



## Psychology 390-003 Research in Memory Winter 2020

**Class Time:** Tuesdays & Thursdays 1pm-2:20pm  
**Location:** PAS 4032 and PAS 1237



**Instructor:** Dr. Myra Fernandes  
**Office Hours:** Tuesdays 10am-11am

[mafernan@uwaterloo.ca](mailto:mafernan@uwaterloo.ca)  
**Office:** PAS 4054

**Teaching Assistant:** Brady Roberts  
**Office Hours:** 10am-11am Wednesdays

[brady.roberts@uwaterloo.ca](mailto:brady.roberts@uwaterloo.ca)  
**Office:** PAS 4227

### Required Course Text

Baddeley, A., Eysenck, M.W., & Anderson, M.C. (2015). *Memory*. 2<sup>nd</sup> edition. New York, NY, Psychology Press

### Course Description

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

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.

### Course Structure and Requirements

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. Group projects and presentations are designed to promote discussion of relevant ideas and concepts. The poster session is designed to introduce you to how research results are communicated at scientific conferences and meetings.

### Overview of Evaluation

Lab worksheets and activities	6 X 4% and 1X 6% =	30%
Mid-term Test	<b>Tues March 3<sup>rd</sup></b>	30%
Presentation		15%
Participation in Panel Discussions	4 X 2% each =	8%
Poster Presentation	<b>Tues March 31<sup>st</sup></b>	5%
Poster Introduction write-up	Due: <b>Thurs April 2<sup>nd</sup></b>	12%

## Details on each Evaluation

### 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 activities and worksheets are to be completed during the scheduled lab time. The first 6 labs are worth 4% each, and the last one is worth 6% (**total = 30% of your grade**). A copy of the “Lab Course notes” is available at the UW Bookstore.

### 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 the relevant chapters in your course textbook. The test will be 1 hour and 20 minutes in length.

### Group Presentation

#### **Task A (completed independently)**

Read the relevant chapter. Each person must **prepare an 8-minute presentation** using slides (e.g. Power Point). The presentation should a) review the key points, and methods, presented in the assigned chapter, and then b) review and highlight 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 psychology experiments or applications to address a real-world issue. This presentation is worth **10% of your grade**. A copy of your presentation slides must be emailed to the TA and Dr. Fernandes **by 11:59pm on the day before your presentation**, so that it can be brought to class and loaded on the computer, by the instructor, prior to the beginning of class the next day.

#### **Task B (can be completed with partner)**

Following your presentation, you will each lead a **Panel Discussion for 4 minutes**. During this time you must pose 1 to 2 Thought-Provoking Questions to your classmates relating to your topic. Your classmates will attempt to answer the questions. Your job during the Panel Discussion is to a) guide students, b) bring up relevant experiments, and c) jump in with an expert’s opinion on the topic, with highlights and reference to related publication from the field. You can bring in extra materials (newspaper clippings) or prepare ‘demos’ related to your prepared Questions. These will help engage your classmates in the Panel Discussion. Your ability to lead the Panel Discussion will form **5% of your grade**.

*Tip 1:* make your “Panel Questions” provocative, to invite discussion from your classmates, or come prepared to defend your particular Answers to your Questions, if many different Answers are possible.

*Tip 2:* the class will be more fun if you find a way of engaging your fellow classmates in the Discussion (e.g. frame your questions such that students have to pick one side of a debate, and defend it, or have students provide examples from everyday life to support their answers)

### Participation in Panel Discussion

During four of the Panel Discussions (except your own), you will be expected to

**a)** participate by providing oral “Responses to Presentation Questions” to the class (worth 1% each time)

**b)** provide written feedback to the Group Presenters (worth 1% each time). Thus, you can earn up to 2% per Panel Discussion session.

Participation is worth a total of **8% of your grade**.

## Poster Assignment: Idea for Future Research

**Poster Presentation (5%):** You will prepare a scientific poster of a study that you yourself have conceived, and designed, showing hypotheses and predicted results, along with a discussion of implications. A poster is a 1-page summary of the Background, Methods, Results, and Conclusions. This is the format used to communicate research findings at scientific conferences and meetings. A poster serves as an “Executive Summary” of a study, allowing others to quickly understand the research question that was investigated, and the answers. A few sample posters, in Power Point format, can be found on the course website. You should use these as templates for your own poster.

Please print a copy of your poster on a plain white sheet of paper (8 ½ X 11), to facilitate presentation to your classmates. On MARCH 31<sup>st</sup> we will have a **POSTER DAY**, during which each person will tell classmates about their poster in a 3-minute oral presentation, and then answer any questions from the audience for 2 minutes. Please email your Poster to Dr. Fernandes **by 9am on March 31<sup>st</sup>**. Be sure to acknowledge all sources of information, and avoid plagiarism (see note below). You will be marked on the written clarity of the content of the text in your poster, your ability to link your study to the literature, the appropriateness of your graphs and/or tables, and your ability to communicate the results and their implications & contribution to the study of memory.

**Poster Introduction write-up (12%):** Prepare a detailed Introduction to your Poster Idea. You must discuss the current state of knowledge relating to your topic, explaining the relevance of past research to the rationale for your research idea. Highlight whether there is debate regarding the cognition mechanism, and include an overview of the brain basis of either past effects or your proposed cognitive effect.

Poster Introductions must be 4-pages, plus a reference page(s), double-spaced, in 12-point font, with 1 cm margins all around. **DUE Thursday April 2<sup>nd</sup>** in class.

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

See your teaching assistant, if you have questions about material covered in the textbook or in the labs. See Dr. Fernandes for questions about material covered in the lectures.

### **Course Web page / What is Desire2Learn?**

Desire2Learn is a web-based course management system that enables instructors to manage course materials and interact easily and efficiently with their students. Here, **I will post lecture notes online**, along with the course syllabus. Course announcements, and answers to Frequently Asked Questions will also be posted. Log on using your Quest/UWdir userid and password.

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

*It is the student's responsibility to hand in late assignments or posters directly to the course T.A. or instructor **in person**, or 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 final exam, the instructor and student will negotiate an extension for the final exam, which will typically be written as soon as possible, but no later than the next offering of the course.
- 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](#).

## 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.

Topic	Readings and Assignments	Date
Syllabus LEARN  Introduction to Memory Research	Syllabus  Select "Presentation" topic	Tuesday Jan 7 <sup>th</sup>
Methods of studying the brain	Baddeley et al., Chapters 1	Thursday Jan 9 <sup>th</sup>
Perceiving and Remembering	Baddeley et al., Chapter 1, 2	Tuesday Jan 14 <sup>th</sup>
Kinds of memory	Baddeley et al., Chapter 3	Thursday Jan 16 <sup>th</sup>
<b>Lab 1 - E-Prime</b>	<b>Lab 1 Course Notes</b>	<b>Tuesday Jan 21<sup>st</sup></b>
Working Memory	Baddeley et al., Chapter 4	Thursday Jan 23 <sup>rd</sup>
<b>Lab 2 - E-Prime</b>	<b>Lab 2 Course Notes</b>	<b>Tuesday Jan 28<sup>th</sup></b>
Neuroimaging of working memory / Learning	Baddeley et al., Chapter 5	Thursday Jan 30 <sup>th</sup>
<b>Lab 3 - E-Prime</b>	<b>Lab 3 Course Notes</b>	<b>Tuesday Feb 4<sup>th</sup></b>
Learning / Organization	Baddeley et al., Chapter 6	Thursday Feb 6 <sup>th</sup>
<b>Lab 4 - E-Prime</b>	<b>Lab 4 Course Notes</b>	<b>Tuesday Feb 11<sup>th</sup></b>
Retrieval / Context effects	Baddeley et al., Chapter 8	Thursday Feb 13 <sup>th</sup>

Topic	Readings and Assignments	Date
Reading Week	Reading Week - No Class	Tuesday Feb 18 <sup>th</sup>
Reading Week	Reading Week - No Class	Thursday Feb 20 <sup>th</sup>
<b>Lab 5 - E-Prime (Optional Lab 6)</b>	<b>Lab 5 Course Notes</b>	<b>Tuesday Feb 25<sup>th</sup></b>
Memory, Aging, & Dementia	Baddeley et al., Chapter 15	Thursday Feb 27 <sup>th</sup>
<b>Mid-Term</b>	<b>Mid-term</b>	<b>Tuesday March 3<sup>rd</sup></b>
Careers in Cognitive Neuroscience  Introduction to Writing Communication Centre (15 minutes)  Tips for In-Class Presentation	Preparation for In-Class Presentations  Individual Meetings	Thursday March 5 <sup>th</sup>
<b>Lab 7 – E-Prime</b>	<b>Lab 7 Course Notes</b>	<b>Tuesday March 10<sup>th</sup></b>
Topic 1: Improving your memory  Topic 2: Incidental Forgetting	Baddeley et al., Chapter 17  Baddeley et al., Chapter 9	Thursday March 12 <sup>th</sup>
<b>Lab 8 – E-Prime</b>	<b>Lab 8 Course Notes</b>	<b>Tuesday March 17<sup>th</sup></b>

Topics	Readings and Assignments	Dates
<p>Topic 3: Motivated Forgetting</p> <p>Topic 4: Autobiographical memory</p> <p>Topic 5: Eyewitness memory</p>	<p>Baddeley et al., Chapter 10</p> <p>Baddeley et al., Chapter 11</p> <p>Baddeley et al., Chapter 12</p>	<p>Thursday March 19<sup>th</sup></p>
<p>Topic 6: Prospective Memory</p> <p>Topic 7: Memory in childhood</p> <p>Topic 8: When memory fails</p>	<p>Baddeley et al., Chapter 13</p> <p>Baddeley et al., Chapter 14</p> <p>Baddeley et al., Chapter 16</p>	<p>Tuesday March 24<sup>th</sup></p>
<p>Topic 9: Semantic Memory</p> <p>Topic 10: Current Directions in memory research</p> <p><b>Writing Communication Centre Workshop (45 minutes)</b></p>	<p>Baddeley et al., Chapter 7</p> <p>Suggested journals: TICS, Nature Neuroscience, Psychological Science</p>	<p>Thursday March 26<sup>th</sup></p>
<p><b>Poster Day</b></p>	<p>Present your research proposal, results, &amp; discussion to the class!</p>	<p><b>Tuesday March 31<sup>st</sup></b></p>
<p>Hot Topics in Cognitive Neuroscience</p> <p><b>Poster Introduction Paper Due Date</b></p>	<p>Link to sample conference program on LEARN:  <i>Canadian Society for Brain Behaviour &amp; Cognitive Science, Psychonomic Society &amp; Cognitive Neuroscience Society</i></p> <p>Course Perceptions</p>	<p><b>Thursday April 2<sup>nd</sup></b></p>