

Memory and Cognition

PSYC 371

Fall 2009

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Course Description:

This course is a survey of the major concepts in cognitive psychology, including theories and supporting data. My goal for the course is not only to introduce you to the field of cognitive psychology, but also to show you how questions about human information processing can be answered using the experimental method. We're going to cover the material on two levels: the specifics of individual studies and a broad view of how the studies relate to one another. At the end of the semester, you should be able to identify the contribution of the key studies in cognitive psychology and understand how all of the studies together help to form a coherent view of human information processing. This course explores one of the most active and exciting areas in psychology today: cognitive psychology. As you will see, learning requires the active participation of the learner. Feel free to ask questions; we're all here to learn and explore. **Please note:** You must have completed PSYC 251 Research Methods, and ENGL 102, 103, or 104 (or my permission) to take this course.



Required texts and reserve materials:

Anderson, J. R. (2005). *Cognitive psychology and its implications (6th edition)*. New York: Worth Publishers.

Reserve materials

Logie, R. H. & Baddeley, A. D. (1987). Cognitive processes in counting. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 310-326.

Sternberg, S. (1966). High-speed scanning in human memory. *Science*, 153, 652-654.

Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology*, 18, 643-662.



Tentative Schedule:

Week	Date	Topic	Readings	Assignments
1	08/17	Syllabus		
	08/19	Introduction and History	Anderson, Chapter 1	
	08/21	Introduction and History	Anderson, Chapter 1	
2	08/24	Perception/ Pattern Recognition	Anderson, Chapter 2	
	08/26	Perception/ Pattern Recognition	Anderson, Chapter 2	
	08/28	Perception/ Pattern Recognition	Anderson, Chapter 2	
3	08/31	Perception/ Pattern Recognition	Anderson, Chapter 2	
	09/02	Perception/ Pattern Recognition	Anderson, Chapter 2	
	09/04	Perception/ Pattern Recognition	Anderson, Chapter 2	Color naming data due
4	09/07	APA format	Tutorial on Sakai	
	09/09	Color Naming Lab		
	09/11	Attention	Anderson, Chapter 3	APA format quiz
5	09/14	Attention	Anderson, Chapter 3	
	09/16	Attention	Anderson, Chapter 3	
	09/18	Attention	Anderson, Chapter 3	Clr Naming paper due
6	09/21	Attention	Anderson, Chapter 3	
	09/23	Attention	Anderson, Chapter 3	
	09/25	Review	Chapters 1 - 3	
7	09/28	EXAM I	Chapters 1 - 3	
	09/30	Human Memory	Anderson, Chapters 6 and 7	
	10/02	Human Memory	Anderson, Chapters 6 and 7	
8	10/05	Human Memory	Anderson, Chapters 6 and 7	
	10/07	Human Memory	Anderson, Chapters 6 and 7	STM scanning data due
	10/09	STM scanning lab		
9	10/12	First day of fall break		
	10/14	Human Memory	Anderson, Chapters 6 and 7	
	10/16	Human Memory	Anderson, Chapters 6 and 7	Scanning paper due
10	10/19	Knowledge Representation and Organization	Anderson, Chapters 4 and 5	
	10/21			
	10/23			
11	10/26	Knowledge Representation and Organization	Anderson, Chapters 4 and 5	
	10/28			
	10/30			Counting data due
12	11/02	Counting lab		
	11/04	Knowledge Representation and Organization	Anderson, Chapters 4 and 5	
	11/06			
13	11/09	Know rep. and org.	Anderson, Chapters 4 and 5	
	11/11	Review	Chapters 4 - 7	
	11/13	EXAM II	Chapters 4 - 7	
14	11/16	Thinking, Problem Solving, and Decision Making	Anderson, Chapters 8, 9, and 10	Counting lab due
	11/18			

	11/20			
Thanksgiving break				
15	11/30	Thinking, Problem Solving, and Decision Making	Anderson, Chapters 8, 9, and 10	
	12/02			
	12/04			
	12/07	Review		
Final Examination is Friday, December 11, from 9:00 to 11:00.				



Examinations:

One of my goals for this course is that you learn how and what experimentation has taught us about human information processing. This will be assessed by three in-class examinations. The exams will consist of a mixture of matching, fill in the blank, short answer, and essay questions. The essay questions will either focus on a single experiment or will be broad and integrative in nature. Study questions will be provided to assist in your preparation for the exams. The examinations will consist of a subset of the questions in the study guides. Please note that we may begin covering new material between the time we finish the topics scheduled for an exam and the exam date. This is a consequence of the course scheduling and cannot be avoided so please plan for it.



Lab Projects:

During this course you will conduct three empirical studies on cognitive phenomena and describe your results in APA-style research papers. These research projects will be conducted using the software provided on the course Sakai site. The topic of the first report will be the processes involved in naming colors, the second will investigate the processes involved in counting, and in the last we will examine retrieval from short-term memory.

You should log onto the course Sakai site at <http://courses.shepherd.edu/xsl-portal> as soon as possible. From there you should download the course software from the software page and install it on a Windows-based computer. The software will not work on a Mac. You should also begin reviewing the tutorial on APA format in preparation for the quiz described below.

To run one of the computer-based experiments, you should start the MCLab software and open the help file (select Help Topics from the Help menu of the program). In the Contents window of Help, open the Experiments topic and then choose the name of the experiment. Read the Introduction and the Instructions for the experiment and then follow the instructions to run the experiment. You should do this before the due date listed in the schedule below. On the due date you should bring your data to class; all data analysis will be done as a group in class. The results of the analysis will be required for your paper. ***Failure to bring your data to class on the assigned day will result in a half a letter grade reduction in your grade on the paper for that experiment.***

After you have participated in an experiment you should go to the library and read the reserve article on that experiment. Then you can begin a literature search for additional references. You are required to have a minimum of 6 references for each paper. You should use the PsycInfo database to locate references in psychological journals for these projects. Web sites and articles from the popular media are not appropriate for these papers and will not be accepted. Your goal is to use primary sources which are defined as original reports of research in peer-reviewed psychology journals. Secondary sources, such as your textbook, may be used, but will not count toward your 6 required references.

Your papers should be written in APA format. As noted above, the specifics of APA format relevant to your papers are covered on the Sakai site. One of the main goals of this format, however, is the clear, concise communication of your ideas. As a result, not only will you need to focus on the specifics of the format (margins, headings, etc.), you will also need to pay attention to grammar, spelling, and style. Your papers should be the best writing you can produce. They should be thoroughly proof-read and spellchecked prior to submission. For these papers I will be using a “three strikes, you’re out” policy. I understand that mistakes happen, but the purpose of proof-reading is to catch and eliminate them. Therefore, I will not accept more than three spelling and/or grammar errors. If I find more than three errors I will stop reading your paper and assign it a grade of 30% of the total points for that paper. Please note that I am willing and happy to discuss ideas and drafts with you at any point before the due date, so feel free to stop by my office.

Your papers should be printed in black ink using Times New Roman (or an equivalent serif font) sized at 12 points. It should be printed on plain white paper with no printing on the reverse side. Use 1 inch margins on all sides as specified by APA format. Use a paper clip to hold together the pages of each report. Do not staple the copies or use folders or plastic report covers.

APA Format:

There is an APA format tutorial on the course Sakai site. You should review that information prior to September 7 when we will be reviewing APA format. There will be a short multiple choice quiz on APA format on September 11.

Course grade:

There are a total of 100 points that can be earned in this course. The first exam will count for 15 points, the second exam for 20 points, and the final exam for 30 points. The quiz on APA format will count for 5 points. Your first paper will be worth 5 points, the second worth 10 points, and the third 15 points. Your final grade for the course will be based on the total number of points you earn. Specifically, the values are 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, below 60 = F.

Late Work Policy:

Please note: I expect, perhaps as a result of my management background, your best performance on exams and things turned in when they’re due. I’ll help you prepare for your assignments as much as possible before they’re due, but when the time comes, I expect you to be prepared. All assignments have a due date and I *will not* accept late work without prior arrangements. If you know in advance about any situation that would interfere with your ability to meet a deadline (e.g., excused sporting or other campus events, scheduled business travel), see me as soon as possible *before* the deadline. If your conflict is with an exam date, you may take the test early, again only with prior approval. If something unforeseeable comes up on the day an assignment is due (e.g., a medical emergency, death in the family), please contact me as soon as possible after the incident to discuss possible rescheduling options. Be aware that I will require you to document the cause of any unforeseen rescheduling of exams or other assignments.

Attendance:

This class meets Mondays, Wednesdays, and Fridays from 8:10 - 9:00. Because material from my lectures and any in-class demonstrations will be included on the exams, regular attendance is extremely important for this class. While there are no specific penalties for not attending class, **you** are responsible for information missed during an absence from class and you are responsible for arranging to make up missed material (see page 51 of the University Catalog and the Late Work Policy above).



Mobile Phone Policy:

Cognitive psychology has taught us that learning requires the allocation of attention to the to-be-remembered material and that dividing attention among two or more attention-demanding tasks decreases performance on all of the tasks. Using a mobile phone to engage in any kind of communication is an attention-demanding task and disrupts the classroom learning environment. The Student Handbook prohibits activities that are disruptive in the classroom, therefore use of mobile phones in this class is prohibited. You must turn off your phone when entering the classroom. If you engage in mobile phone use while in class you will lose points equal to 20% of your final course grade per occurrence. If you are concerned about receiving RAVE alerts, I am subscribed to the system and will bring my phone to class. If my phone rings during class time for anything other than a RAVE alert I will award everyone in class that day extra credit points worth 5% of the final course grade.



Academic Integrity Policy:

From the 2009-2011 University Catalog, page 56:

Cheating in all its forms, including plagiarism and cheating on visual work, is considered an academic matter to be controlled and acted upon by the individual faculty member.

Students guilty of academic dishonesty on examinations in any course shall receive, as minimum penalty, a grade of F in that course. Such action shall be taken by the instructor, with written notification to the appropriate University administrators. Repeated offenses shall subject the student to suspension or dismissal from the University. Students involved in facilitating the academic dishonesty among others, such as the unauthorized dissemination of examination materials, will be subject to disciplinary action beyond that called for by their own cheating in the course.

In this class, you must work as an individual on papers and examinations. You may (and actually are encouraged to) form study groups and share notes, books, etc. when preparing for an exam, but you must work alone and without any of these resources when taking an exam. When writing papers, avoid plagiarism. Plagiarism is defined as “the act of stealing and using, as one’s own, the ideas, or the expression of the ideas of another.” This includes not only direct copying of the exact words another author used, but paraphrases of the ideas of another author without properly crediting the original. If you plagiarise on any of the papers for this course, you will receive a grade of F for the course.



Communication:

My intent is to be as accessible to you as possible. Please feel free to stop by my office any time. I’m available by phone whenever I’m in my office and you can leave voice mail if I’m not. If you need quicker response times (especially on weekends), use email. I usually check my email many times everyday, even on weekends. Finally, check the course Sakai page (available at <http://courses.shepherd.edu/xsl-portal>) – it is meant to be a resource to help you with the course. Useful information and some course materials (e.g., PDF versions of my PowerPoint presentations) will be made available there.

NOTICE Email policy

I do not discuss official business (e.g., coursework, course grades, academic advising, etc.) via email unless you use your Shepherd email address. This is mostly for the protection of your privacy. If, for instance, I get an email signed Mary Smith requesting sensitive information about her progress in my class, but it comes from hotgurl46@aol.com, I have no way of knowing whether it really is from Mary Smith or someone else.



Teaching philosophy:

Listed here are some things that I feel you should know about how I teach and what my goals for the course are. I'll also try to provide some tips for improving your performance in the course.

- 1) As stated previously, one of my goals for this course is not only to introduce you to the field of cognitive psychology, but also to show you how questions about human information processing can be answered using the experimental method. We're going to cover the material on two levels: the specifics of individual studies and a broad view of how the studies relate to one another.
 - You can't achieve the second level by dealing with the material only in bits and pieces. You need a framework to tie the pieces together. For the first half of the course, this will be the modal model of memory.
 - Utilize my office hours if you have questions that I cannot answer in class. In general, I'll answer as many questions as possible during class time, but we have a great deal of material to cover and questions specific to a single student are better answered outside of class. If my office hours conflict with another commitment, I will schedule appointments for other times.
 - Answer the questions on the study guides. When I create an exam, I simply cut and paste questions from the study guides. If you can answer the study questions, you should do fine on the exams.
- 2) The ability to read and write are fundamental to our ability to think and reason. As a result, I do pay attention to grammar and spelling in written work. I will relax the standards somewhat on exams due to the time pressure, but exam questions should still be answered in complete, well-formed sentences. Your lab papers should be typed, spell-checked, and proofread before they are turned in.
- 3) I do expect you to know the names and dates associated with the key studies we discuss. This is *not* just an exercise in cruelty on my part. Hirsch (1987) presented the notion of cultural literacy, the notion that it is possible to be fluent in a language and still not be able to read and understand a newspaper or magazine article in that language without knowing something of the culture. For instance, if I mention "Juliette on the balcony" to someone versed in Western culture, certain ideas are conveyed that someone not familiar with Shakespeare would miss entirely. Similarly, if I say Sperling (1960) to an experimental psychologist, meaning is conveyed that would take me pages to spell out.

Study Tips

- 1) Rote memorization is not effective. Don't simply try to memorize the book or your lecture notes.

- 2) Organization is a powerful aid to memory. Use the modal model of memory to organize the material from the first part of the course. For individual studies, keep the purpose of the study in mind. Look for how individual studies relate to one another. This brings me to the next point...
- 3) Active processing on the part of the learner is essential. Take notes, rearrange the notes later, answer the study questions, quiz a classmate (and get quizzed in turn).
- 4) Generating and answering your own questions has been shown to improve exam performance.
- 5) Multiple small study sessions spaced out over a period of time are more effective than a single, massive study session.

This list is not inclusive; other ideas will present themselves as we go through the course.