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PSYC 265.01: Cognition

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COGNITION

Psychology 265, Section 1

Spring 2003

Time & Location: Tue/Thu, 2:10-3:30, Chem-Pharm 109
Instructor: Dr. Wendy Shields (Ph.D., cognitive psychology, SUNY-Buffalo, 1999)
Office: Skaggs Building, Room 202
Office Hours: To be announced
Telephone: 243-4521 (department) or 243-2917 (office)
E-mail: wshields@selway.umt.edu
Text: Reed, S. K. (2000). *Cognition: Theory and applications* (5th ed.). Belmont, CA: Wadsworth/Thomson Learning.
Buyer, L. S. (2000). *Study guide for Reed's Cognition* (5th ed.). Belmont, CA: Wadsworth/Thomson Learning. (Optional)

This course will provide students with an introduction to the field of cognitive psychology. Cognitive psychology is the study of the acquisition, storage, and use of knowledge. We will discuss how we perceive and recognize objects in our environment, how we attend to these objects, how we remember information, how we categorize objects and represent knowledge, how we solve problems, make decisions, and use language. Clearly these issues are important to our understanding of ourselves and all other areas of psychology. These topics are also important to other areas as well. For example, what we know about how we perceive and remember information is crucial in legal cases that involve eyewitness testimony, and can influence life or death decisions.

Course Topics and Objectives

Note: This is a list of main objectives. Not all exam questions will relate directly to these objectives.

Introduction to Cognitive Psychology (Chapter 1) By the end of this section you should be able to describe (a) The types of phenomena that cognitive psychologists study; (b) The historical antecedents of cognitive psychology and what the “cognitive revolution” was; (c) Some of the techniques that cognitive psychologists use in research; (d) Some of the current theories and models in use in the field of cognitive psychology; (e) Cognitive psychology's relation to other fields.

Pattern Recognition (Chapter 2) By the end of this section you should be able to explain (a) Theories of visual pattern recognition and object recognition; (b) Visual and auditory sensory stores and the techniques that have been used to study them; (c) Bottom-up and top-down processing and the effects of context on perception; (d) The neural network modeling approach in understanding and describing cognitive processes.

Attention (Chapter 3) By the end of this section you should be able to explain (a) Structural models of selective attention; (b) Capacity and resource models of divided attention; (c) Process models of attention; (d) Automatic and controlled processing.

Short-Term/Working Memory (Chapter 4) By the end of this chapter you should be able to explain (a) Theories of forgetting: decay vs. interference; (b) The capacity of short-term memory; (c) How we search short-term memory (retrieval); (d) Baddeley's model of working memory.

Long-Term Memory (Chapter 5) By the end of this chapter you should be able to explain (a) Evidence for distinct forms of memory; (b) The Atkinson-Shiffrin model of memory; (c) The serial position effect; (d) Control processes; (e) Ways to improve eyewitness recall; (f) Implicit and explicit memory; (g) Episodic, semantic, and procedural memory.

Memory Codes (Chapter 6) By the end of this chapter you should be able to explain (a) The Levels-of-Processing theory; (b) The Hyde-Jenkins Experiment; (c) Elaboration and distinctiveness of memory codes; (d) The Encoding Specificity Principle; (e) Transfer-appropriate processing.

Visual Images (Mental Imagery) (Chapter 7) By the end of this section you should be able to (a) Describe the imagery theory-propositional theory debate; (b) Describe research that supports the idea that a visual image is similar to a visual percept; (c) Give examples of mnemonic uses of imagery; (d) Describe reality monitoring and its relation to visual imagery.

Categorization (Chapter 8) By the end of this section you should be able to (a) Explain how the use of categories reduces the complexity of the environment; (b) Describe the concept identification paradigm; (c) Describe a variety of theories of categorization, including the classical model, prototype models, and exemplar models.

Semantic Organization (Chapter 9) By the end of this section you should be able to (a) Describe a variety of theories and models regarding how information is organized in memory.

Language (Chapter 10) By the end of this section you should be able to (a) Define language and describe the components of language; (b) Explain Chomsky's Transformational Grammar; (c) Describe a general model of sentence comprehension; (d) Describe the difference between assertions and implications and the importance of implications in courtroom testimony and advertising.

Problem Solving (Chapter 12) By the end of this section you should be able to (a) Classify problems based on the psychological skills and knowledge needed to solve them; (b) Explain the meanings of insight, functional fixedness and the Einstellung effect; (c) Describe common strategies used to solve problems.

Expertise and Creativity (Chapter 13) By the end of this section you should be able to (a) Describe data pertaining to humans' logical reasoning abilities; (b) Understand how prior knowledge influences performance on reasoning tasks; (c) Describe how humans acquire expertise; (d) Describe current research on creativity.

Decision Making (Chapter 14) By the end of this section you should be able to (a) Describe several models of decision making; (b) Explain how people use the availability and representativeness heuristics; (c) Describe how people deal with risk; (d) Describe how understanding decision making processes through cognitive psychological research can improve decision making in important situations such as medical diagnosis.

GRADING

Exams. There will be three closed-book exams and a comprehensive final, each consisting primarily of multiple-choice items. The exams will be based on material from the textbook, lectures, and any supplementary material such as handouts, reading material on reserve, and films presented in class.

Calculation of final grades. Your total score will be the sum of your three best exam scores out of the possible four. (You get to drop one exam score.) If you are pleased with your grade after the three semester exams, you do not need to take the final. Exams have equal weight in the calculation of final grades (each exam score contributes 33.3% to the final grade). Your final grade will be based on percentages: A = 90% or better, B = 80-89.9%, C = 70-79.9%, D = 60-69.9%, F = 0-59.9%.

OTHER IMPORTANT INFORMATION

Attendance. You will be held responsible for any information that is communicated during class periods. This includes not only lecture material but also any announcements (such as assigned readings or modifications in exam dates), handouts, etc. I strongly suggest that you get to know at least one other student in the class so that you can get copies of notes, etc., if you must be absent.

Disruption of class. The lecture periods should be free of unnecessary disruptions. Please do your best to arrive on time to class. If you must enter late, be as unobtrusive as possible. Please do not leave class early

unless you have an emergency such as illness. When students come and go as they please, the class is not only disrupted--the morale of the students and the instructor is also affected. Remember that attendance is not required, so if you decide to attend, plan to be there on time and for the entire period.

Drops, petitions to drop, incompletes. Monday, **March 10**, is the last day to drop a class without a petition. After March 11, petitions to drop or the granting of incompletes will be approved only in documentable emergency cases. Doing poorly in the course is not considered a documentable emergency case!

Students with disabilities. You are welcome in this class and I will make every reasonable effort to accommodate you. You have the responsibility to inform me of your disability at the beginning of the semester if you require accommodations. Also you have the responsibility to make the appropriate arrangements with Disability Services for Students.

Makeup exams. Make-up exams will be given only at the discretion of the instructor. In general, you will have to take the optional final to make up for any missed semester exam. However, exceptions will be made in the following cases: (a) the student will be out of town representing the University (e.g., at a conference or sporting event) and arrangements are made ahead of time or (b) the student provides a written excuse from a health care provider documenting a medical condition that rendered the student incapable of taking the exam at the scheduled time. Approved make-ups must be completed as soon as possible after the scheduled exam--within two school days unless the problem is prolonged and/or ongoing.

IMPORTANT. Inform me as soon as possible about your situation if you are going to miss, or have missed, an exam. Being out of town, being too busy, etc., are not excuses for not informing me.

Schedule. This schedule is tentative. Changes might have to be made. I also reserve the right to change the topics and chapters that will be covered on each exam. All changes will be announced in class.

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|-------------------|-----------------------------|
| February 27 | Exam 1 (Chapters 1-4) |
| March 25 and 27 | No class (Spring Break) |
| April 8 | Exam 2 (Chapters 5-9) |
| May 8 | Exam 3 (Chapters 10, 12-14) |
| May 13, 1:10-3:10 | Final Exam |