COGNITIVE SCIENCE SEMINAR
Models of Human Learning

(COMP/PHIL/PSYC 7514/8514) Spring 2019

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<th>Professor</th>
<th>Dr. Philip I Pavlik Jr. (Phil)</th>
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<td>Office</td>
<td>434 Psychology</td>
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<td>Phone</td>
<td>901-678-2326</td>
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<td>Office hours</td>
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<td>Classroom</td>
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<td>Time</td>
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Description
The class will focus on the variety of ways researchers in various fields are creating models of human learning and performance across a variety of task situations. Guest speakers will come from several subfields with the assumption being that the complexity of human learning is such that it needs examination from multiple viewpoint including cognitive, neurobiological, perceptual, and behavioral approaches. The seminar will explore computational/mathematical models of learning, physiological models of learning, and theoretical models of learning.

The public portion of the seminar takes place on Wednesdays at 4pm in FIT 405. Faculty and students who would like to meet with external speakers before or after the seminar are encouraged to contact me.

Objectives
To learn about the many approaches to learning. To learn some formal models of learning and transfer. To apply this background to the production of a paper. To engage deeply with the readings through reflection assignments

Methods and Activities
• Reading assignments completed before class
• Prepare reading review before class
• Class lecture and discussions
• Self-directed paper

Materials
Readings will come from journal articles and chapters aligned with the course schedule below. Readings will be distributed here:
Full URL: https://umdrive.memphis.edu/ppavlik/Cog_Sci_Seminar
Intellilink URL: https://umdrive.memphis.edu/xythoswfs/webview/_xy-10971716_docstore1

Grading
Grades are assigned based on a 90-100 A, 80-90 B, and 70-80 C, etc. scale.

Attendance (10%) Since class participation is a significant portion of your grade, serious tardiness and missing classes will negatively impact your grade without appropriate excuse.

Reading reviews (30%) (For each class except the first you will create a one-page single spaced reading report that summarizes the main points of the articles and then gives a critical review of the claims made by the authors. While this writing has some rhetorical aspect, all arguments must be based critical review of the methods, theory and procedures used by the writers. The one-page can include questions for the class or for the instructor.

Research Paper (60%) You must submit a final paper in APA format (or another standard) suitable for conference publication. The paper must report your independent work involving transfer of meaning. Papers should be 10-15 pages long. However, within these constraints there are three options.

Theoretical papers are acceptable. These papers must contribute some original insight into learning by reviewing the literature. There tend to be two basic approaches, analysis and synthesis, which work together in such a paper. Analysis (a high level form of discrimination) breaks up the domain of investigation to better understand how the components interact to create the system. Synthesis (a high level form of generalization) looks to compare and connect different approaches to create a more tenable whole understanding.

Modeling papers that use an existing toolbox or programming language and report independent computational work. Many toolboxes exist that provide an environment for creating new cognitive models, and these can simplify the process for students with less programming background. However, the model described in the paper can not be a “demo” from the toolbox, nor can it be a minor modification of a demo. The model created must be an independently created model, using the toolbox’s primitives. Hint: don’t think you can do this at the last minute using a toolbox, because any toolbox will take you a month to learn how to use.
Experimental papers using a dataset approved at the time of paper proposal to produce a report about actual experimental results dealing with learning. Such papers begin with a literature review, transition into a hypothesis, describe methods and results, and finally summarize with the deep implications of the experimental analysis.

All papers must include a literature review that describes previous work in that area and motivates the question addressed by the paper. Prior to beginning work, contact the instructor with your paper idea and which of the 3 categories you believe it fits into. The instructor will either accept, reject, or modify your proposal. If you turn in a paper without the instructor’s acceptance of your idea and length, your paper may not be acceptable. Unacceptable papers will receive little or no credit, resulting in a low grade for the course. On the last session of class, we will have a roundtable discussion/presentation of topics. You will be expected to give a brief 5-10 minute description of your paper in one of these classes. Your paper is due in hardcopy on the final day of class. Please also email the file to the instructor.

Papers will be graded by this rubric
10% coherence and clarity of argument structure
15% use of written English
25% Standardized format paper
25% technical validity and appropriateness
25% Final presentation

Course Format
The format will be a blend of class discussion based on the assigned readings, lecture, and demonstrations of computational models. Student participation in class discussion and student preparation of questions for class discussion are key features of the format. You should try to come to class with something clever to say about the readings.

Attendance
Since class participation is a significant portion of your grade, tardiness and missing classes will negatively impact your grade.

Make-up Policy
Work is expected to be turned in on time unless arrangements have been made prior to the due date. Reduced credit will be given for late work (2.5% per day penalty unless otherwise stated). Please plan ahead and arrange to be present for all classes (listed on course schedule, attached). Extensions are given only with prior permission of instructor.

Course Announcements
Course announcements as well as consultation with the instructor may occur via e-mail messages. Each student must maintain an e-mail account and is responsible for checking for course messages daily. Students are also responsible for notifying the instructor if their e-mail
address changes during the term. The University of Memphis offers free e-mail services to students. Students without an e-mail account can bring their university ID cards, swipe them, and set up an account at the Smith or McWherter computer labs or students can bring their cards to the information technology helpdesk, room 124 in Administration Building for assistance.

Getting Help
If you have any difficulties during the course, let me know immediately. See me during office hours or contact me by email. It is important to notify me as soon as possible if you think you are losing track. Keep in mind: not asking questions is always worse than asking questions you think are silly (instead, often those questions turn out to be challenging!).

Office Hours
Office hours are the perfect opportunity to discuss teaching and research issues. Do you want to have more information on a certain topic? Do you have difficulties finding a research question or writing a paper? Do you feel uncomfortable about assignments? Are you looking for work in a research lab? Do you have suggestions or comments? See me during office hours or send me an email.

Course Schedule


30 JAN, WED  2:30 – 5:30pm  Cog Sci Seminar Spring 2019 – Huette - “Are connectionist models and embodiment compatible?”


13 FEB, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Simon - “Reward prediction error signals in the brain”


20 FEB, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Landy

27 FEB, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Nokes


13 MAR, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 -- Eglington

20 MAR, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Mozer - “Boosting inductive learning of visual concepts”

27 MAR, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Braasch


10 APR, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Ritter

17 APR, WED 2:30 – 5:30pm Cog Sci Seminar Spring 2019 – Olney


Academic Integrity and Responsibility

Students are expected to observe the regulations and policies that govern the behavior of students as members of the academic community. These regulations and policies are published on the website of the Office of Student Judicial and Ethical Affairs (see http://saweb.memphis.edu/judicialaffairs also see http://www.memphis.edu/studentconduct/pdfs/csrr.pdf). In this course, students are encouraged to complete their assignments without the assistance of other students—under the assumption that they will learn the course material better if they do not rely on others—but collaboration is not expressly forbidden. While taking quizzes and examinations, however, students may not seek assistance from nor give assistance to other students. Violators of this prohibition will fail the course and will be referred to the university’s Academic Discipline Committee with a recommendation that they be terminated from the university. At the instructor’s discretion, a student might be penalized points equal to 1 (or more) letter grades on the particular exam if the cheating appears unpremeditated. Repeat violation and premeditated cheating will always reported to the chair of the department or the University’s Office of Student Conduct and the Academic Integrity Committee. Consistent with these regulations and policies, students are expected to behave in accordance with the American Psychological Association Code of Ethical Conduct, found here: http://www.apa.org/ethics/code/principles.pdf.

Your written work may be submitted to Turnitin.com, or a similar electronic detection method, for an evaluation of the originality of your ideas and proper use and attribution of sources. As part of this process, you may be required to submit electronic as well as hard copies of your written work, or be given other instructions to follow. By taking this course, you agree that all assignments may undergo this review process and that the assignment may be included as a source document in Turnitin.com’s restricted access database solely for the purpose of detecting plagiarism in such documents. Any assignment not submitted according to the procedures given by the instructor may be penalized or may not be accepted at all.

Disability

If you have a disability that interferes with completion of any coursework, please let the instructor know privately at the beginning of the course, and s/he will determine how best to adapt course materials or instruction. Students with disabilities should contact Disability Resources for Students (DRS), 110 Wilder Tower, 678-2880. DRS offers a comprehensive program of services and academic accommodations designed to provide access and opportunity to students with disabilities. The instructor will work with you and DRS to determine how best to adapt course materials or instruction.

Email

Course announcements as well as consultation with the instructor may occur via e-mail. You are required to activate your university e-mail account in order to be a student at the University. The University considers this account to be your official university e-mail address and will use it to disseminate information. You must either check your university e-mail account regularly or forward your university e-mail to a personal e-mail account that you will check regularly. After you
have established your university e-mail account, you can use IAM, the University’s identity management service, to forward your university e-mail to a personal e-mail account.

**Conduct**

Students are expected to behave in accordance with the university’s Code of Student Rights and Responsibilities, found here: http://www.memphis.edu/saos/pdfs/csrr.pdf. Disruptive behavior, use of an electronic or other noise- or light-emitting device that disturbs others, and excessive use of electronic devices for text messaging, telephone, or video-based conversations during instructional time in the classroom will not be tolerated. Students engaging in disruptive behaviors or general conduct that violates the rules and regulations of the university may be removed or excluded from the classroom. The instructor may report classroom misconduct to the Department Chair or the University’s Office of Student Accountability, Outreach, and Support.

**Diversity**

The University of Memphis Department of Psychology seeks to understand and address issues of culture, disability, ethnicity, gender, generation, sexual orientation, national origin, privilege, race, and different views on religion in education, policy, research, practice, recruitment, and retention of diverse populations. In this, it strives to offer resources that promote goals of cultural humility, mutual respect, and social justice at the level of the department, university, and broader community. The Department of Psychology endorses the American Psychological Association’s policies and recommendations regarding these diversity issues, as evident in the following sources:

- Office of Ethnic Minority Affairs at http://www.apa.org/pi/oema/

If you feel that you have experienced discrimination based on culture, disability, ethnicity, gender, generation, sexual orientation, national origin, privilege, race, and different views on religion, please contact the Office for Institutional Equity at the Administration Building, Room 156 (901-678-2713). To make a report, you may fill out an online form at http://www.memphis.edu/report.

**Misconduct Reporting**

All faculty, administrators, and most University staff are mandatory reporters. According to the University’s Title IX policy and federal law, I must to report potential incidents of sexual misconduct (harassment, assault, dating violence, domestic violence, and stalking) to the Office for Institutional Equity. If you tell me about (or if I become aware of) sexual misconduct, I will reach out to Office for Institutional Equity for assistance. For more information, contact the Office for Institutional Equity located in the Administration Building, Room 156 (901-678-2713). To make a report of sexual misconduct, you may fill out an online form at http://www.memphis.edu/report. To read the University’s Sexual Misconduct policy, follow this link: https://memphis.policetech.com/dotNet/documents/?docid=465&public=true.

**Mental and Physical Health**

As a student, you may experience a range of issues that can cause barriers to learning, such as physical health problems, strained relationships, increased anxiety, alcohol and drug problems,
feeling down, difficulty concentrating, and lack of motivation. These mental and physical health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. The University of Memphis has a range of confidential mental and physical health services available on campus to assist you, including the Psychological Services Center in the Psychology Building, Room 126 (901-678-2147); The University Counseling Center at 214 Wilder Tower (901-678-2068); and The University Student Health Center at 200 Hudson Health Center (901-678-2287).