24): No Class (Fall Break)

Week 9 (Oct. 31): Concepts

- Machery (2016), “The Amodal Brain and the Offloading Hypothesis”
- Barsalou (1999), “Perceptual Symbol Systems”

Week 10 (Nov. 7): Perception

- Firestone & Scholl (2016), “Cognition Does Not Affect Perception: Evaluating the Evidence for ‘Top-Down’ Effects”

- Fodor (1985), “Précis of the Modularity of Mind”

Week 11 (Nov. 14): Emotion

- Boiger et al. (2018), “Beyond Essentialism: Cultural Differences in Emotions Revisited”
- Ekman & Friesen (1971), “Constants Across Cultures in the Face and Emotion”

Week 12 (Nov. 21): Theory of Mind/Psychological Reasoning

- Baillargeon et al. (2016), “Psychological Reasoning in Infancy”
- Dennett (1987), “The Intentional Stance and Why It Works”

Week 13 (Nov. 28): Moral Psychology

- Haidt (2001), “The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment”
- Railton (2017), “Moral Learning: Conceptual Foundations and Normative Relevance”
- Optional:
 - Greene (2014), “Beyond Point-and-Shoot Morality: Why Cognitive (Neuro)science Matters for Ethics”
 - Rini (2015) “Morality and Cognitive Science”

Week 14 (Dec. 5): TBA

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	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;
- 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-and-crisis/emergencynumbers/>

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>

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.

Requests for Academic Accommodations

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 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 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>

Important Information

- Students must always retain a copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- Please send all email from your Carleton CMail account.