

Academic Code will be referred to the Dean of the College's Office. Here are some specific pointers on matters of collaboration and avoiding plagiarism in this course:

- o *Interact*. Feel free to discuss your reading and ideas with other students and with the professor as much as seems helpful. Discussion exposes gaps in understanding and flaws in reasoning, and aids in learning the material.
- o *Do your own work* on graded assignments (e.g. papers) and exams. Any work you turn in should be your own, and should not be copied from other students or from printed sources. Discussion with others may influence your thinking, and if such influence is considerable, it is appropriate to acknowledge it in a footnote.
- o *Plagiarism*: Do not submit as your own work a paper, other written assignment, or class presentation anything that was written by someone else. Do not submit a paper or part of a paper for which you have received credit at any other time or place. Each member of a final project team should submit her/his own written report on the project.
- o Give credit in your written work for ideas or expressions obtained from published sources by proper citation of the source: exact quotes must be enclosed in quotation marks and sources given for ideas expressed in new words (i.e., your paraphrases of someone else's words). The preferred form for citation is that suggested by the *Publisher's Manual of the American Psychological Association (APA)*. Several online guides to APA reference format are listed in the Web Resources section of the course website. If you have any questions about whether or how to acknowledge sources, be sure to ask the CAP Assistant or the Writing Fellows.

For information on the Academic Code and tips on avoiding plagiarism please consult the **Dean of the College's website**:

http://www.brown.edu/Administration/Dean_of_the_College/academic_code/guides.html

Course Calendar: (please note that readings are subject to change and will be announced through the course website)

Note: Chapters from two books will be made available on the course website:

Charlton, S., & O'Brien, T. G. (2001) *Handbook of Human Factors: Testing and Evaluation (2nd Ed.)*. (pbk.). Hillsdale, NJ: Lawrence Erlbaum Associates. (abbreviated C&O in the Course Calendar below)

Norman, D. A. (2002). *The design of everyday things*. (pbk.). New York: Basic Books. (abbreviated N in the Course Calendar below)

Week	Dates	Topic	Reading (Canvas Website)
I	January 23	Introduction and History	
	January 25	A History of Human Factors	N: 1 C&O: 1

23Jan2010



(What's the picture?*)

Human Factors CLPS1540 Spring 2013

Instructor: Kathryn T. Spoehr
256 Metcalf Research Lab
Phone x3-9263
Office hours: Tu 2:00 – 4:00 pm, or by appointment
e-mail: Kathryn_Spoehr@Brown.edu

Readings: Journal articles, weblinks, and readings from books will be available through the *Canvas* course website.

Course Goals: Human factors studies the things people use and the environments in which they use these things to better match design with the capabilities, limitations, and needs of people. This course will focus on human cognitive capacities and how an understanding of them should inform the design of such every day things as tools, information displays, work aids, and computer software and website design. The goal is to help students learn and apply cognitive science theory and principles to increase the usability of man-made objects and systems, to reduce errors, to increase productivity, and to improve the safety and comfort associated with using such tools and systems.

Course Requirements: In addition to doing the readings and participating in class, each student will prepare four informal presentations for the rest of the class (some presentations individually and others as part of a small group) and a larger final project. The final project will require students to work in teams to apply the theory and concepts covered in the course to the real-world evaluation of the design and implementation of a website, control system, or other human artifact used in the real world.

Course Format: Some lectures, presentations by outside human factors specialists, student presentations, discussion, case study analysis. The timing of topics and assignments may change slightly over the course of the semester to accommodate the schedules of outside speakers.

Grading: The final course grade will be determined by performance on the four student presentations (10% each), class attendance and participation (10%), and the final project (50%).

Course Policies:

- **Website:** The course has a *Canvas* website. Please make sure to set your *Canvas* messaging so that you receive course announcements in a timely way. Announcements and changes in the course schedule will be distributed through the website announcements and will be posted as a "headline" on the main course page. Assignments, announcements, handouts and slides from class meetings, and links to supplementary materials will be posted there. Guest login will be in effect for the first two weeks of class.

- **Intellectual Integrity and the Academic Code:** Students are expected to adhere to the standards of intellectual integrity set forth in Brown University's Academic Code. All cases in which there is an apparent violation of the

** See the *Canvas* course website to find out.

23Jan2013

Week	Dates	Topic	Reading (Canvas Website)
2	January 28 January 30	Introduction to Signal Detection Theory Signal Detection Theory II	Kersten, D. (1995). Signal Detection and Ideal Observers. [A class primer on the Theory of Signal Detection] Williges, R. C. (1971). The role of payoffs and signal ratios in criterion changes during a monitoring task. <i>Human Factors, 13</i> (3), 261-267. Parasuraman, R. (1985). Detection and identification of abnormalities in chest x-rays: Effects of reader skill, disease prevalence, and reporting standards. In R. E. Eberts & C. G. Eberts (Eds.), <i>Trends in Ergonomics/Human Factors II</i> . North Holland: Elsevier. (pp. 59-66) Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. <i>Psychological Review, 63</i> (2), 81-97. Barnett, B. J., & Wickens, C. D. Display proximity in multicue information integration: The benefits of boxes. <i>Human Factors, 30</i> (1), 15-24.
3	February 4, 6	Student Presentations #1: Applications of Signal Detection (2/4 and 2/6)	Students will work in groups of 3-4 to present one of the papers available on the course website. C&O: 3.4
4	February 8 February 11 February 13 February 15	Human Factors Testing & Evaluation Methods Visual Displays, Attention & Navigation Visual Displays, Attention & Navigation Cognitive Load	Wickens, C. D. & Long, J. (1995). Object versus space-based models of visual attention: Implications for the design of head-up displays. <i>J. Experimental Psychology: Applied, 1</i> (3), 179-194. Martine-Emerson, R. & Wickens, C. D. (1997) Superimposition, symbology, visual attention, and the head-up display. <i>Human Factors, 39</i> (4), 581-601. Sweiler, J., & Chandler, P. (1991). Evidence for cognitive load theory. <i>Cognition and Instruction, 8</i> (4), 351-362.
5	February 20, 22 February 20, 22	Long Weekend – No Class, Monday 2/18 Student Presentations #2: Driving and Distraction (2/20 and 2/22)	

Week	Dates	Topic	Reading (Canvas Website)
6	February 25 February 27	Displaying Information: Graphs and Charts Displaying Information: Graphs and Charts	Tufte, E. (1997). <i>Visual Explanations</i> . Cheshire, CT: Graphics Press. Pinker, S. (1982). <i>A Theory of Graph Comprehension</i> . Cambridge, MA: MIT Center for Cognitive Science Occasional Paper #15.
7	March 1 March 4	Information Dashboards (?) Guest Lecture: "Approaches to Human Factors Problems in Aviation" Kim Cardoso, Senior Scientist, Volpe National Transportation Systems Center	C&O: 12 C&O: 17
8	March 6, 8 March 11 March 13 March 15	Student Presentations #3: Portraying Information Visually (3/6 and 3/8) Language, Communication, and Conceptual Organization Product Design – <i>The Deep Dive</i> Web Design	N: 2, 6, 7 Krug, S. (2000). Don't make me think: A common sense approach to web usability. Indianapolis: New Riders. Chs. 1 & 2. Lee, M. J., & Tedder, M. C. (2003) The effects of three different computer texts on readers' recall: Based on working memory capacity. <i>Computers in Human Behavior, 19</i> , 767-783.
9	March 18, 20 Friday, March 22 – No Class	2 Guest Lectures: Adam Darlow Friday, March 22 – No Class	
	March 23 – March 27	Spring Break – No Class	

Week	Dates	Topic	Reading (Canvas Website)
10	April 1 April 3, 5	Usability Testing Student Presentations #4: Evaluating sets of instructions (4/3, 4/5)	Krug, S. (2000). Don't make me think: A common sense approach to web usability. Indianapolis: New Riders. Chs. 9, 10, 11 C&O: 6, 18
11	April 8 April 10	Memory and Domain Expertise Memory & Memory Aids	N: 3 Lee, M. J., & Tedder, M. C. (2003) The effects of three different computer texts on readers' recall: Based on working memory capacity. <i>Computers in Human Behavior</i> , 19, 767-783. Tan, D.S., Stefanucci, J. K., Proffitt, D.R., Pausch, R. (2001) The Infococpit: Providing Location and Place to Aid Human Memory. Workshop on Perceptive User Interfaces 2001, Orlando, Florida. Stefanucci, J. K., & Proffitt, D. R. (2002). Providing distinctive cues to augment human memory. Poster presented at the 24th Annual meeting of the Cognitive Science Society, Fairfax, VA. Tversky, A. & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. <i>Science</i> , 185, 1124-1131. Tversky, A. & Kahneman, D. (1981). The framing of decisions and the psychology of choice. <i>Science</i> , 211, 453-458.
12	April 12 April 15 April 17 April 19	Decision Making Expertise & Decision-Making Decision-Making & Stress Applications: Aesthetics, Emotion, and Design	Klein, G. (1998). The recognition-primed decision model. In Klein, G. <i>Sources of power: How people make decisions</i> . Cambridge, MA: MIT Press. (Ch. 3, pp. 15-30) Traftinsky, N., Katz, A.S., & Ikar, D. (2000). What is beautiful is usable. <i>Interacting with Computers</i> , 13, 127-145. Norman, D. A. (2004). <i>Emotional Design</i> . New York: Basic Books. (pp. 17-33, 99-115).
13	April 22-24	Term Project Sharing preliminary data and findings (4/28)	

23.Jan.2010

Week	Dates	Topic	Reading (Canvas Website)
	April 26 - May 7	Reading Period - No Class	

Final Project Due – Friday, May 10 at 5:00 p.m.

23.Jan.2010

