1 Instructor

Instructor: Dr. Timothy J. Pleskac

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Office Hours: Th 1:50 - 4:40 PM, or by appointment

2 Course Resources

Course Website: Angel. All class materials, including this syllabus, will be posted there. Please use ANGEL to upload your lab reports and final projects.

3 Course Description & Goals

Often when a student of psychology must decide which of two papers to read they enact a simple decision rule: Read the paper with less equations. This seminar will give you the opportunity to better understand those neglected equation ridden papers. Examples of theories and mathematical models we will explore include, but are not limited to, signal detection theory, multinomial process trees, ACT-R, sequential sampling models, connectionist/neural network models, models of similarity, algebraic choice models, and many more. Although we will refer to ideas of algebra and probability, the focus of the class is to better understand the theories and concepts that these models instantiate. To that end, we will also repeatedly address questions such as: (1) What is a theory, and what is the difference between a theory and a model? (2) What are auxiliary and primary assumptions of a model? and (3) What is a competing hypothesis approach to science?

4 Prerequisites

In day to day activities, I will assume that you have a background equivalent to

1. Mastery of the content of a graduate statistics and experimental design course.

2. Comfort with advanced topics in algebra and basic principles of probability theory. If you feel uncomfortable with these topics and wish to take the course please see me.

3. Either an undergraduate course in cognitive psychology or serious experience with cognitive issues in another discipline, such as neuroscience, animal behavior and cognition, artificial intelligence, linguistics, philosophy of mind, cultural anthropology, behavioral accounting, or education.
If you do not have this particular necessary background, I recommend that you drop the course, acquire the prerequisite background, and take the course another time. I like to have a wide range of backgrounds among the students. However, a student who has an otherwise interesting background but no understanding of cognitive science will not be able to apply his or her background in an effective way and will always be trying to catch up on the fundamentals that I'm taking for granted.

5 Grading

Weekly Assignments 20% For each class, you will write one or more evaluative questions or comments (evaluations) about each article to be presented that day. If you are presenting article(s) that day, your evaluations should be integrated into your presentation.

Class Participation 25% Everybody will be expected to come to class having read the relevant research articles and being prepared to participate in class. Students are expected to participate energetically in all class activities. Don’t sit there like a lump it’s boring! Reading assignments are listed in the course schedule below. Complete each reading assignment before the date for which it is listed. It is absolutely imperative that you keep current in your reading (better yet, keep ahead read early, read often).

Discussion Leader 25% Each student will lead 2 sessions during the semester. They will be responsible for the assigned readings. They will also be responsible for finding one recent article on the topic of the day, ideally an application of a cognitive model in empirical paper. They should start with an overview of the research area under consideration. Then provide a brief summary of the target article under the assumption that everyone has read the article. Finally, develop a list of discussion questions, and plan on spending the remaining time on the discussion.

Final Project 30% Each of you will develop a proposal for research that will use or test a cognitive model with empirical data. Each of you will present your proposal to the class, and afterwards submit a 10-15 page APA-format paper to me for grading.

6 Note to Disabled Students

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

7 Academic Misconduct

Honesty is a fundamental precept in all academic activities and those privileged to be members of a university community have a special obligation to observe the highest standards of honesty and a right to expect the same standards of others. Academic misconduct in any form is inimical to the purposes and functions of the university and therefore is unacceptable and rigorously proscribed. If you have questions about what constitutes academic misconduct, contact me.
# Class Schedule

Readings may be adjusted or changed based on the progress of the class.

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<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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References


