

## Fall 2009: Course Description for Human Factors Engineering (SYST 470)

Instructor: Dr. Leonard Adelman

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Office Hours: Tuesdays & Thursdays, 4:30 - 5:00 (or by appointment)

Text: Wickens, C.D., Lee, J.D. Liu, Y., & Gordon Becker, S.E. (2004). *An Introduction to Human Factors Engineering* (2<sup>nd</sup> ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Prerequisite: SYST 210 & STAT 344 beginning with 2009-2010 Catalog/Banner  
SYST 201, STAT 346, & STAT 354 beginning with 2007-2008 Catalog;  
SYST 301 and STAT 344 for earlier catalogs.

The purpose of this course is to help students design better systems by taking into account the “human” component of the system. Our goal is improved system usability by taking a “user-centered” design orientation. The course focuses on human performance characteristics and limitations. It includes such topics as perception, cognition, memory, and decision making. It also includes system design and safety issues for addressing these characteristics and limitations, and research & evaluation methods for improving system development.

Your course grade will be based on three exams including the final exam (each worth 20% of your grade), a student project (20%), and class participation (20%). I use the full grading scale, including pluses and minuses. The exams will be based on questions that I handout in class. The questions will cover material presented in the textbook and class. The exams are closed-book and closed-notes. I will tell you which questions have the highest probability of being on the exams during the review period. I will not review written answers to questions prior to the exams. So, please use the review period to make sure you know the answers to questions that might be on the exams. Laptops can not be used to take the exams.

I expect students to read the material for each week’s class before the class so that they can answer questions about it. Since I will use a seminar format, class participation is critical to its successful implementation. Therefore, I will grade class participation after each class session. You’ll receive 1 point for actively participating, 0.70 points for attending class but not participating, and no points if you do not attend class. Since there are 21 class periods for class participation, you could receive 21 points if you actively participate in all those classes.

Students will work individually on their student project. The purpose of the project is to give students an opportunity to apply what they have learned in class to a real problem. The project must involve data collection and analysis, such as conducting an experiment or usability test. You are required to use statistical tests to support your conclusions. The result of the project will be a 10-minute presentation (with viewgraphs). Presentations will be given the last three days of class. Students who present on Dec. 3rd will receive an additional 2 points; those who present on Dec. 8<sup>th</sup> will receive an additional point. These additional points easily could be the difference between a B+ and an A-.

**SYLLABUS: Human Factors Engineering (SYST 470-01, Fall 2009)**

- Week 1 (9/1 & 9/3) Introduction (Ch 1) & Research Methods (Ch 2)
- Week 2 (9/8 & 9/10) Research Methods (Ch 2) & Design & Evaluation Methods (Ch 3)
- Week 3 (9/15 & 9/17) Design & Evaluation Methods (Ch 3) & Cognition (Ch 6)
- Week 4 (9/22 & 9/24) Cognition (Ch 6) & Review for Exam #1
- Week 5 (9/29 & 10/1) Exam #1 & Decision Making (Ch 7)
- Week 6 (10/6 & 10/8) Go over Exam #1 & Decision Making (Ch 7)
- Week 7 (10/13 & 10/15) No Class on 13th; Displays (Ch. 8)
- Week 8 (10/20 & 10/22) Displays (Ch. 8) & Usability Testing and HCI (Ch 15)
- Week 9 (10/27 & 10/29) Usability Testing and HCI (Ch 15) & Review for Exam #2
- Week 10 (11/3 & 11/5) Exam #2, Stress and Workload (Ch. 13)
- Week 11 (11/10 & 11/12) Go over Exam #2, & Stress and Workload (Ch. 13)
- Week 12 (11/17 & 11/19) Control (Ch 9, pp. 219-227) & Automation (Ch. 16)
- Week 13 (11/24 & 11/26) Safety (Ch 14) & No Class (Thanksgiving Day)
- Week 14 (12/1 & 12/3) Safety (Ch 14) & Student Presentations
- Week 15 (12/8 & 12/10) Student Presentations & Review for Final Exam
- Week 16 (12/15, from 1:30 to 3:30) Final Exam