

# Psychology 390 section 001 - Research Methods in Memory - Spring 2022

## Lectures/Labs/Oral Presentations

Tuesdays & Thursdays 10am to 11:20am in PAS 1237

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**Instructor:** Dr. Myra Fernandes [mafernan@uwaterloo.ca](mailto:mafernan@uwaterloo.ca)

**Office Hours:** Thursdays 11:30am to 12:30pm in person

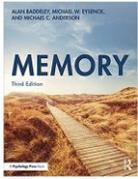
**Office location:** PAS 4054

### Teaching Assistants and office hours:

Adam Cox [adam.cox@uwaterloo.ca](mailto:adam.cox@uwaterloo.ca) by appointment <https://calendly.com/adamwcox/30min>

Ryan Yeung [rcyeung@uwaterloo.ca](mailto:rcyeung@uwaterloo.ca) by appointment <https://calendly.com/rcyeung/30min>

### Required Course Text



Baddeley, A., Eysenck, M.W., & Anderson, M.C. (2020). *Memory*. 3<sup>rd</sup> edition. New York, NY, Psychology Press

<https://uwaterloo-store.vitalsource.com/products/memory-alan-baddeley-michael-w-v9780429831294?term=9781138326095>

### Course Description

Several major themes in the area of memory research are explored in this course. Historically influential ideas, current theoretical debates, and the application of cognitive, social, neuro-imaging, and neuropsychological approaches to the study of memory are reviewed and discussed. Questions to be addressed include: How is information encoded and retrieved? What types of memory exist? How can we measure these? Why does forgetting occur? What biological changes accompany memory loss? Can memory impairments be rehabilitated?

There is a lab component to this course. The goal is to introduce students to *E-Prime software*, which is often used to collect data for research studies. These labs will give you a “hands-on” approach to understanding the methods currently in use for much of the current research in memory.

### Course Structure and Outcomes

By the end of the course, you will have a detailed knowledge of a wide range of memory phenomena and a solid foundation from which to pursue more advanced study. The introduction to *E-Prime* will familiarize you with how experiments are set up, and the variables that can be manipulated. Attendance at lectures and in labs is essential, as portions of the evaluation require participation, and completion of worksheets. Oral presentations are designed to showcase your ability to communicate science. The Research Idea paper will allow you to apply your knowledge and outline an avenue for future investigation.

### Overview of Evaluation

Written assignment: Mid-term review	DUE June 14 <sup>th</sup>	5%
Lab worksheets and activities	6 X 4% and 1 X 6% =	30%
Mid-term Test	in class June 23 <sup>rd</sup>	30%
Oral presentation; Choice of topics	Various July dates	15%
Participation in Discussions	Various July dates	3%
Research Idea paper	DUE August 2 <sup>nd</sup>	17%

## Details on each Evaluation

### Written assignment: Mid-term review Q&A

In order to help you and your classmates prepare for the upcoming mid-term test, you will prepare 5 Questions and either write out or draw a sketch of the Answers; these are to be based on a concept, definition, methodology, or experiment, discussed in Chapters 1, 2, 3, 4, 5, 6, 8, or 15. Each Q&A should be approximately ½ page in length, double-spaced, in 12-point font, with 2 cm margins all around. You must include Q&As that cover material from at least 3 different chapters.

Please label your submission file with your last name and chapter coverage (e.g. FernandesChapter2and3and6.pdf). \*Do NOT include your Student ID number anywhere within your assignment, as all submissions will be posted on LEARN for all students to see.

Please submit your assignment anytime before **June 14<sup>th</sup> by 11:59pm via the LEARN Dropbox. This assignment is worth 5% of your grade.** These files will each be posted on LEARN, and will serve as a study guide for you and your classmates.

### Lab Component

The goal of the lab component is to introduce you to E-Prime software, which is often used to collect data for research studies. All lab materials are posted on LEARN. On scheduled lab dates there is no formal lecture. Instead, you will come to PAS 1237, and use the Power point slides associated with each lab to help you to a) learn about the software and complete the required Worksheets for each lab and b) use E-Prime to create programs. Dr. Fernandes and a TA will be in the classroom to help you navigate through the content and requirements for each Lab, and can answer questions as you complete each Lab and Worksheet.

All Worksheets are administered via the Quiz function within LEARN, and must be completed and submitted by 11:59pm on the assigned lab date. The first six labs are worth 4% each, and the last one is worth 6% (**total = 30% of your grade**).

### Mid-term Test

The test is worth **30% of your grade**, and will consist of multiple choice, short answer questions, and longer essay questions based on material covered in Lectures, and in Chapters 1, 2, 3, 4, 5, 6, 8, and 15 of your course Textbook. The test will take place **in person, in PAS 1237, on JUNE 23<sup>rd</sup>**

### Oral presentation: Choice of Topics

In July, groups of students will be doing oral presentations.

For each of the listed Topics/Date, groups (of 2 students each) will prepare 16-minute Power Point presentations. **Each student will be responsible for presenting for 8-minutes.** Each student must prepare their OWN 8-minute presentation, and communicate it in person to the class. **Please submit your power point slides to the Dropbox on LEARN** by 9am on the date of the scheduled presentation.

\*Following each topic presentation, classmates can make suggestions for research extensions on the topic, OR note future real-world applications, OR offer presentation feedback, via the

**Discussion Feedback sheet** (distributed in class), or by offering oral commentary after the presentation. Classmates will earn **1% per contribution** (each contribution should be a minimum of 3 sentences). Students can complete 3 of these for a **maximum total of 3%**.

Specific requirements for the Oral presentation are as follows:

Read the relevant chapter. Each student should present on a separate Sub-Section (set of pages) within the assigned chapter. Each student must prepare their own 8-minute presentation using slides (e.g. Power Point). Presentations should a) review 2 concepts and associated methods of assessment/measurement, contained within their assigned chapter, and then b) review and explain how a related study, from recently published journal articles (published from 2015-present), extends the topic. Finally you must c) review the conclusions and take-home message of this area of memory and suggest an extension, either in terms of a future psychology experiment OR an application of a related concept to address a real-world issue.

This presentation is worth **15% of your grade in the course**.

### Research Idea paper

Prepare a detailed written Introduction to a new Research Idea. You will be marked based on a) your communication and accuracy of the current state of knowledge relating to your topic, and b) your ability to clearly explain the relevance of past research to the rationale for your research idea. You are also required to c) highlight a possible neural or physiological basis of for your proposed memory concept/effect, based on past published research.

Introductions must be 4-pages, plus a reference page(s), double-spaced, in 12-point font, with 2 cm margins all around. **DUE August 2<sup>nd</sup> by 11:59pm via the LEARN Dropbox; worth 17% of your grade in the course.**

### Who can I see if I have questions about the course material?

See your teaching assistants during their office hours, if you have questions about material covered in the textbook or in the labs. See Dr. Fernandes, during office hours or by appointment, for questions about material covered in the lectures.

### Course Web page on LEARN

Learn is a web-based course management system that enables instructors to manage course materials and interact with students. Here, **I will post Announcements, Lecture slides, the Course Syllabus, and Lab Materials**. Log on using your Quest userid and password.

### Policy for late lab assignments, and late posters

*It is the student's responsibility to hand in late assignments, tests or papers directly to Dr. Fernandes via **email**. These will be subject to a **late penalty of -5% of the assigned grade, per day, including weekends.***

### Academic Integrity

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the [UWaterloo Academic Integrity webpage](#) and the [Arts Academic Integrity webpage](#) for more information.

**Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is

unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties check [Guidelines for the Assessment of Penalties](#).

### Concerns About a Course Policy or Decision

**Informal Stage.** We in the Psychology Department take great pride in the high quality of our program and our instructors. Though infrequent, we know that students occasionally find themselves in situations of conflict with their instructors over course policies or grade assessments. If such a conflict arises, the Associate Chair for Undergraduate Affairs (Richard Eibach) is available for consultation and to mediate a resolution between the student and instructor: Email: [reibach@uwaterloo.ca](mailto:reibach@uwaterloo.ca); Ph 519-888-4567 ext. 38790

**Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt, please be certain to contact Richard Eibach, the Associate Chair for Undergraduate Affairs who will provide further assistance; [reibach@uwaterloo.ca](mailto:reibach@uwaterloo.ca).

**Appeals:** A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

### Accommodation for Students with Disabilities

**Note for students with disabilities:** The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

### Accommodation for course requirements

**Students requesting accommodation for course requirements (assignments, midterm tests, final exams, etc.) due to illness should do the following:**

Consult the University’s [examination regulations](#) for information about procedures and policies for requesting accommodations

seek medical treatment as soon as possible

**obtain documentation of the illness** with a completed uWaterloo [Verification of Illness Form](#)

**submit that form to the instructor within 48 hours.** Students in Centre for Extended Learning (CEL) courses must submit their confirmation of the illness to CEL.

(if possible) inform the instructor by the due date for the course requirement that you will be unable to meet the deadline and that documentation will be forthcoming.

- In the case of a missed assignment deadline, midterm test, or quiz, the instructor will either:
  - waive the course component and re-weight remaining term work as he/she deems fit according to circumstances and the goals of the course, or
  - provide an extension.

- In the case of bereavement, the instructor will provide similar accommodations to those for illness. Appropriate documentation to support the request will be required.
- Students who are experiencing extenuating circumstances should also inform their academic advisors regarding their personal difficulties.
- Elective arrangements such as travel plans are not acceptable grounds for granting accommodations to course requirements per the uWaterloo Examination Regulations and Related Matters.

## Mental Health Support

All of us need a support system. The faculty and staff at University of Waterloo encourage students to seek out mental health support if they are needed.

### On Campus

- ✓ Counselling Services: [counselling.services@uwaterloo.ca](mailto:counselling.services@uwaterloo.ca) / 519-888-4567 ext. 32655
- ✓ **MATES**: one-to-one peer support program offered by the Waterloo Undergraduate Student Association (WUSA) and Counselling Services

### Off campus, 24/7

- ✓ **Good2Talk**: Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- ✓ Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-4300 ext. 6880
- ✓ **Here 24/7**: Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- ✓ **OK2BME**: set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online on the Faculty of Arts [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe app](#) to your phone to quickly access mental health support information.

## Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabe and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometres on each side of the Grand River.

For more information about the purpose of territorial acknowledgements, please see the [CAUT Guide to Acknowledging Traditional Territory](#).

## Official version of the course outline

If there is a discrepancy between the hard copy outline (i.e., if students were provided with a hard copy at the first class) and the outline posted on LEARN, the outline on LEARN will be deemed the official version. Outlines on LEARN may change as instructors develop a course, but they become final as of the first class meeting for the term.

## Course Schedule

Below is a tentative schedule of topics. Dates for coverage of topics are subject to minor adjustments.

**Students are expected to login to check for updates and announcements on LEARN, twice weekly.**

Topic	Readings and Assignments	Date
Syllabus Introduction to Memory Research Methods of studying the brain	Syllabus Examples of memory in the real world Baddeley et al., Chapter 1	May 3rd
Perceiving	Baddeley et al., Chapter 1	May 5 <sup>th</sup>
Remembering	Baddeley et al., Chapter 2	May 10 <sup>th</sup>
Kinds of memory	Baddeley et al., Chapter 3	May 12 <sup>th</sup>
Working Memory	Baddeley et al., Chapter 4	May 17 <sup>th</sup>
<b>**Working Memory</b>	Baddeley et al., Chapter 4	<b>May 19<sup>th</sup></b> <b>**lecture posted online</b>
Neuroimaging of working memory / Learning	Baddeley et al., Chapter 5	May 24 <sup>th</sup>
<b>Lab 1 - E-Prime: Introduction</b>	<b>Lab 1 Course Notes</b>	<b>May 26<sup>th</sup></b>
Learning / Organization	Baddeley et al., Chapter 6	May 31 <sup>st</sup>
Learning / Organization	Baddeley et al., Chapter 6	June 2 <sup>nd</sup>
<b>Lab 2 - E-Prime: Creating a free recall experiment</b>	<b>Lab 2 Course Notes</b>	<b>June 7<sup>th</sup></b>
<b>Lab 3 - E-Prime: Creating a recognition experiment</b>	<b>Lab 3 Course Notes</b>	<b>June 9<sup>th</sup></b>

Topic	Readings and Assignments	Date
Retrieval / Context effects	Baddeley et al., Chapter 8  <b>Mid-term review Assignment DUE by 11:59pm</b>	June 14 <sup>th</sup>
Retrieval / Context effects	Baddeley et al., Chapter 8	June 16 <sup>th</sup>
Memory, Aging, & Dementia	Baddeley et al., Chapter 15	June 21 <sup>st</sup>
<b>Mid-Term Test</b>	<b>Mid-Term Test in class</b>	<b>June 23<sup>rd</sup></b>
<b>Lab 4 - E-Prime: Making modifications to experiment</b>	<b>Lab 4 Course Notes</b>	<b>June 28<sup>th</sup></b>
<b>Lab 5 – E-Prime: Troubleshooting and debugging experiments</b>	<b>Lab 5 Course Notes (note that Lab 6 is omitted from the course)</b>	<b>June 30<sup>th</sup></b>
<b>Lab 7 – E-Prime: Create a theoretically-driven experiment &amp; collect data</b>	<b>Lab 7 Course Notes</b>	<b>July 5<sup>th</sup></b>
<b>*Lab 8 – E-Prime: Merge &amp; analyze data; making conclusions</b>  Topic 1: Neuroscience of Memory	<b>Lab 8 Course Notes</b> <b>*Lab Due Date: July 12<sup>th</sup></b>  Select a recent published article from PsychInfo/PubMed/Google Scholar	<b>July 7<sup>th</sup></b>

Topics	Readings and Assignments	Dates
<p>Topic 2: Forgetting</p> <p>Topic 3: Motivated Forgetting</p> <p>Topic 4: Autobiographical memory</p>	<p>Baddeley et al., Chapter 9</p> <p>Baddeley et al., Chapter 10</p> <p>Baddeley et al., Chapter 11</p>	<p>July 12<sup>th</sup></p>
<p>Topic 5: Eyewitness memory</p> <p>Topic 6: Prospective Memory</p> <p>Topic 7: Memory in childhood</p>	<p>Baddeley et al., Chapter 12</p> <p>Baddeley et al., Chapter 13</p> <p>Baddeley et al., Chapter 14</p>	<p>July 14<sup>th</sup></p>
<p><b>Writing Communication Centre Workshop</b></p> <p><b>**Careers in Psychology</b></p>	<p>Recorded lectures</p> <p>Course Perceptions:  <a href="https://perceptions.uwaterloo.ca/">https://perceptions.uwaterloo.ca/</a></p>	<p><b>July 19<sup>th</sup></b></p> <p><b>**lecture posted online</b></p>
<p>Topic 8: When memory fails</p> <p>Topic 9: Improving your memory</p> <p>Topic 10: Semantic memory/ Stored knowledge</p>	<p>Baddeley et al., Chapter 16</p> <p>Baddeley et al., Chapter 17</p> <p>Baddeley et al., Chapter 7</p> <p>Course Perceptions:  <a href="https://perceptions.uwaterloo.ca/">https://perceptions.uwaterloo.ca/</a></p> <p><b>Research Idea Paper</b>  <b>DUE DATE: Tuesday August 2<sup>nd</sup></b></p>	<p>July 21<sup>st</sup></p>