



Psychology 398 Research in Memory Winter 2008, section 002



Class Time: Tuesdays & Thursdays 10:30am-12:20pm

Location: PAS 1241 (lectures) PAS 1237 (labs)

Instructor: Dr. Myra Fernandes

mafernan@uwaterloo.ca

Office Hours: Thursdays 12:30-1:30pm

Office: PAS 4054

Teaching Assistant: Erin Skinner

eiskinne@watarts.uwaterloo.ca

Office Hours: Mondays 3-4 pm

Office: PAS 4236

Required Course Text

Baddeley, A. (2002). Human Memory: Theory and Practice, Revised Edition. East Sussex, UK: Psychology Press Ltd.

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, neuroimaging, 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 processes 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 you 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 memory research.

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 | Thursday Feb. 28th | 35% |
| Lab worksheets and activities | 9 X 3% each = | 27% |
| Group Presentation | | 15% |
| Participation in Panel Discussions | | 8% |
| Poster | | 15% |

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 Baddeley. The test will be 1 hour and 30 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 and prepare a 20 minute Power Point presentation (each person will present independently for 10 minutes).

Each student will review background and methods used in 1 study referenced in the assigned chapter or reading, and will highlight the conclusions and take-home message of that study. Also, please note real world examples of the phenomenon. This presentation will be graded, and is worth **12% of your grade**.

A copy of your Power Point presentation must be emailed to the TA and Instructor **by 4pm on the day before your presentation**, so that it can be brought to class by the instructor and loaded on the computer prior to the beginning of class the next day.

Task B

Following your group's presentations, you will be part of a Panel Discussion for 10 minutes. During this time your group must pose 2 Questions to your classmates (could be 1 from each presenter, or 2 "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 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 **3% 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 every day life to support their answers)

Participation in Panel Discussion

During each of the Group Presentations (except your own), you will be expected to participate in the Panel Discussion by providing some of your "Responses to Presentation Questions" to the class, and/or providing feedback to fellow classmates, and the Group Presenters. Participation is worth 8% of your grade. You can earn 1% per Panel Discussion, up to a maximum 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. **NOTE that all labs take place on the dates indicated in the syllabus (in bold), in PAS 1237.**

Poster Assignment

You will prepare a scientific poster on a published research study of your choice (from a topic on memory other than the one on which you presented). A poster is 1-page summary of the Background, Methods, Results, and Conclusions from a given study. 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 sample poster, in Power Point format, can be found on UW-ACE. You should use this sample as a template for your own poster.

Please print 25 copies of your poster on plain white sheets of paper (8 ½ X 11) for distribution to the whole class. You will be given 5 minutes to tell the class about your chosen study, and the class will be given 2 minutes for questions. 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 (**10%**), and your ability to communicate the poster to the class (**5%**).

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

See your teaching assistant, Erin, 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 UW-ACE?

UW-ACE 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 on UW-ACE. UW-ACE will also be used to post marks to the gradebook, and track student progress. You will need to log into UW-ACE to retrieve your course e-mail.

How do I log on to UW-ACE?

Type <http://www.uwace.uwaterloo.ca> and log on using your Quest/UWdir userid and password.

What should I do if I can't get logged into UW-ACE?

If you are having trouble logging in, please confirm that your QUEST/UWdir userid and password are correct. Please note that UW-ACE is case sensitive, so you must type your password with the appropriate upper and lower case letters. If you confirm that your userid and password are correct and still can not log in, please check with your instructor to ensure that you are on the class roster. If you are still encountering difficulties, please e-mail uwacehelp@ist.uwaterloo.ca stating your name, UWuserid, student ID number and the course to which you wish access.

Policy for missed test

*It is the student's responsibility to provide, in a timely manner, acceptable documentation to support a medical, compassionate, or religious claim for missing a test. Otherwise a grade of zero may be assigned for the missed test. If you feel that you have a medical or personal problem that is interfering with your work, you should contact your Instructor and the Academic Counseling Office as soon as possible. Problems may then be documented and possible arrangements to assist you can be discussed at the time of occurrence rather than on a retroactive basis. In general, retroactive requests for grade revisions on medical or compassionate grounds will not be considered. For example, in the case of illness, the student must provide an **official illness certificate on appropriate letterhead from their physician**, which states that, due to medical reasons, it was impossible for the student to write the test at the scheduled time. A note on a prescription pad is not an acceptable medical certificate.*

Once Dr. Fernandes has received appropriate documentation for missing a test, a make-up test, covering that material, will be scheduled for a time that is mutually convenient for Dr. Fernandes, the TA, and the student.

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% per day**, including weekends.*

Note for students with disabilities:

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, 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 OPD at the beginning of each academic term.

Note on avoidance of academic offences:

All students registered in the courses of the Faculty of Arts are expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. When the commission of an offence is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offences and types of penalties, students are directed to consult the summary of Policy #71 which is supplied in the Undergraduate Calendar (section 1; on the Web at www.adm.uwaterloo.ca/infosec/Policies/policy71.htm). If you need help in learning what constitutes an academic offence; how to avoid offences such as plagiarism, cheating, and double submission; how to follow appropriate rules with respect to "group work" and collaboration; or if you need clarification of aspects of the discipline policy, ask your TA and/or your course instructor for guidance (see also Arts Faculty Web page http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html). Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean. Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>.

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 UW-ACE Introduction to Memory Research & Methods of studying the brain | Organize for “Group Presentations” | Tues. Jan 8 th |
| Perceiving and Remembering | Baddeley Chapter 2 | Thurs. Jan 10 th |
| Kinds of memory | Baddeley Chapter 3 | Tuesday Jan 15 th |
| Working Memory | Baddeley Chapter 4 / 5 | Thurs. Jan 17 th |
| Lab 1 - Introduction to E-Prime | Lab 1 course notes | Tuesday Jan 22nd |
| Control and Attention in Memory | Baddeley Chapter 6 / 7 | Thurs. Jan 24 th |
| Lab 2 – Sample Experiment | Lab 2 course notes | Tuesday Jan 29th |
| Organization & Learning | Baddeley Chapter 8 | Thurs. Jan. 31 st |
| Lab 3 – creating a free recall experiment | Lab 3 course notes | Tuesday Feb. 5th |
| Retrieval | Baddeley Chapter 11 | Thurs. Feb. 7 th |
| Lab 4 – creating a recognition experiment | Lab 4 course notes | Tuesday Feb. 12th |

| Topics | Readings and Assignments | Dates |
|--|---|---|
| Memory, Aging, Dementia & Treatments | Baddeley Chapter 17 | Thurs. Feb. 14 th |
| No Class | Reading Week | Tuesday Feb. 19th Thurs. Feb. 21st |
| Lab 5 – making modifications to an experiment | Lab 5 course notes | Tuesday Feb. 26th |
| Mid-term test | Mid-term test | Thurs. Feb. 28th |
| Lab 6 – fixing errors in a recall experiment Meet with group members | Lab 6 course notes Preparation for Group presentations | Tuesday March 4th |
| Group 1 : acquiring habits Group 2 : forgetting Group 3 : autobiographical memory | Baddeley Chapter 9 Baddeley Chapter 10 Baddeley Chapter 12 | Thurs. March 6 th |
| Lab 7 – fixing errors in a recognition experiment Group 4 : semantic memory (1 presenter only) | Lab 7 course notes Baddeley Chapter 13 | Tuesday March 11th |
| Group 5 : connectionism Group 6 : emotional memory Group 7 : emotional memory (part 2) | Baddeley Chapter 14 Baddeley Chapter 15 Davidson, P., Cook, S.P., & Glisky, E. (2006). Flashbulb memories for Sept. 11 th can be preserved in older adults. <i>Aging, Neuropsychology, & Cogn.</i> , 13, 196-206 | Thurs. March 13 th |

| Topics | Readings and Assignments | Dates |
|---|--|--------------------------------------|
| Lab 8 – run classmates through your experiment | Lab 8 course notes | Tuesday March 18th |
| Group 8 : Amnesia Group 9 : Amnesia (part 2) Group 10 : consciousness | Baddeley Chapter 16 Rosenbaum, et al., (2005). The case of K.C.: Contributions of a memory-impaired person to memory theory. <i>Neuropsychologia</i> , 43, 989-1021. Baddeley Chapter 18 | Thursday March 20 th |
| Lab 9 – E-data-aid Course & Instructor Evaluation | Lab 9 course notes | Tuesday March 25th |
| Group 11 : implicit memory Group 12 : recollections Group 13 : cognitive neuroscience of memory | Baddeley Chapter 19 Baddeley Chapter 20 Cabeza, R., & St. Jacques, P. L. (2007). Functional neuroimaging of autobiographical memory. <i>Trends in Cognitive Sciences</i> , 11, 219-227 | Thurs. March 27 th |
| Poster Session #1 (13 presenters) | | Tuesday April 1 st |
| Poster Session #2 (12 presenters) | | Thurs. April 3 rd |

NOTE: If there is a discrepancy between the hard copy syllabus and the syllabus posted on UW-ACE, the syllabus on UW-ACE will be deemed the official version