Psychology 332: Cognition & Learning

Location: Science Hall 208  
Loras College: T/TH 2:00 - 3:20

Psychology Program:  
Fall 2018

Instructor: Jake Kurczek, PhD  
Assistant Professor of Neuroscience and Psychology
Office: Henn 193  
Phone: 588-7045  
E-mail: jake.kurczek@loras.edu  
Office Hours: By appointment

Textbook: None  
Additional journal articles and materials will be assigned as needed and posted to the course website

Class Website: You will be able to find PDFs of the lectures and discussions posted to the course website

Course Goals and Overview
An overview of how people learn, acquire and use knowledge. Course examines mental processes to include: learning, memory, and cognition.
Prerequisites: L.PSY-101. Recommended: L.PSY-211/L.PSY-212/L.PSY-331

Course Objectives
Students completing this course will be able to:

● Explain current theories on attention, perception, memory, problem solving, decision making and language comprehension and production within a cognitive psychology framework.
● Apply cognitive psychology terms, elements, or principles to everyday mental and behavioral activities
● Describe research findings in cognitive psychology and relate those findings to everyday experiences with attention, perception, memory, problem solving, decision making or language comprehension and production.
● Given a brief description of an experiment, you will be able to recognize which everyday experience is informed by that experiment’s results and recognize major contributions of that experiment to our current understanding of cognitive psychology.
• Given a cognitive psychology principle and an experiment on that principle, you will be able to correctly recognize what sort of results you would expect to find from the experiment.

Learning Outcomes
Students who take this course should be able to:
1. Demonstrate familiarity with the major concepts, theories, related to cognition & learning
2. Apply these principles to their own experiences and career goals
3. Explain and discuss ideas and issues from the course civilly with other students
4. Use critical thinking to synthesize acquired information creating new ideas or conclusions.
5. Demonstrate standard writing.

Course Requirements, Policies and Assignments

SEE ASSIGNMENT DETAILS and COURSE INFORMATION for documentation
Course information and assignment details are found in the Syllabi Appendices on the Course Onboarding document called Course Information and Assignment Details (with Assignment Rubrics).

Assignments
Applied Memory/Cognition 15
Applied Memory Presentation 2
Research Report 17
IRB 5
Pre-registration 5
Presentation 2
Cog Lab 6
Cog Lab Presentation 4
Public Explainer 10
News Update 2
Exam 1 12
Exam 2 8
Reflection 2
Engagement 10

Total 100

Research project. You are required to design a cognitive psychology/neuroscience experiment, as well as discuss the relevant experimental literature and provide a rationale for your experiment. It is so much more fun (and challenging) to learn by doing rather than seeing or hearing. The purpose of this project is for you to see first-hand how psychology research is conducted. This project allows you to get creative and apply the course material to new
situations. In groups of 3-4 students, you will design and conduct a memory study. You will then write an APA style research report summarizing your findings. During the final exam time, all groups will present the results of their research study.

1. **Research Proposal.** You will conduct a literature search on a cognitive psychology topic of interest to you and generate a possible testable hypothesis that is built on prior literature. As a group, you will first complete the group contract to lay out your roles at the beginning of the semester. You will then write an IRB proposal for your project. The IRB research proposal includes a clear statement of the research problem or question, a review of prior literature and integration of research findings, plus a presentation of your hypothesis, which should be an important next step in solving the research problem or question. You will complete a draft version in advance of the deadline to allow plenty of time for feedback and improvement before final submission.

2. **Study Design, Data Collection, & Analysis.** With your group, you will design your own between-subjects experiment, including choosing what materials you will use, and then collect and analyze your data. Before collecting data as a group you will submit a pre-registration that lays out all of your plans before collecting data.

3. **Public Explainer.** The public explainer is a digital and publically understandable presentation of your research topic. This could take the form of an infographic, or some other digital medium that takes your complex topic and makes it easily understandable and entertaining.

4. **Final Paper.** This final research paper will be the result of your semester’s lab work and a demonstration of your ability to apply research methods to real psychological data production. The final paper will include a finalized form of your Introduction (i.e., Research Proposal), Methods (Participants, Procedure, Measures or Materials), Results (including Analysis Approach and appropriate tables and figures), Discussion (including Limitations, Implications, Future Directions), and appropriate APA title page, abstract, in-text citations, reference list, etc. The Introduction should be between 600 and 800 words. The Methods section tells the reader what materials are required for the experiment and what exactly will happen to the participants. This section should be as long as necessary to thoroughly describe the materials and procedure of the experiment.

5. **Group Research Poster.** As a group, you will design and present a scientific poster based on your research project as are commonly presented at psychology research conferences. Poster presentations will occur the last week of classes.

**Applied Memory.** Students are asked to engaged in one of three experiential projects.

**Option 1: Learning Scientists**
Implement and document your attempts to incorporate better learning and memory strategies into your studies for your classes. The learning scientists are cognitive scientists who are interested in research on education. On their website they provide a number of resources that can help you better study and learn. This meta-analysis is a good starting place for popular study strategies and connecting their use to assessments of effectiveness.
1) Start by writing a 2 page reflection on your current study techniques and success (or failure)

2) Keep a weekly journal that describes and analyzes your learning and learning process. You can analyze your learning by tracking your memory performance and finding one paper on learning/memory per week and analyzing your experience through the lens of the findings of the paper.

3) Write a medium.com article (minimum 6 minute read - not including references) that summarizes your progress and situates your learning and experience in the learning literature.

**Option 2: Memory Champion**

While the learning scientists present useful memory and learning strategies, it might be more fun to be able to display your memory prowess using the memory techniques of memory champions.

1) Test your memory ability (either, numbers, playing cards, words, names and faces) at the beginning of the semester. Writing a 2 page reflection on your abilities.

2) Keep a weekly journal that describes and analyzes your memory and learning process. You can find help here, here, and here. You should track your progress numerically and statistically.

3) Write a medium.com article (minimum 6 minute read - not including references) that summarizes your progress and situates your progress and experience in the memory sports/champions literature. You also need to include graphs/summaries of your memory progress.

**Option 3: Memory Teacher**

Apply your understanding of memory to design better ways to help others memorize. Are you a member of a theater group? How do actors memorize parts? Is it the most efficient approach? Are you a member of a sports team that has to learn plays? Is it the most efficient approach?

1) Identify the strengths and weaknesses (based on the literature) of current practices for an area where learning and memorizing is important. Discuss those in a 3 page paper.

2) Develop an evidence-based intervention that is a more efficient way to memorize

3) Write up your intervention that situates and contrasts it to standard practice in a medium.com article (minimum 6 minute read - not including references)

**Option x: Roommate Study (unavailable)**

Naturalistic study of episodic memory is often difficult. Laboratory based studies of memory and learning generally rely on contrived forms of learning. Thompson (1982) attempted a naturalistic for unique personal events in “the roommate study”. You are asked to participate in a replication.

1) You are asked to complete a pre-survey of your episodic/declarative memory
2) 4 days per week (3 weekdays and 1 weekend day), you are asked to record two events each day, for both yourself and your close other (total of 4 events)
   a) These events should be a shared experience with your target participant
   b) These events should be unique (i.e., they should occur no more than once during the semester)
   c) The events should not be embarrassing
   d) They should be written in three sentences or less
   e) At the time the event is recorded you should rate using the different scales

3) 3 weeks before the end of the semester fill-out the SIME

4) 2 weeks before the end of the semester participate in a memory study for both yourself and your close other

**Applied Memory Presentation.** Psychology conferences typically host symposium sessions, in which researchers construct talks to present their research findings from a recent study or studies. The last few days of class will consist of an academic symposium. During the session, each student will present their applied memory experience that they have developed over the course of the semester. This also includes a five minute presentation overview completed in powerpoint/google slides.

**Cog Lab.** A fundamental aspect of cognitive psychology is research. Across the semester you are asked to participate in 12 online cognitive psychology experiments. On the checklist you’ll see the latest day that you can turn in your 1) results and 2) a one page (max) reflection (what does your performance mean, what did you learn, what questions do you have now). You can keep the labs together in one document that you continue to upload.

**Cog Lab Presentation.** In your research group you will be summarize and present the class data from one of our cog labs. In your presentation you should give a brief overview of the test and its purpose, present the data and give an interpretation.

**Reflection Paper.** Students are asked to write a 3 page, double-spaced reflection paper.

**News Updates.** Students will be asked to give a news update on a topic of their choice across the semester.

**Engagement**

- In-Class Participation/Activities/Questions/Discussion/Critical Thinking Journal
- Out of class engagement/Questions/Answers

**Exams.** There will be two exams. The exam questions may include the following question formats: multiple--choice; fill--in--the--blank; matching; true/false; and short-answer sections. For the second exam, exam questions will be generated by the class. Students are asked to generate 3 multiple choice and 1 short answer question (each) for 7 of the 10 topics between the first exam and the second exam. These questions should be submitted to the Exam 2
dropbox by Sunday at 9:00PM at the end of each week of the lectures. For example questions for memory and knowledge (10/16) and memory and morality (10/18) are due by 10/21 at 9:00PM.

Schedule

Important Dates
8/27 – First day of classes
9/3 – Labor Day
9/14 - Last day to drop classes without “W”
10/12-10/14 - Homecoming
10/22-10/23 – Fall Free Days
11/4 - Daylight Savings Ends
11/21-11/23 – Thanksgiving
12/7 – Last Day of Class
12/10-12/13 – Final Exams

View the checklist at this link and track your semester.
*Tentative schedule subject to change without notice as instructor deems necessary