



# Psychology 398 Research in Memory

## Winter 2016

**Class Time:** Mondays & Wednesdays 10:30am-12:20pm

**Location:** PAS 1237

**Instructor:** Dr. Myra Fernandes

[mafernan@uwaterloo.ca](mailto:mafernan@uwaterloo.ca)

**Office Hours:** Tuesdays 1:30-2:30pm

**Office:** PAS 4054

**Teaching Assistant:** Melissa Meade

[mmeade@uwaterloo.ca](mailto:mmeade@uwaterloo.ca)

**Office Hours:** Wednesdays 1-2pm

**Office:** PAS 4219

### 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, the variables that can be manipulated, and hopefully get you to understand just how flexible experiments can be with the right programming tools. Attendance at lectures and in labs is strongly encouraged. Group presentations are designed to promote discussion of relevant concepts. The poster session is designed to introduce you to how research results are communicated at scientific conferences and meetings.

### Overview of Evaluation

Mid-term Test	<b>Wednesday February 24th</b>	35%
Lab worksheets and activities	9 X 3% each =	27%
Group Presentation		15%
Participation in Panel Discussions		8%
<b>Poster</b>	<b>Wednesday March 30th</b>	<b>15%</b>

## Details on each Evaluation

### Mid-term Test

The test is worth **35% 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 45 minutes in length.

### Group Presentations

You will be placed in groups of 2 students. You can work together to share ideas, **but work is completed, and graded, independently**. Presentations consist of two parts:

#### Task A

Read the relevant chapter. **Each student must prepare a 15-minute presentation** using slides (e.g. Power Point). Each student will review the key points, and methods, presented in their section of the assigned chapter, and then will select 1 related study from recently published journal articles, and will highlight the conclusions and take-home message of this additional study. Also, please note real world examples of the phenomenon. This presentation will be graded, and 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

Following your group's presentations, you will lead a **Panel Discussion for 10 minutes**. During this time your group must pose 2-4 Questions to your classmates (could be 1-2 from each presenter, or "group" questions relating to the overall theme). Your classmates will attempt to answer the questions. Your job during the Panel Discussion is to guide students, bring up relevant experiments, and jump in with an expert's opinion on the topic. 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 Questions/Answers, and ability to lead the Panel Discussion will form **5% of your grade**.

*Hint 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.

*Hint 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 each 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**.

## 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, and are worth 3% each (9 labs X 3% = **27% of your grade**). A copy of the “Lab Course notes” is available at the UW Bookstore.

## Poster Assignment

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 and answers that were investigated. 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 hand in to Dr. Fernandes. On the last day of class, we will have a **POSTER DAY**, during which each person in the class will **tell us about their poster in 4 minutes**. Please email your Poster to Dr. Fernandes **by 11:59pm on March 29<sup>th</sup>** so it can be brought to class and loaded on the computer prior to the beginning of class the next day. 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 your poster text, your graphs and/or tables, and your ability to communicate the results and their implications or contribution to the study of memory (**worth 15% of your grade**).

### 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.

**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](#).

**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.

**Appeals:** A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read [Policy 72 - Student Appeals](#).

**Other sources of information for students:**

[Academic Integrity website \(Arts\)](#)

[Academic Integrity Office \(UWaterloo\)](#)

### **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.

### **Concerns About the Course or Instructor (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 Studies (Richard Eibach from July 1, 2015 through June 30, 2016) is available for consultation and to mediate a resolution between the student and instructor. Contact information:

Richard Eibach Email: [reibach@uwaterloo.ca](mailto:reibach@uwaterloo.ca); Ph 519-888-4567 ext. 38790

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. See [Policy 70](#) and [71](#) below for further details.

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

seek medical treatment as soon as possible and obtain a completed uWaterloo [Verification of Illness Form](#)

submit that form to the instructor within 48 hours.

(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:

1. 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
2. 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.

### **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.

### ***About Your Instructor***

In my research I aim to understand the processes involved in higher cognitive functions such as memory, attention and language. I use a combination of behavioural tests and neuro-imaging to identify the brain basis of these functions. In addition I study how the normal aging process affects cognition, particularly one's ability to carry out memory tasks concurrently with other tasks (dual-tasking). This work is used to test and refine current models of how memory encoding and retrieval operate.

**The following pages contain the Tentative Schedule for classes:**

Topic	Readings and Assignments	Dates
Syllabus LEARN  Introduction to Memory Research	Organize for “Group Presentations”	Monday January 4 <sup>th</sup>
Methods of studying the brain	Baddeley et al., Chapters 1, 2	Wednesday January 6 <sup>th</sup>
Perceiving and Remembering	Baddeley et al., Chapter 1	Monday January 11 <sup>th</sup>
Kinds of memory	Baddeley et al., Chapter 3	Wednesday January 13 <sup>th</sup>
Working Memory	Baddeley et al., Chapter 4	Monday January 18 <sup>th</sup>
<b>Lab 1 - Introduction to E-Prime</b>	<b>Lab 1 course notes</b>	<b>Wednesday January 20<sup>th</sup></b>
Neuroimaging of working memory / Learning	Baddeley et al., Chapter 5	Monday January 25 <sup>th</sup>
<b>Lab 2 – Sample Experiment</b>	<b>Lab 2 course notes</b>	<b>Wednesday January 27<sup>th</sup></b>
Learning / Organization	Baddeley et al., Chapter 6	Monday February 1 <sup>st</sup>
<b>Lab 3 – creating a free recall experiment</b>	<b>Lab 3 course notes</b>	<b>Wednesday February 3<sup>rd</sup></b>
Retrieval / Context effects	Baddeley et al., Chapter 8	Monday February 8 <sup>th</sup>
<b>Lab 4 – creating a recognition experiment</b>	<b>Lab 4 course notes</b>	<b>Wednesday February 10<sup>th</sup></b>

Topics	Readings and Assignments	Dates
Reading Week		Monday February 15 <sup>th</sup>
Reading Week		Wednesday February 17 <sup>th</sup>
Memory, Aging, & Dementia	Baddeley et al., Chapter 15	Monday February 22 <sup>nd</sup>
<b>Mid-Term Test</b>	<b>Mid-Term Test</b>	<b>Wednesday February 24<sup>th</sup></b>
<b>Lab 5 – making modifications to an experiment</b>	<b>Lab 5 course notes</b>	<b>Monday February 29<sup>th</sup></b>
Group 1: Semantic memory Group 2: Incidental Forgetting	Baddeley et al., Chapter 7 Baddeley et al., Chapter 9	Wednesday March 2 <sup>nd</sup>
Group 3: Motivated Forgetting Group 4: Autobiographical memory	Baddeley Chapter 10 Baddeley et al., Chapter 11	Monday March 7 <sup>th</sup>
<b>Lab 6 – fixing errors in a recall experiment</b>  <b>Lab 7 – fixing errors in a recognition experiment</b>	<b>Lab 6 course notes</b>  <b>Lab 7 course notes</b>	<b>Wednesday March 9<sup>th</sup></b>

Topics	Readings and Assignments	Dates
Group 5: Eyewitness memory Group 6: Prospective Memory	Baddeley et al., Chapter 12 Baddeley et al., Chapter 13	Monday March 14 <sup>th</sup>
Group 7: Memory in childhood Group 8: When memory fails	Baddeley et al., Chapter 14 Baddeley et al., Chapter 16	Wednesday March 16 <sup>th</sup>
Group 9: Improving your memory Group 10: Current Directions in memory research	Baddeley et al., Chapter 17 Suggested journals: TICS, Nature Neuroscience, Psychological Science	Monday March 21 <sup>st</sup>
<b>Lab 8 – run classmates through your experiment</b>	<b>Lab 8 course notes</b>	<b>Wednesday March 23<sup>rd</sup></b>
<b>Lab 9 – E-data-aid</b>	<b>Lab 9 course notes</b>	<b>Monday March 28<sup>th</sup></b>
<b>Poster Day</b>	<b>Present your research proposal, results, discussion poster to the class!</b>	<b>Wednesday March 30<sup>th</sup></b>