

**Cognition
Psychology 215
Emory University
Spring 2000**

Time and Location

Tuesdays and Thursdays, 10:00—11:20 AM
White Hall 208

Instructor and Teaching Assistant

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Overview

This course aims to provide students with two levels of knowledge about cognitive psychology:

- basic theoretical constructs and established empirical findings (covered by the texts)
- examples of state-of-the-art research (covered by the lectures)

The following perspectives organize presented material:

- cognition can only be properly understood by grounding it in the neural mechanisms that produce it
- cognition is not detached computation but arises out of the need for embodied agents to function intelligently in concrete situations

Two well-known principles of learning in cognitive psychology motivate assignments and evaluation in this course:

- Rather than having to memorize extensive amounts of information for the sake of assessment only, students will perform assignments that integrate and apply learning in a problem-oriented manner.
- Rather than having to cram for occasional exams, students will perform assignments on a regular basis, distributed evenly throughout the semester.

Texts

Text on cognition

Eysenck, M.W., & Keane, M.T. (1995). *Cognitive psychology: A student's handbook* (3rd edition). Mahwah, NJ: Erlbaum.

Text on cognitive neuroscience

Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (1998). *Cognitive neuroscience: The biology of the mind*. New York: Norton.

Both texts are available in the University bookstore.

Lecture Outlines

Each student should download the lecture outlines from:

<http://userwww.service.emory.edu/~barsalou/Courses/2000/Cognition/cognition.html>

Students should download and bring the outline to the lecture, given that it will enhance following the lecture and taking notes. Most importantly, the outlines contain low-level detail that would take much time and energy to copy during class. By bringing outlines to class, students can spend more time understanding and thinking about lecture material at a high level.

Topic Cycle

For each of 13 topics from cognitive psychology to be covered, the topic covered will proceed as follows:

Prior to the first class meeting

Read the essay questions. A week or so before each topic cycle begins, students will receive three integrative questions that require integrating material from the texts and the two lectures. As students cover these materials, they should formulate answers to the three questions. Students are free to work together in developing their thoughts and arguments.

Read the background material in the texts. Prior to the first of the two class meetings on a topic cycle, students should read the relevant background material. This material will acquaint students with basic issues, significant theories, and relevant findings, as well as with the basic constructs and vocabulary necessary for understanding research in the area.

Two lectures on current research

The two class meetings of each topic cycle will present examples of specific research in the area. We will go through many specific pieces of research to acquaint students with how research in this area is done.

In-class essay quiz

At the first class meeting of the next topic cycle, there will be an in-class essay quiz on the previous topic cycle. For the quiz, one question will be drawn randomly from the three essay questions given prior to the topic cycle. Students will have approximately 20 minutes to answer the question. Students must answer from memory, and can use no notes, outlines, papers, etc. Typically, an answer should be about two written pages. It should show evidence of having read the texts carefully and of having attended the lectures. A good answer should not only present material from these sources, it should go beyond them and show evidence of original analysis, organization, and insight. Rather than being a list of points, a good answer should take a position and provide a well-reasoned argument for it based on scientific evidence. The later section on grading will provide the specific criteria for grading answers.

Optional Final

At various points in the course, including at the final lecture, students will receive their grade in the course thus far. If students are satisfied with this grade, they do not have to take the final. If they are not satisfied, they can take the final, which can be used to replace up to 4 of their previous quiz scores with higher grades.

A score on a final question can **only** replace a lower quiz score **for the same topic**. For example, a higher score on a final question for Topic 3 can only replace a lower score for an earlier quiz question on this same topic, not on any other topic, such as Topic 4. Thus, in selecting questions on the final, each student should target the topics that he or she scored most poorly on in the quizzes. If a student did poorly on the question for topic four, then he or she should select the quiz question for topic four on the final.

If a score on a final question is higher than a score on a quiz question for the same topic, the quiz score will be replaced. If a score on a final question is lower than a score on a quiz question for the same topic, the quiz score will **not** be replaced. In other words, the final can only improve final grades, not hurt them.

Students will have two opportunities to take the final. The first will immediately follow the last quiz on the last day of class. The second will be the scheduled time of the final. For each final, 1 of the 3 questions in the syllabus will be randomly selected for each of the 13 topics. In other words, a given version of the final will consist of 13 quiz questions, each drawn randomly from the 3 questions for its respective topic. Thus, the question for a particular topic could be the same as the question tested earlier in the course, and it could be the same in both final sessions. Alternatively, the question could differ on each of the 3 occasions, or it be the same on two of them. Any combination is possible. Because questions will be selected randomly for each final, students should prepare for all 3 questions on a given topic.

Students can answer questions in either or both of the final exams. The only constraint is that students can only answer a question for a topic *once*. Thus, a student could answer a question for Topic 4 at the first final and for Topic 7 at the second final. However, a student could not answer a question for Topic 4 at both finals. Should this occur, only the first question from the topic will be graded.

Across the two opportunities to take the final, each student can select from 1 to 4 questions to answer, no more. Thus, a student can replace up to 4 previous quiz grades, assuming that all quizzes were taken earlier in the course.

Make-Ups

There will be no make-ups for missed in-class quizzes. Any missed quizzes must be made up at the final. In these cases, a student should select a final question from each topic area for which a quiz was missed, with the maximum number of questions on the final remaining at 4. Thus, if a student missed 1 quiz, he or she should select 1 question for the missed topic on the final. In addition, the student could select up to 3 additional questions from the other 12 topic areas to replace low grades for these topics. If a student missed 4 quizzes, he or she should select 1 final question from each of the 4 missed topics. As these examples illustrate, the more quizzes missed, the less of an opportunity a student has to improve his or her overall grade by replacing low quiz grades. If a student missed 5 or more quizzes, the final will still only contain 4 questions, leaving the student with 1 or more missing grades. Missing grades not made up on the final will remain at 0 for final grade calculations.

Students who experience extenuating circumstances over the course of the semester, confirmed by a reliable source, can make alternative arrangements for satisfying course requirements.

Grading

Scores on answers to the integrative essay questions will constitute 100% of students' grades.

Grading Criteria

Each answer to a quiz question will be worth from 0 to 20 points. Typically, each question will be graded on the following 4 sub-scales, each contributing 0 to 5 points towards the overall score:

Completeness. Did the answer address *all parts of the question*? A serious attempt to answer all parts of the question will receive full credit, even if parts of the answer are weak, incorrect, etc. Failure to address part(s) of a question will reduce credit.

Study. Does the answer show clear evidence of careful study of the relevant lecture and reading materials? Also does the answer attempt to integrate points and findings from most relevant parts of the lectures and readings. To the extent that an answer shows careful study (*correct* description of findings) and broad study (*full utilization* of findings), maximum credit will be given. To the extent that careful and broad study appears lacking, credit will be reduced.

Coherence. Is the answer *coherent*? A serious attempt to integrate all parts of the argument coherently will receive full credit. To the extent that an answer is a haphazard list of points, credit will be reduced. Ideally, an answer should make a coherent argument, or be coherent in some other way. It should be clear how the various sections of the answer relate, and the various sections should progress clearly and meaningfully.

Evidence. How well is *specific evidence* from the lectures and text used to support the main points of the coherent argument? To the extent that an answer just makes a set of general points, credit will be reduced. Neglecting to mention important and obvious findings from the text and lectures will lower credit as well. Also, if the evidence mentioned does not really bear on a point, credit will be reduced. Typically, there will be no particular evidence that must be mentioned. Of primary importance is mentioning a *sufficient amount* of evidence at a sufficiently specific level to justify the claims made.

Some quiz questions will require creative thought, rather than relying primarily on course materials. In these cases, answers will also be graded on the following scale:

Creativity. Does the answer indicate *creative attempts* to develop ideas and insights not present in the course materials? Does the answer indicate an attempt to discover a *thoughtful solution* to the problem posed in the question? To the extent that an answer simply reiterates course material and goes no further, credit will be reduced.

When creativity is relevant to a question, all 5 sub-scales may be worth 4 points each, or 1 of the other 4 sub-scales may be dropped, making creativity and the remaining sub-scales each worth 5 points.

When you receive a graded essay back, the scores on each of the relevant sub-scales will be indicated. For the first few quizzes, examples of excellent essays will be distributed, to help students learn how to answer the quiz questions effectively. Also, the TA and the instructor will be available to help students develop good strategies for preparing answers.

Final Grades

Final grades are not determined strictly by absolute levels of performance, nor strictly by curve. Typically, both factors are taken into account, depending on the particular group of students taking the course. If many students achieve high levels of performance, absolute grading criteria will dominate grading on the curve, such that more students receive higher grades. If few students achieve high levels of performance, absolute criteria may be relaxed, and grading on the curve will dominate to ensure that a reasonable number of students receive high grades. These are only rules of thumb, with the particular grading policy adopted reflecting the attitudes and abilities of the students taking the course, the difficulty of the assignments, the grading standards of the instructors, and so forth.

Writing Requirement

The course satisfies the writing requirement. Because students will write on a weekly basis and receive continual feedback on their writing, they will receive much opportunity to develop their writing skills. Students typically report that their ability to handle the integrative questions develops considerably over the course. Although students initially feel a little intimidated by formulating answers to these questions from material in the texts and lectures, they usually become comfortable with the process quickly. Integrating material from a variety of sources to answer open-ended questions is a useful skill in many professions.

Course Schedule

Topic	Date	Sub-topic	Required Readings
1. Introduction			
	Jan. 20	The study of cognition (history and background)	EK 1-25; GIM 1-22, 93-102
	Jan. 25	Cognition as embodied and situated	GIM 44-68, 69-93, 102-120, (23-44 rec)
2. Perception and action			
	Jan. 27*	Perceptual systems	EK 27-46; GIM 121-175
	Feb. 1	The motor system	EK 73-94; GIM 371-422
3. Attention			
	Feb. 3*	Selective attention	EK 95-122; GIM 207-246
	Feb. 8	Divided attention and automaticity	—
4. Episodic memory			
	Feb. 10*	Memory systems	EK 123-156; GIM 247-288
	Feb. 15	Memory processes	EK 157-202; GIM 423-438
5. Categorization			
	Feb. 17*	Exemplars, prototypes, and rules	EK 47-70
	Feb. 22	Background knowledge and agnosia	EK 233-256; GIM 176-206
6. Concepts and knowledge			
	Feb. 24*	Conceptual structure	EK 257-274
	Feb. 29	Conceptual processes	review categorization readings
7. Construal effects			
	Mar. 2*	Construal in perception	review categorization and
	Mar. 7	Construal in cognition	concepts readings
8. Working memory			
	Mar. 9*	Structure and function	review memory readings, esp
	Mar. 21	Imagery	EK 123-134; GIM 247-255, 423-435
9. Language			
	Mar. 23*	Properties of language	EK 275-306; GIM 289-322
	Mar. 28	Language comprehension	EK 306-330 (331-354 rec)
10. Thought			
	Mar. 30*	Decision making and problem solving	EK 355-376; GIM 423-464
	Apr. 4	Reasoning	EK 405-434
11. Learning and plasticity			
	Apr. 6*	Learning	EK 377-404
	Apr. 11	Plasticity	GIM 465-494
12. Social cognition			
	Apr. 13*	Emotion, individuals, and the self	EK 435-462
	Apr. 18	Implicit social cognition	—
13. Cultural cognition			
	Apr. 20*	Cultural universals	GIM 495-526
	Apr. 25	Cultural divergences	—
	Apr. 27*	Quiz and optional final #1	
Optional final #2			
	May 8	Monday, 4:30—7:00 PM	

* On these days, there will be a quiz at the start of class for the previous topic.