INTRODUCTION TO COGNITIVE SCIENCE
Syllabus
PSYCH L271; cross-listed as CS L271

Spring 2008, TTh 11.30-12.45
McCormack/1/206

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Class website: http://psych.umb.edu/faculty/kaldy/courses/psyL271/L271_syllabus.htm

Cognitive science is an interdisciplinary science of the mind and the brain. This course examines the historical and contemporary issues and research findings of the core cognitive science disciplines, including cognitive psychology, neuroscience, philosophy of mind and artificial intelligence. This course is the required core course for the Minor in Cognitive Science. For more information on the minor, see: http://psych.umb.edu/cogsci/Site/Cognitive_Science_Minor.html

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Textbook:
Friedenberg, J. & Silverman, G. (2006). *Cognitive Science: An Introduction to the Study of Mind*, Sage Publications

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REQUIREMENTS:

1. Exams: 1 midterm and a (non-cumulative) final exam **25 points each**

Both the midterm and the final exam will consist of a combination of multiple-choice questions and short-answer questions. ***Exams can only be missed with a documented official excuse*** *(e.g. a doctor's note)***.** If you have a family emergency, contact me BEFORE the exam. Make-up exams will be essay questions combined with an oral exam.

2. Papers: 2 short papers (min. 5 pages each) **15 points each**

General guidelines for both papers:
- First, you should start with a short summary of the article where you describe what the main points were *in your own words*.

- Then, you need to relate these points to (1) what you have learned in class, (2) what you read in a few (min. 3) related scientific journal articles, and if it's possible (3) what you have read in the textbook.
- When you quote from the text, always use quotation marks and include the source.
- Formatting: 12-point font, double-spaced, 1-inch margins on all sides
- References: follow the formatting of your favorite scientific journal

Deadlines: The first paper is due on **Tuesday, March 4 at 11.30 am**. The second paper is due on **Tuesday, April 29 at 11.30 am.** You can turn in a hard copy in class or email it to me before the deadline. Late assignments will be accepted, but will be penalized: 1 point deduction/day.

Your paper might qualify for the WPE Portfolio Requirement. Please see me during office hours before you decide to submit your paper for the WPE.

1. First paper: Critical reading of a newspaper article on cognitive science

The entire archive of the New York Times is now online and freely accessible (www.nytimes.com). The Times publishes a couple of articles each month on topics related to cognitive science. Find one of these articles and write a reflection paper on it.

Here are a few representative examples (please don't choose these ones):

Alzheimer's disease: http://tinyurl.com/2z5h9g
Alex, the parrot: http://tinyurl.com/27l4xy
Cognitive dissonance: http://tinyurl.com/33a4c3

2. Second paper: Journal article summary

Below is a list of journal articles that will be suitable for this assignment. You can also choose an article on your own with my approval. More guidelines on how to write the paper will be given in class.

Journal articles:
- Spelke ES, Tsivkin S. (2002) Language and number: a bilingual training study. Cognition.78(1):45-88.
- Gordon N. (2004). The neurology of sign language. Brain Dev. 26(3):146-50.
- Trabasso T, Bartolone J. (2003). Story understanding and counterfactual reasoning. J Exp Psychol Learn Mem Cogn. 29(5):904-23.
- Arbib, M.A., Fellous, J.M. (2004). Emotions: from brain to robot. Trends in Cognitive Sciences 8(12): 554- 561.
- Andersen, R.A., Burdick, J.W., Musallam, S., Pesaran, B., Cham, J.G. (2004). Cognitive neural prosthetics. Trends in Cognitive Sciences 8(11): 486-493.

3. Homework: 3 homework assignments **5 points each**

The homework assignments will be a combination of problems and short-answer questions.
Deadlines for the homework assignments:

1st assignment: **Tuesday, Feb 19, 11.30 am**
2nd assignment: **Tuesday, April 1, 11.30 am**
3rd assignment: **Thursday, May 8, 11.30 am**

Same as with papers: you can either turn in a hard copy in class or email it to me before the deadline. Late assignments will be accepted, but will be penalized: 1 point deduction/day.

4. Presentation: "The Cognitive Scientist of the Day" 5 points

We will begin each class by one of the students introducing a famous cognitive scientist, whose work has made a major impact on the area that we will be discussing. The presentation should be no longer than 10 minutes and can be done with or without the help of PowerPoint. Start with a few important biographical details and then describe the person's major contributions to cognitive science. Feel free to use the web for demos, images, etc. in your presentation.

5. Total point structure:

2 exams x 25 + 2 papers x 15 + 3 homeworks x 5 + 1 presentation x 5 = **100 points total**

91-100	**A**
81-90	**B**
71-80	**C**
61-70	**D**
60 and below	**F**

During the semester, there will be several group activities where extra points can be earned.

Attendance:

You are required to attend class. Up to three classes can be missed without an official medical excuse. If you miss more than three classes without a doctor's note or more than six classes for any reason, you need to see me during my office hours to discuss the extra assignments that you will need to complete in order to make up for the missed work. If you miss 8 or more classes for any reason, you cannot get a passing grade. Excessive lateness will also lower your grade.

ACADEMIC DIFFICULTIES:
The University Advising Center provides for students who are in need of advising and/or tutoring. (Campus Center, 1st floor, Room 1100, http://www.uac.umb.edu/)

The University of Massachusetts Boston attempts to accommodate all students in accordance with Section 503 and 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Through the Ross Center for Disability Services various aids such as sign language interpreting, readers, testing accommodations, etc. are available to students. If you believe that you require such services, you should contact the Ross Center (Campus Center, 2nd Floor, Rm. 2010, 617-287-7430).

STUDENT CONDUCT:
Students are required to adhere to the University Policy on Academic Standards and Cheating, to the University Statement on Plagiarism and the Documentation of Written Work, and to the Code of Student Conduct as delineated in the catalog of Undergraduate Programs, pp. 44-45, and 48-52. The Code is available online at:
http://www.umb.edu/student_services/student_rights/code_conduct.html.
If you still have questions about Academic Honesty or expectations in this course please contact one of the instructors.

INCOMPLETE GRADES:
Incomplete grades can only be given if a student is in good standing and is prevented from completing the course by documented circumstances that are beyond his/her control.

CLASS SCHEDULE FOR SPRING 2008
(homework* and paper due dates are marked)**

DATE	TOPIC	Cog. Scientist	READINGS
T Jan 29	Introduction, overview		
TH Jan 31	What is cognitive science?		Ch. 1.: 1-21.
T Feb 5	The cognitive revolution	G. Miller	Ch. 3.: 65-89, Ch. 4.: 95-100.
TH Feb 7	Philosophical problems 1.	Marr, Searle	Ch. 2.: 29-52.
T Feb 12	Philosophical problems 2.	Dennett, Fodor	Ch. 2.: 52-64.
TH Feb 14	AI	H. Simon	Ch. 10: 320-346
*T Feb 19	AI, robotics	R. Brooks	Ch. 11.: 353-372, 380-386
TH Feb 21	Connectionism	Rumelhart	Ch. 7.: 207-226.
T Feb 26	How to write a paper		
TH Feb 28	Language and mind	Chomsky	Ch. 9.
**T Mar 4	Psycholinguistics 1.	Whorf	Ch. 9.
TH Mar 6	Psycholinguistics 2.	Pinker	Ch. 9.
T Mar 11	Review for the midterm		
TH Mar 13	Midterm exam		
~~T Mar 18~~	NO CLASS: SPRING BREAK		
~~TH Mar 20~~	NO CLASS: SPRING BREAK		
T Mar 25	Research methods: General	Galton	lecture only
TH Mar 27	[movie]		
*T Apr 1	Cognitive neuroscience: Methods	Penfield	Ch. 6.: 163-175.
TH Apr 3	Neuroscience	Sperry	Ch. 6.: 175-202.
T Apr 8	Neuropsychological disorders	Broca, Sacks	Ch. 9.: 294-297.
TH Apr 10	Vision science	Kuffler, Hubel	Ch. 4.: 100-111
T Apr 15	Attention and eye movements	Treisman	Ch. 4.: 112-120
TH Apr 17	Memory and imagery	Ericsson, Shepard	Ch. 5.: 125-149.
T Apr 22	Reasoning and decision-making	Kahneman	Ch. 5.: 149-158.
TH Apr 24	Emotions and the brain	Damasio	lecture only
**T Apr 29	Developmental science 1.	Bowlby	lecture only
TH May 1	Developmental science 2.	Piaget	
T May 6	Evolutionary psychology	Gould	Ch. 8.: 239-261.
*TH May 8	Review for the final		
T May 13	Wrap-up		

The schedule will be regularly updated on the class website:
http://psych.umb.edu/faculty/kaldy/courses/psyL271/L271_syllabus.htm