Cognitive Psychology
Psy 333

Fall 2022

Office Hours:
M: 1:30-2:30 pm
W: 1:30-2:30 am
R: 8-9 am
Others by appointment

Class: SCC 108: MWF 2:40-3:50 AM
Lab: SCC 148: T 9:00-11:45 AM
Text: *Cognitive Psychology: In and Out of the Laboratory, 6th Ed., Kathleen Galotti*

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Definition of Cognitive Psychology

What is this course that you are embarking upon? What is cognition? In the most basic terms cognition is the action of the brain or mind to understand the world around us and to determine an appropriate action. To unpack that bare bones definition, there are many activities that are required. For example, you need to perceive the world around you, remember past events to compare present events to, select the important parts of the world to attend to, store what has been learned from the current experience for later use, understand and transmit language, etc.

Objectives

LEARNING GOALS/ OBJECTIVES / OUTCOMES	**Course Level**	My primary goal for this course is to develop your ability to think soundly and well using the material of cognitive psychology. As part of this goal you will need to comprehend the substance and methods of cognitive psychology.	**Assessment /Artifact**	Exam, class discussion, data collection and analysis in class
	Major Level	In the context of this major, this course is an upper level lab-based course. As such the department has specified some goals for you. First,	**Assessment /Artifact**	Self-designed research project with paper and presentation

		the department wants to develop a more independent level of thinking as you progress through the major. Thus, there will be less structure to the course and you will be given some responsibility for assignments. As part of this goal, you will also be asked to develop your own cognitive theory. Second, the department wants to have you prepared more for an independent research project which forms the senior capstone experience. Thus, you will be asked to design and implement a small research project to present at the end of the semester.		

Attitude Toward Text

I want you to consider the textbook not so much as a document as to the current nature of cognitive psychology, which is its attempt, but as a theory of cognitive psychology, which is what it is. The author tries to present several theories about cognitive psychology but definitely has an overall sense of how cognition works that guides his presentation. It would be dishonest to do otherwise, to present a theory or idea that he believes is demonstrably false just for the sake of balance. So as you read, read with your critical mind awake critiquing the ideas and using the evidence you have at hand to determine what you think is correct. A truism in science is that most major discoveries are made by those new in the field that have unjaundiced eyes. Thus your inexperience may be a great benefit is seeing what those more experienced may miss or misunderstand. In addition, wherever possible you will be given as set of studies to do (the data are due by 3:00 pm on the Friday before they are discussed). We will use the data from our class as a jumping off point for discussion.

Office Hours

Office hours are the great underutilized resource of the college experience. Looking back over his many years advising students, Richard Light (a Harvard professor) said that the greatest advice that he ever gave to his students was this: Every semester, get to know one faculty member. Please stop by to chat about the course, your plans for the future, or the mysteries of the universe. Talking with students is one of my favorite parts of this job.

Expectations

- Attend Class.
- Hand assignments in on time.
    - All data for the class are due on the Class moodle site by the Friday at 3:00 pm before they will be discussed in class.
- Participate in laboratories.
- Participate in class
- Leave opinions in your rooms and bring evidence to bear on all of your in-class statements. Sound reasoning requires that our ideas are based upon evidence that others can examine. For this course that evidence will come from our book, library articles, laboratories and other exercises.
- Seek help when you need it.

Class Behavior Rules

- **No electronic devices will be allowed in class. That means no laptops, no phones, no handheld devices, no iPads, etc.**

Schedule

WEEK	CONTENT/TOPIC	OBJECTIVES	ARTIFACT/ASSESSMENT	LEARNING ACTIVITIES
Module 1/Week 1	Introduction to Cognitive Psychology/Issues of Replication	Define and describe cognitive psychology Understand theory building and evaluation Review importance of replication in science	Theory Evaluation exercise Replication discussion	Cognition description Overview of Theory and theory evaluation Discussion of replication paper **Galotti Ch 1** CogLab: *Brain Asymmetry* *ISLE: ISLE 3.11 (a). Simulating Kuffler's Experiment*, *ISLE 3.11 (b). Center-Surround Receptive Fields as Contrast Detectors*

Module 2/Week 2	Cognitive Neuroscience Introduction	A review of the central nervous system Explore methods of studying the brain that adds to understanding cognition	Neuroscience methods exercise	Lecture Discussion of traditional cognition vs cognitive neuroscience **Galotti Ch 2** CogLab: *Partial Report, Müller-Lyer, Garner Interference* ISLE: *ISLE 2.9. Signal Detection Experimen* (settings will be given in class), *ISLE 9.2. Feature vs Conujunction Search* (Do all three types of search on the latter experiment on Method Settings tab)
Module 3/Week 3	Perception	Use understand how the study of perception falls both in cognition and sensation and perception. Explore different models of perception Begin the use of data to form our own ideas about cognition.	Data Presentation add to portfolio Class discussion (could be done as discussion group	Review of perception from cognitive perspective Perception Experiments Review of Perception Data **Galotti Ch 3** CogLab: *Stroop Effect, Spatial Cueing, Simon*

				Effect, Change Detection ISLE: *ISLE 9.4 (b). Attentional Blink and Repetition Blindness : Experiment* (Use default settings)
Module 4/ Week 4	Attention	To use attention as a construct to begin to understand limits of cognitive processing. To gain experience using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	Attention Experiments Review of Attention Data **Galotti Ch 4** CogLab: *Brown-Peterson, Memory Span, Sternberg Search, Suffix Effect, Serial Position Effect, Phonological Similarity*
Module 5/ Week 5	Working Memory	To learn about some of the different memory functions or structures To struggle with different theoretical distinctions for immediate memory To gain further experience in using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	Review of Models of Immediate Memory Working Memory Experiments Review of Working Memory Data **Galotti Ch 5** CogLab*: Forgot it all Along, Von Restorff Effect, Encoding Specificity, Levels of Processing*

Module 6/Weeks 6,7	LTM	To introduce the structure of long-term memory and how it impact retrieval To gain further experiment using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	LTM experiments Review of LTM Data **Galotti Ch 6-8** CogLab: Week 6: *False Memory, Word Superiority Effect, Irrelevant Speech Effect* Week 7: *Mental Rotation*
Module 7/ Week 8	Visual Imagery and Spatial Cognition	To explore the significance of the study of mental imagery to psychology's history To examine some of the ways that processing imagery is similar and different from semantic material. To gain further experiment using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	Imagery Experiments Imagery Data Review Review of Imagery research in Psychology **Galotti Ch 9** CogLab: *Lexical Decision, Categorical Perception-Identification, Word Superiority Effect*
Module 8/ Week 9	Language	To understand language as a linguistic and cognitive process To gain further experiment using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	Language Experiments Review Language Data Language from Linguistic/Cognitive Point of View

				Galotti Chapter 10 CogLab: *Prototypes, Typical Reasoning, Monty Hall, Risky Decisions, Wason Selection Task, Decision Making*
Module 9/Week 10, 11	Thinking/Problem Solving/Decision Making	To understand how cognitive processes impact complex cognitive functions To gain further experiment using data to develop theoretical ideas	Data Presentation add to portfolio Class discussion (could be done as discussion group	TPD Experiments In class experiments Review of issues in light of other cognitive functions Review of experiments **Galotti 11, 12**
Module 10/ Week 12	Individual Differences in Cognition	To examine how cognitive functions can vary across people To understand some of the ways that these variations have been studies	Discussion of individual difference measures	Individual Diff in Cognition Lecture/Discussion **Galotti 14**
Module 11/ Week 13	Artificial Intelligence	Consider the possibility of developing intelligence on computers To consider some of the arguments for and against artificial intelligence	Question on final	Thought Experiments Turing Test vs. Chinese Box Experiment Examples of Artificial Intelligence

Laboratory Schedule

The laboratory web site.

Lab	CONTENT/TOPIC	OBJECTIVES	ARTIFACT/ASSESSMENT	LEARNING ACTIVITIES
Module 1	Stroop Experiment Stroop, J. R. (1933) Studies of Interference in Serial Verbal Reactions	To develop skills in experiment design To further ability in data presentation and analysis To gain more experience in science writing	Methods and results section	Study design Conduct Study Stats Review Data Analysis
Module 2	DRM Experiment Roediger & McDermott (1995) Creating False Memories: Remembering Words Not Presented in Lists	To develop skills in experiment design To further ability in data presentation and analysis To gain more experience in science writing	Lab report	Study design Conduct Study Stats Review Data Analysis
Module 3	Final Research Project	To design and conduct a research project To learning more about data collection, analysis To further learn about	Final Paper Presentation	Identify partners Study presentation IRB Collect data Paper preparation

		dissemination of science writing		Presentation Preparation

Assignments

In Class Data

Most weeks you will be required to collect some data from cognition related experiments. That data will be due the Friday of the week before we use that data by 2:30 pm. Most of the experiments are in the *CogLab* cd's and are listed as such above. There are a few experiments that draw on other sites, they have links indicated above. You will need to enter the data in class excel sheets on the class SharePoint site. This data is central to our class discussions and lack of participation in the data collection significantly damage the class. You will receive a grade for completion of the labs. The grade will be 100 * the proportion of experiments you complete.

In addition, almost each week (when we have a test or other major assignment due, this will not be required) you will generate a graph from one of the experiments we have conducted. Use either Excel or Jamovi. These will be posted in a forum and you are expected to comment on the graphs of other students in a positive supportive manner. You will be graded on completion of the graphs. 100 * the proportion of graphs you upload.

Exam Like Assignments

Over the course of the semester there will be two exams. They will be 4 to 5 essay questions. The exams will be given in class. The first exam will be 150 points, the second will be 200 points. The second exam will be cumulative.

Laboratories and Their Reports

For the first laboratory, we are going to focus on two skills that many psychology students struggle with: Data representation and interpretation. These are arts and do not follow absolute rules though there are better and worse ways to do each. To do these skills takes time and thought and cannot be well done at the last minute. For this lab you will hand in a full APA paper written in APA format. The data are to be clearly presented,

analyzed and interpreted. TAKE TIME ON THIS STEP. This assignment is worth 75 points.

For the second laboratory you write of a brief paper describing the lab and the results from the lab. The format of the reports will be APA. You have had APA format before so you are expected to be familiar with writing papers in this format. This is a more complicated study so take your time on the data analysis and, in particular, the data interpretation. The labs are to be submitted in a Word format on the due date indicated. This lab report is worth 100 points.

Please download Jamovi which is an open source statistics program that is easier to use than SPSS. The web address is jamovi.org.

Final Laboratory Project

In teams of two or three, you will design and conduct an experiment in the realm of cognitive psychology. To prepare you for this project, you need to develop teams and develop an idea for the project by the lab period set aside to discuss the projects. During this lab the class will act a research group. Each team will present their project idea and the whole class will discuss the project, anticipate projects and suggest solutions and improvements. At the end of the term you will present the project in written, and oral formats. The paper is due on Thursday of dead week. The paper will be submitted in a Word format by 5:00 pm that day. For your assistance, here is a link to past PowerPoints, and in some cases papers, from past projects. This final project is worth: Timely completion of tasks: 50 points, Presentation: 75 points, Final Paper: 75

- Additional Forms
    - Human Subject Application - required at the time initial presentation
    - Sign-up Sheet - as an example that might be helpful

Grading and Policies

Class Participation:

To help ensure that students actively participate there is a participation grade of 125 points. Attendance alone cannot but provide for half of these points. As stated above, sharing of your views and critiquing the ideas of

others is a necessary part of this class. These behaviors are necessary for the remainder of the class participation grade.

Late Policy:

An assignment is late 1 minute after the beginning of class. One letter grade will be subtracted for the first day late and another letter grade for each additional day. No assignment will be accepted more than three days late. The one exception to this rule is for homework. No late homework will be accepted at all.

Grades:

Class Experiment	100
Class Experiment Graph	100
Lab 1	75
Lab 2	100
Final Project	200
Exam 1	150
Exam 2	200
Participation	125
Total	1050

Grades will be converted to percentiles and letter grades will be assigned as follows:

Grade	Percentage Range
A	100 - >93%
A-	93 - 90%
B+	<90 - 87%
B	<87 - >83%
B-	83 - 80%
C+	<80% - 77%
C	<77 - > 73%
C-	73 - 70%
D+	<70 - 67%
D	<67 - 60%
F	< 60%