

SYLLABUS

Memory and the Brain
PSYC 21-F202 (on campus)

Weekly discussion times Wed 13:00-14:30 EST, Fri 11:30-13:00 EST

Location: Macintosh Corry Room A309

Instructor: Dr. Jeff Wammes

Contact: jeffrey.wammes@queensu.ca

Office hours: Wed 14:30-15:30 EST, or by appointment

1.0 Land Acknowledgment

I will begin this syllabus by acknowledging that Queen's is situated on traditional Anishinaabe and Haudenosaunee territory. We are grateful to be able to learn and teach on these lands. By acknowledging this traditional territory, we recognize its history and its significance for the Indigenous Peoples who lived and continue to live, upon it.

2.0 Diversity and Inclusion

In this class, it is my goal to ensure that students have a great learning experience. For this to happen, consistency with the university code, offensive statements that violate the university code will not be tolerated. Every student in this class must abide

lived experiences (e.g., of minoritization or oppression).

3.0 Course Summary

In this course you will gain a depth of understanding of the literature studying memory from multiple methods and theoretical perspectives. You will learn about research exploring the mechanisms that allow us to learn, store, and update memories. Along the way, you will gain skills in experimental design.

4.0 Learning Outcomes

In this course you will learn to:

5.0 Weekly Structure of the Course

Each week (after the first one) will go in depth about a given focal area within research in human memory supported by up to four papers. Content will be posted for each week by Wednesday morning.

Before the start of each week, an update about the events of the week will be posted. It will often be a short introductory post to the topic with some relevant background.

On some programming weeks (indicated in a later section) there will also be a file posted, which contains the necessary program and stimuli to run an online experiment with a problem that needs to be fixed.

Every Wednesday (by 13:00 EST), a short response (see details in a later section) will be posted. This is either a response to both of the papers of the week, or a programming week. It is a reflection on your experience viewing/fixing/preventively trying out an experiment.

Every Wednesday (13:00-14:30 EST) and Friday (11:30-13:00 EST) we will meet synchronously in Macintosh Corry room A309 to discuss the papers for the week. Each student will act as a discussion leader (see details in a

needed. Details on grace periods, dropping low scores, and alternative options for assignments are included in the syllabus. Details on the assessment below.

9.1 Response [15%]

Each week by Wednesday at 11:00 EST, you will need to submit a response via Canvas. If you are the discussion leader for the week, the purpose of these responses is to ensure that you have read the papers and done the programming exercises for the week and thought about

Some of these papers are complex! The instructor expects questions and clarifications. However, these must be asked well before the presentation approaches. If you are the discussion leader for the week, you can expect replies to questions within 24 hours of them via email

9.3 Participation [15%]

This class involves communicating with your peers. First and foremost, in line with university policy, there is zero tolerance for any language that targets or belittles any group, including but not limited to comments that are homophobic, transphobic, ableist or ageist. Having said that, participation is very important in any seminar, and even more critical with complex papers. We will need to talk through some of the details to better understand the papers. This course is meant for the sharing of ideas, and we will want to hear your perspectives. As an added benefit, speaking up in class makes the class more interesting! The instructor, the discussion leader, and the discussion assistant will moderate, and you will be graded on the basis of your contributions to our weekly group meetings (and optional FlipGrid comments) that this is not a situation where you must say a certain number of things every class. Too often this type of requirement forces people to provide input when they would not otherwise. People's interests and experiences vary, and inherently, you will find some papers more interesting and provoking than others. You should not comment just to comment. Your engagement and posting on FlipGrid will be considered in scoring your participation. See [Discussion/Participation Guideline](#)

9.4 Discussion Assistant [15%]

Live sessions are on Wednesdays and Fridays. We will cover all of the papers presented for the week. These sessions will take place on Macintosh

Your final project is a Research Proposal (Due by 25 by 2359 EST). The standard form of this (read on for alternatives) is a written document that is < 2500 words (~10 pages, excluding references). Choose a topic of interest in human learning and memory. This can be one of the topics covered in class, or a topic of your own choosing. The Proposal should cover the prior literature on the topic, and a proposed new experiment. It should be clear from your coverage of the prior literature why an experiment is likely to be impactful or interesting and how the existing research motivated your experimental question. Your detailing of your proposed experiment should be clear enough that one could design and run the experiment you proposed and understand the predictions. Optionally you can submit a rough, high level description of your plan for a shorter proposal (Due by 28:59 EST). This should be no longer than 250 words, but should include the subject area, a few papers that inspired you, and a short description of the methods and predictions. It's okay if your plan changes completely between the proposal and the final due date.

As an alternative, you can write a shorter (~1500 words) coverage of the prior literature and design a lab experiment that describes the methods, predictions and anticipated results. Alternatively, a shorter coverage of the prior literature (~1500 words), provide a lab.js experiment (Exported for offline use), and a summary of the predictions. This alternative is not required or preferred, but simply included to give students more alternative ways to express their thoughts.

Automatic extensions of four days will be allowed for this Final Project.

10.0 Discussion/Participation Guidelines

University is a place to share, question and challenge ideas. Each student brings a different lived experience to draw upon. To help one another learn the most we can from this experience please consider the following:

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through and reread your writing before you post or send them to others.
6. It's ok to disagree with ideas, but do not make personal attacks.
7. Be open to being challenged or confronted on your ideas and to challenging others with the intent of mutual growth. Do not demean or embarrass others.
8. Encourage others to develop and share their ideas

11.0 Copyright of Course Materials

Unless otherwise stated, the material on the course website, including all slides, presentations, assignments, are the instructor's intellectual property. The material is copyrighted and for the sole use of students registered in PSYC420. The material on the website may be downloaded for a registered student's personal use but should not be distributed or disseminated to anyone other than students registered in this course. This is a departure from academic integrity to disseminate course materials.

Queen's students, faculty, administrators and staff all have responsibilities for upholding values of academic integrity

This course makes use of Turnitin, a third-party application that helps maintain standards of excellence in academic integrity. Normally, students will be required to submit their course assignments through onQ to Turnitin. Instructors' work will be included as sources in the Turnitin reference database, where they will be used so as to detect plagiarism.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work during the process of grading. Turnitin compares submitted files against its extensive database of content, and produces a similarity report and a similarity score for each assignment. A similarity score is the percentage of a document that is similar to content held within the database. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to determine the authenticity of work as a part of a larger review process.

Please read [Turnitin's Privacy Policy](#)

12	Nov 2+25	Dynamics and Interactions	Duncan, Sadanand & Davachi, 2012 ²² Yoo et al., 2012 ²³	Topic Response #6 due Final Project due
13	Nov 30+Dec 02	Odds and ends	Addis, Wong & Schacter, 2007 ²⁴ Clark & Squire, 2013 ²⁵	Topic Response #7 due

18.0 Reading List

¹ Craik, F. I., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning And Verbal Behavior*, 11(6), 671-684. [\[link\]](#)

² Roediger, H. L. (1980). The effectiveness of four mnemonics in ordering recall. *Journal of Experimental Psychology: Human Learning and Memory*, 6(5), 558-568. [\[link\]](#)

³ Kuhl, B. A., Rissman, J., & Wagner, A. D. (2012). Multiple patterns of visual category relations during episodic encoding are predictive of subsequent memory. *Neuropsychologia*, 50(4), 458-469. [\[link\]](#)

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- ²³ Yoo, J. J., Hinds, O., Ofen, N., Thompson, T. W., Gabrieli, J. D., Triantafyllou, C., & Gabrieli, J. D. (2012). When the brain is prepared to learn: enhancing learning using real-time fMRI. *Neuroimage*, 59(1), 324-331. [\[link\]](#)
- ²⁴ Addis, D. R., Wong, A. T., & Schacter, D. L. (2007). Remembering the past and imagining the future: distinct neural substrates during event construction and elaboration. *Neuropsychologia*, 45(7), 1363-1377. [\[link\]](#)
- ²⁵ Clark, R. E., & Squire, L. R. (2013). Similarity in form and function of the hippocampus in rodents, monkeys and humans. *Proceedings of the National Academy of Sciences*, 110(13), 5103-5107. [\[link\]](#)