

PSY493H1 S Cognitive Neuroscience

July-August 2024

Tuesdays and Thursdays, 2:10-5pm, Ramsey Wright (RW) 143 (in person)

Course Website <https://q.utoronto.ca/courses/345507>

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Prerequisites PSY201H1/ ECO220Y1/ EEB225H1/ GGR270H1/ IRW220H1/ POL222H1/ SOC202H1/ STA220H1/ STA238H1/ STA248H1/ STA288H1/ ECO220Y5/ PSY201H5/ STA215H5/ STA220H5/ PSYB07H3/ STAB22H3/ STAB23H3/ STAB57H3, and one of PSY260H1/ PSYB38H3 or PSY270H1/ PSY270H5/ PSYB57H3/ COG250Y1 or PSY290H1/ PSY290H5/ PSYB64H3/ HMB200H1/ PSL300H1 It is your responsibility to ensure that you have met all prerequisites listed in the Psychology section of the A&S Calendar for this course.

Exclusion PSY393H5/ PSYB55H3/ PSYC31H3

Objectives This is a capstone lecture course surveying research on how the mind arises from the brain. The first objective of the course is to understand how processes in human brains (ranging from the firing of a single neuron to the dynamics of billions) support cognitive abilities (such as recognizing a face, remembering a birthday from childhood, understanding the words in a spoken lecture, or planning a route home from class). The second objective of the course is to understand the methods of contemporary cognitive neuroscience research, to enable students to read primary literature and to understand ongoing debates. Students will additionally develop skills in critically evaluating the claims and methods of cognitive neuroscience research through reading contemporary literature in the field and synthesizing their own thoughts in written form.

Reading material (Recommended, not required) Gazzaniga, Ivry, Mangun (2018). **Cognitive Neuroscience (5th ed.)**: Norton Press. ISBN 978-0-393-66784-4 (ebook)/ISBN 9780393603170 (hardcover). Please see Quercus for the required weekly readings.

Marking Scheme

Evaluation	Description	Weight	Date
Term Tests (2)	Term tests based on preceding lectures and readings (non-cumulative).	25% each	July 18, August 8
Reading Quizzes	Quizzes on the assigned literature readings (not textbook material).	10% (2.5% each)	Weekly on Mondays
Term Paper	Paper outline – 10% Final term paper – 25%	35%	Outline July 12 Final paper August 2
Participation	Contributions to in-class and/or online discussion	5%	----

Equity, Diversity and Inclusion

The University of Toronto is strengthened by our community's diversity. To foster this diversity, we must commit whole-heartedly to equity and inclusion. There is a zero-tolerance policy in this learning environment for racism, sexism, xenophobia, homophobia, transphobia, ableism, and all other forms of bigotry. All members of our classroom should be dedicated to creating a welcoming and respectful community in which everyone feels safe to bring their whole selves to class.

Accessibility & Accommodations

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) at the beginning of the academic year by visiting <http://www.studentlife.utoronto.ca/as/new-registration>.

Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.

Laptop & No-laptop Zones

Technology can support student learning, but it can also become a distraction. To facilitate folks who benefit from technology as well as those who may be distracted by it, we will have a laptop and a no-laptop section of class. Folks who wish to use laptops are kindly asked to sit on the **left-hand side** of the classroom.

Schedule

Week	Date	Lecture	Topic	Assignments
1	July 2	1	Course Overview & Methods	Syllabus Quiz
	July 4	2	Introduction to Neuroanatomy	Learning Strategies Potluck due July 5
2	July 9	3	Sensation & Perception	Reading Quiz 1 due July 8
	July 11	4	Memory	Term Paper Outline due July 12
3	July 16	5	Language	Reading Quiz 2 due July 15
	July 18	6	Term Test 1 (on lectures 1-5)	
4	July 23	7	Attention	Reading Quiz 3 due July 22
	July 25	8	Class time for Term Paper peer reviews	Work on term paper
5	July 30	9	Cognitive Control	Reading Quiz 4 due July 29
	Aug 1	10	Emotion & Decision-Making	Term Paper due Aug 2
6	Aug 6	11	Consciousness	Reading Quiz 5 due Aug 5
	Aug 8	12	Term Test 2 (on lectures 7-11)	

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Religious Accommodations

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of cultural and religious traditions. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (such as a test or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

Assessments

Term Tests

There will be two non-cumulative Term Tests throughout the course. Each test will assess knowledge and understanding of the lecture and literature reading materials from the preceding weeks. Textbook readings are not required to complete Term Tests, although they are recommended. The tests will each include a multiple-choice portion, short answer questions, and one long answer essay style question.

Term Test 1

Test 1 will be based on Lectures 1-5 covering the materials on methods, neuroanatomy, sensation and perception, memory, and language. The Term Test will be completed in person during class time on July 18th.

Term Test 2

Term Test 2 will be based on Lectures 7-11 covering the materials on attention, cognitive control, emotion and decision-making, and consciousness. The Term Test will be completed in person during class time on August 8th.

There is no final exam during the Final Examination Period for this course.

Reading Quizzes

To build skills in reading and critical analysis of current cognitive neuroscience research, each week you will complete the assigned article readings and the following Monday answer a few questions regarding the methodology, claims, and scope of each paper from the previous week (2 lectures).

Reading Quizzes will be completed online through Quercus and should take approximately 15 minutes to complete, though they will be available for 30 minutes after starting. Quizzes will be due by 5:00pm on Mondays. Your **top 4/5 quizzes** will be selected to make up 10% of your course grade.

Term Paper

One goal of the course is to build skills in critically evaluating the claims and methods of cognitive neuroscience research through reading contemporary literature and synthesizing your own thoughts in written or oral form. In the final writing assignment, you will write an 8-10 page opinion article about a current contentious topic in cognitive neuroscience. The paper will summarize evidence regarding the current debate and will include your personal thesis on the issue, as supported by evidence. It will also acknowledge and reasonably refute any counterevidence.

Term Paper Outline (10%) - Due **July 12 at 5pm**

As part of the development process, students will first submit a planned outline for their Term Paper through Quercus one month in advance of the due date. The topic must be relatively current and involve a reasonable amount of disagreement in the field of cognitive neuroscience across different authors. The outline should include the chosen topic, thesis, and a list of empirical evidence that will be cited in support of each side of the controversy. Evidence should be listed in the form of annotated citations.

Peer Review (ungraded)

One week prior to the due date, you will have the opportunity to bring a draft of your Term Paper to class (July 25th) for peer review, either printed out or on a laptop, without your name attached. You will then take turns anonymously reviewing each other's work using a rubric to assess the efficacy of the argument and the evidence and counterevidence presented. Peer reviews must be respectful and involve constructive criticism only. There will be no feedback from your TA or instructor at this time.

Final Term paper (25%) Due **August 2 at 5pm**

The final draft of the paper will be due before the end of term, submitted on Quercus, and can differ in topic or structure from the outline. However, I strongly recommend making use of the outline assignment and peer review to draft and edit your paper. The best way to write an effective paper is to give yourself enough time!

Participation

To build knowledge and think critically about what we learn, it's important to actively engage with the material. My hope is that everyone will come to class ready and willing to participate, either in person or through the Discussion Board on Quercus.

At the end of the course, you are invited to submit a self-assessment (1 page max) of your participation using the Participation Rubric (under Modules -> Participation on Quercus). Participation will be evaluated through the consistency, quality, and respectfulness of contributions to class discussion.

I will take self-assessments into consideration along with discussion boards and in-class discussions to give a final participation grade. Be aware that it may not reflect the grades you have chosen for yourself if they are not sufficiently supported by evidence of participation.

There is no penalty for shyness. Many people (myself included) are not always comfortable being vocal when occupying a student role. Students who do not speak often in person can still earn a top participation mark by contributing actively to online discussions and thoughtfully asking questions and contributing opinions on the Discussion Boards.

Learning Strategies Potluck

One easy way to participate in class discussion and earn participation points is the learning strategies potluck. The purpose of this activity is to help you identify ways to support your own learning and think about what works for you! You will also practice finding and summarizing a cognitive neuroscience paper.

You will research and identify a tip or strategy for studying (e.g., handwriting notes, creating diagrams) that is supported by empirical evidence from a cognitive neuroscience or psychology study. You will post a 1-2 sentence summary of a study that found evidence supporting this strategy, as well as a full APA citation for the paper, on the Quercus Discussion Board by **July 5th at 5pm.**

Excellent participation will include reading over other student's posts and commenting on at least 1-2 other strategies/tips that you find interesting, have questions about, or have personal experience using.

Lecture policies

Lecture Slides

Lecture slides will be posted prior to each lecture. Consider the environment before printing off slides to take notes. Please be advised that while the lecture slides will contain broad outlines of the content covered, they do not include all content covered in live and recorded lectures.

Course materials are provided for the exclusive use of enrolled students. These materials should not be reposted, shared, put in the public domain, or otherwise distributed without the explicit permission of the instructor.

Video Recording and Sharing (Download and Re-use Prohibited)

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session.

Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

For questions about recording and use of videos in which you appear please contact your instructor.

Student Recordings

Because recordings will be provided for all lectures, students may not create additional audio or video recordings without written permission from the instructor. Permission for such recordings will not be withheld for students with accommodation needs.

Communication policies

Online Communication

Whenever possible, consider coming to office hours with questions about course content. Also consider posting your question on the Discussion Board; this helps other students with your same question and counts towards your participation grade! For questions about grading, please contact the TA and allow at least 2 business days for response time.

To help us spot your email, please include the course number in the subject line of any emails as well as the general topic of the message. Please do not use the “Inbox” on Quercus for communication, as the instructor and TAs will not be checking this. You are required to use your U of T email (mail.utoronto.ca) for all course-related communication and should check this address regularly.

Quercus Information

This Course uses [Quercus](#) to post information about the course including readings, discussion boards, and course assignments required to complete the class, as well as sharing important announcements and updates. New information and resources will be posted regularly as we move through the term.

Special note about grades posted online: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point

in the term, until they have been formally approved and posted on ACORN at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.

Late/Missing Assignments

Extension Requests

Throughout the term, students are allotted up to three no-questions-asked 24-hour extensions. These can be applied to Reading Quizzes and the Term Paper assignments. You can request such an extension by submitting the quiz titled “Extension Request” on Quercus with the assignment name.

If you require an extension for medical or personal reasons beyond the three allotted, contact me as soon as you are able. I must receive notice within at least one calendar week of the assignment due date, ideally in advance, and extensions will be granted at the instructor’s discretion.

Extension Requests cannot be applied to Term Tests.

Specific Medical Circumstances

If you become ill and it affects your ability to do your academic work, consult me right away. Normally, I will ask you for documentation in support of your specific medical circumstances. This documentation can be an Absence Declaration (via ACORN) or the University's Verification of Student Illness or Injury (VOI) form.

The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness. If you cannot submit a VOI due to limits on terms of use, you can submit a different form (like a letter from a doctor), as long as it is an original document, and it contains the same information as the VOI (including dates, academic impact, practitioner's signature, phone and registration number). For more information on the VOI, please see <http://www.illnessverification.utoronto.ca>. For information on Absence Declaration Tool for A&S students, please see <https://www.artsci.utoronto.ca/absence>.

If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Missed Term Tests

There will be no make-up tests. If you are unable to write a test due to a legitimate reason (e.g., illness), as noted above you should contact me as soon as possible with the appropriate documentation (see Specific Medical Circumstances above). I must receive notice within at least one calendar week of the assignment due date and will

allocate marks among other assignments as appropriate. Unexcused missed tests will receive a mark of 0.

Late Penalty Policy

If an assignment is overdue and the student has not submitted an extension request or requested an extension from the instructor for medical/personal reasons, a late penalty of 5% will be applied every 24 hours after the deadline. Late assignments will no longer be accepted after 7 days post-deadline.

Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or other forms of academic consideration. They may be able to email your instructors directly to provide a College Registrar's letter of support and connect you with other helpful resources on campus.

Regrading

Request for regrading must be submitted via the “Regrading Request” quiz on Quercus. These requests can only be submitted a minimum of 3 days and a maximum of 14 days after grades have been posted. The request submission must include adequate written justification as to why a regrade is requested. Be as specific as possible. Please be aware that regrading may result in the same grade, a higher grade, or a lower grade, as the whole assignment will be revisited.

Academic Integrity

If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources.

For example, to learn more about how to cite and use source material appropriately and for other writing support, see the [U of T writing support website](#). Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see [A&S Student Academic Integrity](#) and the [University of Toronto Website on Academic Integrity](#).

All suspected cases of academic dishonesty will be investigated following procedures outlined in the [Code of Behaviour on Academic Matters](#).

Plagiarism Detection Tool

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

Note that this review will happen automatically when your paper is submitted on Quercus.

Cannot use Generative AI

The use of generative artificial intelligence tools and apps is strictly prohibited in all course assignments unless explicitly stated otherwise by the instructor in this course. This includes ChatGPT and other AI writing and coding assistants. Use of generative AI in this course may be considered use of an unauthorized aid, which is a form of cheating.

This course policy is designed to promote your learning and intellectual development and to help you reach course learning outcomes.

Resources

Writing Resources

A key part of your University of Toronto education is refining your writing skills. In this course, a key learning outcome is the ability to critically evaluate the claims and methods of cognitive neuroscience research in written form.

The university provides its students with a number of resources to help them improve their writing, including one-on-one appointments with writing instructors, free workshops, and English Language Support. For more information on campus writing centres and activities, visit writing.utoronto.ca.

Mental Health Resources

As a student, you may experience challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation, financial concerns, family worries and so forth. These factors may affect your academic performance and/or reduce your ability to

participate fully in daily activities. Everyone feels stressed now and then – it is a normal part of university life. Some days are better than others, and there is no wrong time to reach out. There are resources for every situation and every level of stress.

There are many helpful resources available through your College Registrar or through Student Life (<http://studentlife.utoronto.ca> and <http://www.studentlife.utoronto.ca/feeling-distressed>). An important part of the University experience is learning how and when to ask for help. Please take the time to inform yourself of available resources.

