



## PSY493H1S – Cognitive Neuroscience

Wednesday 11am-2pm Sidney Smith 1074

### Contact Information

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| <b>Instructor:</b><br>Alex Barnett<br>alexander.barnett@mail.utoronto.ca   | <b>Teaching Assistant(s):</b><br>Shireen Parimoo<br>shireen.parimoo@mail.utoronto.ca |
| <b>Office Hours:</b><br>Wednesday 2-3pm<br><a href="https://utoronto.zoom.us/j/82563940197">https://utoronto.zoom.us/j/82563940197</a> or<br>SS4031 (if in-person activities resume) | <b>Office Hours:</b><br>By appointment   |

### Course Description, Goals, and Prerequisites

This is a survey course in cognitive neuroscience. The course focuses on the neural substrates of mental processes including perception, attention, memory, language, plasticity, emotion and social cognition. By the end of the course students will have a basic understanding of the neural processes that support human cognition, research methodology, as well as on-going debates within the field.

#### Prerequisites:

PSY201H1/ECO220Y1/EEB225H1/GGR270H1/POL222H1/SOC202H1/STA220H1/STA238H1/STA248H1/STA288H1/PSY201H5/STA215H5/STA220H5/PSYB07H3/STAB22H3/STAB23H3/S TAB57H3, and 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.

### Reading Material/Textbook(s)

Banich, M. T., & Compton, R. J. (2018). Cognitive Neuroscience (4th ed.): Cambridge University Press.

\* Additional readings may be assigned later and will be available on Quercus.

### Course Evaluation/Marking Scheme

| Assignment    | Weight | Date     |
|---------------|--------|----------|
| Midterm 1     | 25%    | Feb 9    |
| Paper Topic   | 10%    | Mar 9    |
| Midterm 2     | 25%    | March 30 |
| Paper         | 35%    | April 6  |
| Participation | 5%     | ***      |

## Midterms

The test material will come primarily from the lectures but will also include material from the assigned chapters and readings. Students are responsible for attending lectures and reading the assigned materials, as lectures will not cover all material contained in the readings (and vice versa). These midterm tests are closed book tests.

## Paper Topic

Students are responsible for providing a topic for their paper four weeks before the final paper deadline. This is to allow students to plan their paper ahead and make sure their topic is suitable. The TA will provide feedback. Paper topics will be submitted through Quercus no later than 11:59pm on March 9.

## Paper

Students will write a 2000-2500 word paper and follow APA style formatting. Students can choose between 1) a debate paper in which they will discuss a current debate in cognitive neuroscience, and 2) a research proposal in which students will propose a new original study to address a current gap in the literature. Paper topics will be submitted through Quercus no later than 11:59pm on April 6.

## Participation

Unannounced quizzes will be given during some lectures. Students are responsible for attending each class, reviewing material, and completing the in-class quizzes.

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## Course Webpage/Quercus

The course Quercus website (<https://q.utoronto.ca/>) will be your one-stop resource for all course documents, announcements. Lecture slides will be posted on Quercus the night before class at the latest under "Modules".

**You are responsible for announcements posted to Quercus, so check this page regularly for updates.**

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## Course Policies

### Missed Tests

*Missed or unexcused exams will be treated as zeros unless valid documentation is provided. Should midterm 1 or midterm 2 be missed with valid documentation, a make-up exam will be arranged. Students who are absent from academic participation for any reason (e.g., COVID, cold, flu and other illness or injury, family situation) and who require consideration for missed academic work should report their absence through the online absence declaration. The declaration is available on ACORN under the Profile and Settings menu.*

### Late Assignments

Assignments will be penalized 10% for each day after the deadline, to a maximum of 4 days (40%) after which papers will no longer be accepted. Extensions will only be granted in exceptional circumstances (i.e. illness or family emergency) with valid documentation as described above.

### Other

Students are welcome to review their assignments with the course TA. Please note that if you are not satisfied with the way your assignment/midterm exams were graded you should first contact the course TA and discuss with her your concern. You can request a re-grade with specified justification but note that this will require an entire re-grade of the assignment/test and not only the parts where you think you were marked unfairly. As such, your grade could

increase, decrease, or remain the same. Students have no more than two weeks from the time of receiving their grade on a piece of term work to discuss it with, or ask for a re-grade from the TA/Instructor.

### **Classroom Etiquette**

Please treat each other in a respectful manner at all times. All students are expected to uphold the code of student conduct (<https://governingcouncil.utoronto.ca/secretariat/policies/code-student-conduct-december-13-2019>). While you are in class you are expected to be mentally present: PLEASE turn off all non-instructional electronic devices and online distractions. Everyone is entitled to a positive learning environment and your non-learning activities are likely distracting both you and those around you. You are expected to attend classes and take responsibility for learning the material.

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## **Academic Resources**

### **Access & Diversity:**

Students with diverse learning styles and needs are welcome in this course. If you have an ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) ([accessibility.utoronto.ca](http://accessibility.utoronto.ca)) at the beginning of the academic year. 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 then assess your medical 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 condition with any instructor, and your instructors will not reveal that you are registered with AS.

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 backgrounds, cultural traditions, and spiritual beliefs. 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 (like 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.

### **Writing:**

As a student here at the University of Toronto, you are expected to write well. The university provides its students with a number of resources to help them achieve this. For more information on campus writing centres and writing courses, please visit <http://www.writing.utoronto.ca/>.

### **Academic Integrity and Plagiarism:**

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what

constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <https://www.academicintegrity.utoronto.ca/smart-strategies/> ).

### Other Resources

Student Life Programs and Services (<http://www.studentlife.utoronto.ca/>)

Academic Success Services (<http://www.asc.utoronto.ca/>)

Counselling and Psychological Services (<http://www.caps.utoronto.ca/main.htm>)

| Course Outline/Schedule |          |                                  |               |                 |
|-------------------------|----------|----------------------------------|---------------|-----------------|
| Lecture                 | Date     | Topic                            | Readings      | Due             |
| 1                       | Jan 12   | Neurophysiology                  | Ch 1          |                 |
| 2                       | Jan 19   | Neuroanatomy and Methods         | Ch 3          |                 |
| 3                       | Jan 26   | Sensation and Perception         | Ch 5          |                 |
| 4                       | Feb 2    | Motor Control                    | Ch 4          |                 |
| 5                       | Feb 9    | <b>Midterm 1</b>                 |               |                 |
| 6                       | Feb 16   | Attention                        | Ch 10         |                 |
|                         | Feb 23   | Reading week                     |               |                 |
| 7                       | March 2  | Attention and Executive Function | Ch 11         |                 |
| 8                       | March 9  | Memory                           | Ch 9          | Paper topic due |
| 9                       | March 16 | Language                         | Ch 8          |                 |
| 10                      | March 23 | Brain development and Plasticity | Ch 15         |                 |
| 11                      | March 30 | <b>Midterm 2</b>                 |               |                 |
| 12                      | April 6  | Emotion and the social brain     | Ch 12 & Ch 13 | Final Paper due |

### Communication

Email will be the primary way of communication between TAs and the instructor. When you e-mail, **please include the course number in the subject heading**, save conceptual questions to office hours, and limit correspondence to weekdays. Additionally, I will only respond to e-mail that has been forwarded to me from the class TA, so please send all course-related e-mail to the above address. If you have extended questions it's best to come to office hours or request an appointment.

**Please make sure the answer to your questions is not found in this syllabus or in the online resources before emailing the course TA or instructor.**

### Online Lectures

#### Notice of 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 the recording and use of videos in which you appear, please contact your instructor.