Psychology 650: Cognitive Psychology

Syllabus: Spring 2002

Instructor: Steve Schwartz  
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Web Discussion Page: http://psych.umb.edu/Forum/cog/

Office Hours: Tuesday 3-4, 7-8 PM, and most weekday hours—call my office.

Class meeting Times: Tuesday 4-6:30, Room M-3-430.


Course Description:

This course provides a survey of contemporary cognitive psychology - the study of how people acquire, store, retrieve and use information. The central model or metaphor used by cognitive psychologists is symbol manipulation or the processing of information as performed by computers. In other words, it has proved quite useful in studying human cognitive behavior to consider human beings as information processors. We will consider the implications of this model, its applications, limitations and some alternative conceptions, particularly as informed by neuropsychology. We will pay special attention to the applicability of the theories and findings to issues of learning, thinking and transfer to both formal and informal settings.

There are a number of main themes and issues that will run through the entire course. These are:

1. Human Cognition is organized around the challenge of adapting to a complex, constantly changing environment that confronts us with ambiguity and often, either a shortage of information, or too much information and too many possibilities to logically consider. It is an active, “satisficing”, adaptive system.

2. Despite all of the above our cognitive processes are generally remarkably efficient and accurate.

3. The cognitive processes are interrelated with one another and in fact long held distinctions (i.e. perception, learning, recognition, recall) based on a serial (one step at a time), stage model may have outlived there usefulness.

4. Most cognitive processes involve both bottom-up and top-down processing. The former stresses the importance of information coming from the stimuli in the environment, while the latter stresses the importance of higher mental processes involving our knowledge structures and contents (i.e. expectations, concepts, memories, schemas).

5. How we organize and represent information has a profound effect on almost all of our cognitive processes and behavior. We come to understand something when we can incorporate it into our existing or new organization of knowledge.
In addition to the content themes described above a course in cognitive psychology, so centrally concerned with topics such as learning, thinking, problem-solving etc. provides a unique opportunity to, in effect, practice what is being preached. Thus, for example your text deliberately attempts to maximize learning and transfer by incorporating such features as: chapter outlines or advanced organizers; section summaries within chapters; important technical terms in boldface that are defined in the glossary at the end of the book; demonstrations of phenomena; applications to real life situations; excellent summary tables and figures; end of chapter review questions; and finally annotated suggested readings at the end of each chapter.

I will attempt to do likewise in both our in-class lectures, discussions, demonstrations, activities, as well as in the small and larger assignments. I want this to be an active, interactive class. Move often than not, your ability to productively participate in the above, to get the most out of them, and to contribute most to the class, will depend upon you coming to class prepared - having read and thought about the topics under consideration. I will not always succeed, and would honestly appreciate it if you would let me know either in public or in private when something doesn’t work for you, and if you might have a possible suggestion. After all many of you are in fact expert teachers in your own right as well as expert learners!

Course Objectives:
1. To understand current theories of how knowledge is acquired, stored and represented in long term memory and be able to apply that knowledge in diverse settings.
2. To understand the changes that occur in knowledge representation with experience and the development of expertise.
3. To understand the biases, limitations, remarkable strengths and weaknesses of the human information processing system and the ways in which these limitations can be overcome and lead to improved learning and thinking in many situations.
4. To understand some of the research methods of cognitive psychology, both in controlled and naturalistic settings and to appreciate the values and pitfalls of each.
5. To understand the rationale for a number of new strategies for learning and problem-solving, and to actively practice and use them.
6. To become comfortable at critically reading articles in cognitive psychology.

Course Requirements:
1. Three written assignments, based on small experiments due throughout the term (each written assignment should be about 7 typed pages in length).
2. At the end of each class you will be asked to take 5 minutes to write one or two sentences on:
   a. the most important idea, concept, knowledge, technique, etc. I got from class today,
   b. what is still confusing, disturbing, not clear, etc.
   c. after class I also want a one or two sentence application of some aspect of the material covered in class and/ or in the weekly readings.

Please submit this (2,a,b,c) to our class discussion page at http://psych.umb.edu/Forum/cogpsych/ each week by noon on the Wednesday after each class.
I will demonstrate how to register yourself on our class discussion page at our first class. At the beginning of the next class I will respond to your comments. I may also comment occasionally on the discussion page. It’s a good idea to check it regularly to see other student comments. Do not use email for this purpose. When you have a specific question or other information that you want me to get directly use my class email at cogpsych@umb.edu. I check my email every workday and sometimes on weekends as well.

3. A final project or term paper, due May 21, 2001. I will provide more details of your options later, but this will be a significant piece of work, on the order of 15-20 typed pages.

4. Attendance and participation in class activities and discussions. Since class is only once a week and a variety of activities take place in class, it is assumed that students will attend all classes having read and thought about the assigned material. An absence is a serious loss. If this cannot be avoided you should at least arrange to get the notes and discuss what you missed with another student.

Course Grade:
1. Major Assignments (45%, 15% per assignment).
2. Weekly Applications (15%)
3. Final Project - Paper (30%)
4. Participation in class activities, discussions, etc. (10%)

Course Policies:
1. If you are having difficulty in completing an assignment or paper, please contact me to work out the problems. Extensions can be given in unusual circumstances. However, late papers will not be accepted if I have not given prior approval.
2. Incompletes for the course can only be given with prior discussion and consent of the instructor.
3. In accordance with Section 503 and 504 of the Rehabilitation Act of 1973 the University of Massachusetts Boston attempts to accommodate all students with certified “special needs”. Through the Lillian Semper Ross Center for Disability Services various aids such as sign language interpreting, readers, testing accommodations, counseling, etc. are available to students. If you believe that you have such special needs you should contact the Center on the first floor of the McCormack Building (287-7430) as soon as possible.
4. It is assumed that in this class each student and I will act in a professional and honest manner. Therefore, any student who engages in an act of Academic Dishonesty, plagiarizing a paper (copying from any source without quotes and referencing is plagiarizing), falsifying data, paraphrasing other student’s weekly reactions, etc., will receive a failing grade for that assignment and in most cases a failing grade for the course. Please review the sections on Academic Standards, Cheating, and Plagiarism (pg. 44, 45), sections II and IV, and V of the Code of Student Conduct (pg. 48-52) in the University Undergraduate Catalog 2000-2001. If you still have questions about Academic Honesty or expectations in this course see me well prior to the due date of the assignment.
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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Jan. 29</td>
<td>Why Cognitive Psychology? What can studying it do for me?</td>
<td>M – ch.1</td>
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<tr>
<td>Feb. 5</td>
<td>How do we create stability and sense in a world of chaotic stimulation?</td>
<td>M – ch.2a; S – 1,3</td>
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<tr>
<td>Feb. 12</td>
<td>How do we control our attention? How does this relate to consciousness?</td>
<td>M – ch.2b; S – 5,6</td>
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<td>Feb. 19</td>
<td>What is the role of Imagery in our understanding of the World?</td>
<td>M – ch.6; R – 15</td>
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<td>Feb. 26</td>
<td>How much can we keep in mind at one time and how do we do it?</td>
<td>M – ch.3a,b; R – 7,23</td>
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<td><strong>HAND IN ASSIGNMENT ONE</strong></td>
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<td>March 5</td>
<td>Continued.</td>
<td>M – ch.3b; R – 8,9</td>
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<tr>
<td>March 12</td>
<td>How do we encode information and what effect does that have on remembering it later?</td>
<td>M – ch.4, 12a; R – 10,</td>
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<td>March 19</td>
<td><strong>SPRING BREAK</strong></td>
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<tr>
<td>March 26</td>
<td>How can I learn and remember better?</td>
<td>M – ch.5, 12b; R – 16,23</td>
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<td>April 2</td>
<td>How do we represent verbal and other forms of knowledge in our minds?</td>
<td>M – ch.7; R – 13,14</td>
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<td><strong>HAND IN ASSIGNMENT TWO</strong></td>
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<td>April 9</td>
<td>What makes a true language and how do humans come to learn and use it?</td>
<td>M – ch.8, 12c; R – 17,18</td>
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<td>April 16</td>
<td>How do we create meaningful oral and written communications.</td>
<td>M – ch.9;</td>
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<td>April 23</td>
<td>Why is problem solving and transfer so hard to teach and do?</td>
<td>M – ch. 10a,b,c</td>
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<td>April 30</td>
<td>How does one become an expert problem solver in some field?</td>
<td>M – ch. 10 d,e R - 20</td>
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<td><strong>HAND IN ASSIGNMENT THREE</strong></td>
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May 7  How do we really reason and make decisions?  M– ch.11; R – 21,22

HAND IN OUTLINE OF FINAL PAPER

May 14  How can we most usefully think of Intelligence and why is it so important anyway?  R - 25

MAY 21  FINAL PAPER DUE

The above schedule and procedures in this course are subject to change by the instructor in the event of extenuating circumstances.