

# Cognitive Psychology (85-211)

## Course Description and Syllabus

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### GENERAL INFORMATION

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<i>Instructor:</i>	<b>Prof. Erik Thiessen</b> 342D Baker Hall, thiessen@andrew.cmu.edu Office Hours: M, 2:30 – 4, or by appointment
<i>Graduate TA:</i>	<b>Tim Murphy</b> tkmurphy@andrew.cmu.edu Office Hours: M, 1:45 – 2:45, Baker Hall Lounge
<i>Textbook:</i>	Cognition: Exploring the Science of the Mind Daniel Reisberg
<i>Home Page(s):</i>	<a href="http://canvas.cmu.edu">http://canvas.cmu.edu</a>

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### OVERVIEW AND OBJECTIVES

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Cognitive Psychology is the study of the mind; how we perceive the world, remember, reason, think, and learn. To study the mind, cognitive psychologists use methods including laboratory experiments, computational models, brain imaging, and studying the effects of brain damage. We will discuss all of these approaches during the course, learning about key theories and research findings that have emerged from the field of Cognitive Psychology.

After successfully completing the course, you should be able to:

1. Relate key research findings to cognitive theories
2. Understand research methods in cognitive psychology, their strengths and weaknesses
3. Describe current issues in cognitive psychology research
4. Explain some of the broader implications of findings from cognitive psychology

More generally, I hope the course will help you develop an ability to understand and critique scientific ideas, and to apply these critical facilities to the ideas and information you encounter in your daily life

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## COURSE STRUCTURE

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**Modules.** The course is divided into 3 modules, 1) Methods, Theories, and Perception; 2) Memory; 3) Language and Higher Cognition

**Lectures and Reading.** The lectures provide the core content of the course, introducing key theories and research findings. The information is supplemented by readings from the textbook, and by other articles included in the homework assignments. Articles associated with the homeworks will be available to download from Canvas. Not all material in the readings will be covered in the lecture, and vice versa, so it is important to keep up with both.

**Homework assignments.** These will give you an opportunity to think and learn about particular topics covered in more depth. The homework assignments will include questions about topics covered in the readings (posted on Canvas), as well as questions for further study and occasionally even a short experiment to try.

**In class quizzes.** Short quizzes in class will allow you to evaluate your progress in the course and test your understanding of recent material. There will be a quiz at the end of most Friday sessions. Quiz dates are specified in the course schedule.

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## REQUIREMENTS AND EVALUATION

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**Exams.** There will be three exams in the course: one at the end of each module. Each exam will involve a mix of multiple choice and short-answer questions, covering material from lectures and reading (both the textbook and the homework readings). All exams are open book and open note. Your grade will be based on your **TWO BEST scores** from the 3 exams. Providing more assessment opportunities than you need for your grade is our way of dealing with missed exams. Barring unusual extenuating circumstances, **there will be no make up exams.**

*On Missing Exams:* To be clear, you can miss 1 exam for free. If you are going to miss more than one exam **due to foreseeable circumstances** (e.g., a job interview, a sporting event), it is your responsibility to arrange for an alternate time to take the exam(s) you will miss by **CONTACTING the GRADUATE TA ONE WEEK IN ADVANCE.**

If you miss more than one exam due to illness or other extenuating circumstances, you will have the opportunity to make up the missing exam(s) by taking a cumulative oral exam with Dr. Thiessen, or working out some other alternative grading scheme.

**Homework.** There will be 3 homework assignments. Your grade will be based on the **TWO BEST scores** from the 3 assignments. Providing more assessment opportunities than you need for your grade is our way of dealing with late or missed assignments. *Late assignments will not be graded, and there will be no make up homework assignments.*

**In Class quizzes.** There will be a short in-class quiz at the end of class most Fridays (see schedule), with 8 quizzes in total. Each quiz will consist of 5 multiple choice questions that cover lectures from the current week of classes and recent textbook readings. Your grade will be based on the **best 5 scores** from the 8 quizzes. Providing more assessment opportunities... well, you get the idea. *There will be no make up quizzes.*

**Final Grade.** There are 800 points in the course. Each exam is worth 200 points (2 best = 400 possible points). Each homework assignment is worth 150 (2 best = 300 possible points), and each quiz is worth 20 (5 best = 100 possible points).

A: 90% (720 points or better)

B: 80% (640 points to 719 points)

C: 70% (560 points to 639 points)

D: 60% (480 points to 559 points)

R: Less than 60% (479 points or lower)

*There is no rounding.* 89.9% (719 points) is a B.

**Research Requirement.** The Department of Psychology has a mandatory research requirement for all students enrolled in 200-level courses. To fulfill the requirement you can 1) participate in 3 experiments before the last day of classes; or 2) read a research article and answer a set of questions. Both options can be completed in less than 3 hours. The research requirement will be explained on the first day of class. If you do not fulfill the research requirement, you will receive an incomplete in this course.

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## POLICIES

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**Feedback and grading queries.** All assignments and exams will be submitted via Canvas (barring extenuating circumstances), allowing graders to give you feedback on your work at the same time as you receive a grade. Once grades have been posted to Canvas, you have **ONE WEEK** to notify us if you believe an error has been made in your grade. Regrade requests should be submitted to Dr. Thiessen ([thiessen@andrew.cmu.edu](mailto:thiessen@andrew.cmu.edu)) by e-mail. Note that the **ENTIRE ASSIGNMENT** will be regraded; your score may either go up or down (or stay the same) on the basis of this regrade.

**Late assignments and missed exams.** To express this concisely: *I don't accept late work.* I know. It's a pretty harsh policy. I do it that way because I use Canvas to make grading faster, and so students start getting feedback immediately (and can thus be placed in awkward positions vis a vis the honor code if other students are doing work after the deadline).

However, there is some good news. Your grade will be based on the best 2 of 3 exams, the best 2 of 3 homeworks, and the best 5 of 8 quizzes. There are more assessment opportunities than you need for your final grade. So you can take a pass on a homework assignment without it hurting your final grade.

Similarly, there will be **NO MAKEUP EXAMS**. If you miss ONE exam, that exam will not be counted toward your final grade. If your life situation is such that you

miss MULTIPLE exams, you should either A) discuss your extenuating circumstances with Dr. Thiessen so we can figure out how best to accommodate you, or B) plan to do really well on homeworks.

**Cheating and plagiarism.** You are responsible for knowing University policies on cheating and plagiarism, as defined in the CMU student handbook. Unless explicitly told otherwise, you can discuss homework and readings with others. However, the final product has to be your own. Not just your own handwriting, but also your own way of explaining and organizing the ideas. Note that plagiarism *includes* making superficial changes (e.g., small additions, deletions, word substitutions, word order changes) to existing material. The idea is the intellectual property, not the specific format. Cheating and plagiarism will not be tolerated. ***If you are caught cheating or plagiarizing, you may be assigned a failing grade in the class.*** If you have any questions or concerns about whether your behavior could be interpreted as plagiarism, please contact the Instructor or the TA before submitting the work!

**Lecture notes.** To reduce your writing burden during lectures, copies of the slides will be provided on Canvas prior to each lecture. The notes are only an outline. They do not contain all of the information presented in the lecture. For example, the lecture notes might pose a question, but you won't know the answer if you're not in class to find out. ***Reading the notes is not an adequate substitute for attending class!*** I recommend that you print out the notes ahead of time, and use them as the basis for your note-taking.

**Electronic Etiquette.** Except on exam/quiz days, the use of laptops, cellphones, tablets, pagers, satellite tv, etc, **IS PROHIBITED IN CLASS.** Think of this class like takeoff and landing on a commercial airline – no electronics allowed (not even in airplane mode).

**Why?** Because research indicates that the use of devices like laptops reduces comprehension of lecture-based course material (see Barak, Lipson, & Lerman, 2006; Carter, Greenberg, & Walker, 2017; Kraushaar & Novak, 2010; Mueller & Oppenheimer, 2014). **EVEN WORSE** – the use of laptops actually impairs the performance of students nearby (see Sana, Weston, & Cepeda, 2013).

Of course, if you have a physical, cognitive, emotional, or spiritual condition that requires the use of a laptop or other electronic device, we will work out a suitable accommodation.

**Taking care of yourself.** You can only learn if you're well enough to do so. Do your best to maintain a healthy lifestyle this semester by eating well, avoiding excessive amounts of drugs and alcohol, getting enough sleep, and taking some time to relax. This will help you achieve your goals and cope with stress. If you are having difficulty with any of these issues, asking for support sooner rather than later is a good idea. If you or anyone you know is in need of support we strongly encourage you to seek it. Consider reaching out to faculty, TAs, friends, or CaPs (<http://www.cmu.edu/counseling>) for guidance in connecting with support that can help.

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## CONTACTING US

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The course's Canvas site is the primary place you can find course announcements, lecture slides, and information about assignments. For specific questions that are not answered on Canvas, feel free to ask a question during class, or you can speak to us directly during office hours. You can also e-mail us to arrange a meeting outside of office hours. You can expect a reply within 48 hours, something to bear in mind as deadlines approach.

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## COURSE SCHEDULE

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On the next two pages, you will see the schedule for the semester. Two important notes:

1) Please *finish* readings by the day they are listed in the schedule. For example, Chapter 2 is listed as Friday, September 13<sup>th</sup>. That means you should have it read by class time on Friday, September 13<sup>th</sup>. If there were a quiz on September 13<sup>th</sup> (there is!) the material from Chapter 2 could be on it.

2) Homeworks (H1, H2, etc.) are *due* on the day they are listed on the schedule. They are typically available on Canvas a week earlier.

Wk	Day	Date	Topic	What's Due?	Reading
1	M	8/26	Introduction		
<b>Module 1: Methods, Theories, and Perception</b>					
	W	8/28	Behavioral Research Methods		
	F	8/30	Laptops and Learning		
2	M	9/2	<b>NO CLASS</b> – Labor Day		
	W	9/4	Neurological Research Methods		Chapter 2
	F	9/6	Theories of Cognition ( <b>QUIZ</b> )	<b>QUIZ</b>	
3	M	9/9	The Eye and the Brain		
	W	9/11	Objects and Optical Illusions		
	F	9/13	Faces ( <b>QUIZ</b> )	<b>QUIZ</b>	Chapter 3
4	M	9/16	Dorsal and Ventral	H1: Perception	
	W	9/18	Synesthesia		
	F	9/20	Perception and Attention ( <b>QUIZ</b> )	<b>QUIZ</b>	
5	M	9/23	Selective Attention		
	W	9/25	Review		Chapter 4
	F	9/27	<b>EXAM 1</b>		
<b>Module 2: Attention and Memory</b>					
6	M	9/30	Early or Late Selection		
	W	10/2	Multi-Tasking		Chapter 5
	F	10/4	Executive Control ( <b>QUIZ</b> )	<b>QUIZ</b>	
7	M	10/7	Inhibition		
	W	10/9	Planning and WM		
	F	10/11	Models of Memory ( <b>QUIZ</b> )	<b>QUIZ</b>	Chapter 6
8	M	10/14	Chunking	H2A: Get Data	
	W	10/16	Encoding		
	F	10/18	<b>NO Class</b> – Mid-Semester break		
9	M	10/21	Amnesia		
	W	10/23	Constructive Memory		
	F	10/25	<b>NO CLASS</b> – Engagement Day		
10	M	10/28	Eyewitnesses	H2B: Analysis	Chapter 8
	W	10/30	Review		
	F	11/1	<b>EXAM 2</b>		
<b>MODULE 3: Language and Higher Cognition</b>					
11	M	11/4	Intro to Language		
	W	11/6	Words and Sentences		

	F	11/8	Language Acquisition ( <b>QUIZ</b> )	<b>QUIZ</b>	
12	M	11/11	Verbs		
	W	11/13	Animal Language		Chapter 10
	F	11/15	Bilingualism ( <b>QUIZ</b> )	<b>QUIZ</b>	
13	M	11/18	Logic	H3: Language	
	W	11/20	Probability and Reasoning		Chapter 12
	F	11/22	Emotion and Cognition	<b>QUIZ</b>	
14	M	11/25	<b>No Class: Pre-Thanksgiving</b>		
	W	11/27	<b>No Class: Thanksgiving</b>		
	F	11/29	<b>No Class: Thanksgiving</b>		
15	M	12/2	Neuroeconomics		Chapter 13
	W	12/4	Review		
	F	12/6	<b>EXAM 3</b>		