



Department of Psychology
Psych 398
Learning & Memory
Tuesdays and Thursdays 10:30am - 12:20pm, PAS4032

Instructor and T.A. Information

Instructor: Dr. PAUL WEHR

Office: PAS 4037

Office Phone: 519-888-4567, x35333

Office Hours: Tuesdays & Thursdays, 10:00am - 10:30am; 12:20pm – 1:00pm

Email: pwehr@uwaterloo.ca

TA: Mike Klein

Email: mdklein@uwaterloo.ca

Office: PAS 4049

Office Hours: By appointment.

Course Description

Psychology 398 further develops students ability to consume, evaluate, discuss, and conduct empirical research in the discipline of psychology by focusing on methods, designs, and issues most commonly encountered in the subarea of learning and memory.

Course Goals and Learning Outcomes

Upon completion of this course, students should:

- A. Gain an enhanced appreciation for the role of research methods in science.
- B. Possess a comprehensive understanding of research methods applicable to the study of memory in psychology.
- C. Possess a heightened ability to read and critically evaluate research articles.
- D. Develop experience in evaluation of peers.
- E. Plan, design, and conduct basic research designs in psychology.
- F. Communicate their thoughts about research at an advanced level.
- G. Work effectively in a research group.

Background Reading

Your Psychology 291 textbook (or any textbook of research methods for the social sciences). Also, you will need to use APA formatting in this course that adheres to the *Publication Manual of the American Psychological Association* (6th ed.). Posted on LEARN is a useful reference to basics of APA formatting from the library at University of British Columbia.

Course Assessment

The central elements of this course include weekly seminars structured around a series of prescribed readings, and a group research project. The assigned readings for each week are organized around a particular topic related to memory research, which students will explore through intensive discussion in the classroom. The group project will provide students the opportunity to apply what they have learned by designing and conducting their very own research investigation. In both cases, regular, meaningful participation and groupwork is required for success.

Assessment	Date	Weight
Discussion Participant		15%
Discussion Leader		15%
Examination	July 14 th	30%
Project Report	July 23 rd	25%
Project Materials	July 23 rd	05%
Project Oral Presentation	July 16 th & 21 st	10%
Total		100%

Seminar Discussions

Seminars will take place on class dates with assigned readings. On these dates, the instructor will begin with a brief review (~10 min) of the statistics and background related to that week's article. The review will be followed by a lively and engaging group discussion, which will be student led and should focus on the article's relevance to the weekly topic, but should also critically evaluate the article in general. For each seminar, a different group of students will act as discussion LEADERS while the rest of the class will contribute as discussion PARTICIPANTS. All students should take an active role in the discussion each and every week.

DISCUSSION PARTICIPANTS: Seminar courses are meant to enhance student learning through discussion of ideas. As such, it is critical that each student participate regularly in the conversation. In order to prepare for each session, students should:

- READ the assigned article(s) carefully and summarize in writing the major ideas, issues, and conclusions.
- REFLECT on the issues raised in the assigned reading(s), and on their implications for both future research and potential application in various settings.
- PREPARE a few specific and insightful questions, observations, criticisms, endorsements, etc.

Students who read, reflect, and prepare for each session should have plenty of content to share with the class during each discussion. Furthermore, please do not bring COMPUTERS to the seminars. While computers are excellent tools for recording and using information in a lecture format, their presence disrupts the flow of the conversation. Thus, it is important to prepare WRITTEN content for seminars. Tablets and smartphones are also useful.

Students will be assessed on their participation by the instructor or the TA after each class (0 = absent; 0.5 = present but little contribution; 1.0 = meaningful contribution). There are 10 seminars during the term for which students can earn points. In addition, each student will be responsible for evaluating the discussion leaders in the form of structured peer feedback worth 0.5 mark (0 = no comments provided; 0.25 = rudimentary comments; 0.5 = meaningful comments).

DISCUSSION LEADERS: In groups of two or three, students will work together to be discussion leaders once during the term – topics to be assigned during the first week. You should meet with your group outside of class time to coordinate your content. Your written thoughts generated from READ, REFLECT, and PREPARE are a good base on which to build. This is not a presentation, although you might choose to present some information as part of your seminar. Instead, your goal is to generate discussion based on the assumption that everyone has READ, REFLECTED, and PREPARED for the seminar. Achieving success as a leader means stimulating the contributions of the other participants, not dominating the conversation yourself. You should plan to lead the conversation for about 1 hour. There are many ways to accomplish this and you are free to be creative in your efforts. To assist in your planning, we will have a brainstorming session to generate discussion ideas. Students will be assessed as discussion leaders by their peers. The instructor will then calculate a score out of 10 after removing the most and least favourable evaluations. An example of the rubric will be provided close to the beginning of the term.

Examination

The examination will be composed of three parts and be based on three assigned research articles. Part one will test students' knowledge of one article using multiple-choice questions. Part two will test students' ability to apply and evaluate research by answering one of two possible discussion questions drawn from a second article. Part three will test students' ability to lead a discussion by asking students to draft two discussion activities based on the last article. Articles will be assigned two weeks before the exam. If the exam is missed for a legitimate reason (e.g., hospitalization or kidnapping), contact the instructor as soon as possible and provide appropriate documentation to verify the absence (i.e., Verification of Illness form or Ransom Note).

Projects

Students working in teams of 3 or 4 will design, conduct, and report the results of their own psychological investigation of a topic relevant to Memory. Five workshops throughout the semester will help students complete various aspects of their research project. It is critical that students attend all of these sessions, but workshops 1 through 3 are particularly important because they consist of the group work required to develop the project and the session during which data will be collected; missing any of these workshops will prevent you from contributing to your group's project in a meaningful way. Consequently, missing any of these sessions will result in a 20% deduction (5 out of 25 marks) for EACH missed workshop. If you are unable to attend one of these workshops for a legitimate reason (e.g., severe illness or incarceration), then contact the instructor as early as possible and provide appropriate documentation to avoid the 20% deduction. However, even if excused, you remain responsible for coordinating with your group members to make up for lost time.

PROJECT REPORTS: The most important step in the scientific endeavour is to communicate one's findings to other scientists in a peer reviewed research journal. This not only allows others to learn about what you did and what you found, but to critically evaluate your research before it is published. Consequently, students will submit an eight-page scientific report in APA format, which will document and discuss their learning experience. Although students will work in groups and share data, and are encouraged to consult with one another and to proof read each other's work, each student will submit his or her own original report, which will be worth 25% of their final grade. A hard copy of the report is due at the beginning of the last day of class on July 23rd and an identical copy must be submitted online to TurnItIn. Details on how to do this will be given later in the semester.

PROJECT MATERIALS: This component should be submitted with your individual reports at the beginning of class on July 23rd. Each group will submit ONE collection of all experimental materials used. One clean (unused) copy of each material used in the project should be placed in a report cover. In this package you would include things like a consent form, debriefing form, demographics questionnaire, examples of stimuli, and any other materials used. In addition, include a title page in APA format identifying the group name and all of its members, and ALL COPIES OF ALL DATA collected. You do not need to submit this component to TurnItIn.

PROJECT PRESENTATION: Each group will give a 20 minute presentation (plus 5 to 10 minutes for questions) on either July 16th or July 21st. The Exact date of your presentation will be determined later in the term. You should use PowerPoint or another presentation software and all members of the group must speak. Your presentation should review theoretical background, identify the research question, explain the methods utilized, report the results of your study, and discuss weaknesses and limitations of the project. Presentations will be assessed by your peers, who will rate your effort out of 10 using a rubric provided by the instructor. Your grade will reflect the average of the peer assessments after the highest and lowest scores are removed.

Information Available on LEARN

The course web page can be found on LEARN (<https://learn.uwaterloo.ca/>). Here, you will find links to the syllabus, copies of assigned readings that cannot be accessed through PsychInfo, important announcements, and other resources.

Withdrawal Dates

Withdrawal deadline and receive no penalty: **May 22nd**, 2015

Withdrawal deadline to receive "WD" on transcript: **July 20th**, 2015

Withdrawal deadline to receive "WF" on transcript: **Aug 9th**, 2015

Accommodation for Students with Disabilities

The AccessAbility Services office, 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 AS office at the beginning of each academic term.

<https://uwaterloo.ca/disability-services/>

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 Affairs (Dr. Myra Fernandes) is available for consultation and to mediate a resolution between the student and instructor. Dr. Fernandes' contact information is as follows: Email: mafernan@uwaterloo.ca, Phone: 519-888-4567, x32142. 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.

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.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>

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 Polic 70 – Student Petitions and Grievances, Section 4.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>

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.

<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72>

Other sources of information for students

Academic Integrity (Arts): <https://uwaterloo.ca/arts/ethical-behavior>

Academic Integrity Office (uWaterloo): <https://uwaterloo.ca/academic-integrity/>

Term Schedule

Week	Date	Topics
1	May 05 May 07	Course Overview and Review Icebreaker, course syllabus, discussion leader assignment, and review of research designs. Review of memory.
2	May 12 May 14	Theory, Constructs, and Hypothesis Generation Workshop 1. a) Bower, G. H. (2000). A brief history of memory research. In E. Tulving and F. I. M. Craik (Eds.), <i>The Oxford handbook of memory</i> (pp. 3 – 32), New York: Oxford University Press. b) Lockhart, R. S. (2000). Methods of memory research. In E. Tulving and F. I. M. Craik (Eds.), <i>The Oxford handbook of memory</i> (pp. 45 – 57), New York: Oxford University Press.

Week	Date	Topics
3	May 19 May 21	Research Methods in Memory a) Hintzman, D. (2011). Research strategy in the study of memory: Fads, fallacies, and the search for the “Coordinates of Truth”. <i>Perspectives in Psychological Science</i> , 6, 253 – 271. Library Orientation (Lib 239).
4	May 26 May 28	Primate Memory & Evolution a) Inoue, S., & Matsuzawa, T. (2007). Working memory of numerals in chimpanzees. <i>Current Biology</i> , 17, R1004 – R1005. b) Silberberg, A., & Kearns, D. (2009). Memory for the order of briefly presented numerals in humans as a function of practice. <i>Animal Cognition</i> , 12, 405 – 407. c) Cook, P., & Wilson, M. (2010). Do young chimpanzees have extraordinary working memory? <i>Psychonomic Bulletin & Review</i> , 17, 599 – 600. d) Nairne, J. S., Thompson, S. R., & Pandeirada, J. N. S. (2007). Adaptive memory: Survival processing enhances retention. <i>Learning, Memory, and Cognition</i> , 33, 263 – 273.
5	June 02 June 04	Sensory Memory a) Schab, F. R. (1990). Odors and remembrance of things past. <i>Journal of Experimental Psychology: Learning, Memory, & Cognition</i> , 16, 648 – 655. Workshop 2: Project Proposals
6	June 09 June 11	Working Memory a) Cowan, N., Chen, Z., & Rouder, J. N. (2004). Constant capacity in an immediate serial-recall task: A logical sequel to Miller (1956). <i>Psychological Science</i> , 15, 634 – 640. b) Allen, R. J., Baddeley, A. D., & Hitch, G. J. (2014). Evidence for two attentional components in visual working memory. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i> , 40, 1499 – 1509.
7	June 16 June 18	Implicit Memory a) Rajaram, S., & Roediger, H. L. (1993). Direct comparison of four implicit memory tests. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i> , 19, 765 – 776. b) Mitchell, D. B. (2006). Nonconscious priming after 17 years. Invulnerable implicit memory? <i>Psychological Science</i> , 17, 925 – 929. Workshop 3: Data Collection

8	<p>June 23</p> <p>June 25</p>	<p>Semantic Memory and Testing.</p> <p>Workshop 4: Data Analysis</p> <p>a) Roediger, H. L., & Karpicke, J. (2006). Test-enhanced learning: Taking memory tests improve long term retention. <i>Psychological Science, 17</i>, 249 – 255.</p> <p>b) Wooldridge, C. L., Bugg, J. M., McDaniel, M. A., & Liu, Y. (2014). The testing effect with authentic educational materials: A cautionary note. <i>Journal of Applied Research in Memory and Cognition, 3</i>, 214 – 221.</p>
9	<p>June 30</p> <p>July 02</p>	<p>Episodic Memory and Eyewitness Testimony.</p> <p>a) Loftus, E. F. (1975). Leading questions and the eyewitness report. <i>Cognitive Psychology, 7</i>, 560 – 572.</p> <p>b) Loftus, E. F. (2013). 25 years of eyewitness science...finally pays off. <i>Perspectives on Psychological Science, 8</i>, 556 – 557.</p> <p>c) Garven, S., Wood, J. M., Malpass, R. S., & Shaw III, J. S. (1998). More than suggestion: The effect of interviewing techniques from the McMartin Preschool case. <i>Journal of Applied Psychology, 83</i>, 347 – 359.</p>
10	<p>July 07</p> <p>July 09</p>	<p>Exceptional Memory</p> <p>a) Radvansky, G. A., Gibson, B. S., & McNeerney, M. W. (2011). Synesthesia and memory: Color congruency, von Restorff, and false memory effects. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition, 37</i>, 219 – 229.</p> <p>Workshop 5: Scientific Writing and APA Formatting</p>
11	<p>July 14</p> <p>July 16</p>	<p>Presentations & Assessment</p> <p>Examination</p> <p>Project Presentations</p>
12	<p>July 21</p> <p>July 23</p>	<p>Project Presentations</p> <p>Project Reports Due</p>