

Fall 2013: Course Description for Human Factors Engineering (SYST 470)

Instructor: Dr. Leonard Adelman

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Office Hours: Tuesdays & Thursdays, 3:00 - 3:30 (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 210, STAT 346, & STAT 354 for 2007-2008 Catalog

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.

I use the full grading scale, including pluses and minuses. In general, that means the following grading range: A ( $\geq 90$ ), B (80 to 89), C (70 to 79), D (60 to 69), and F ( $< 60$ ). 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%). 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 cannot 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. You are permitted to miss 2 classes, with prior notification.

Students can work individually or in 2-person teams for their project. 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. (Failure to use statistical tests probably will result in a loss of two letter grades on the project grade.) The project deliverable will be a 10 to 15 minute presentation (with viewgraphs). Presentations will be given the last two weeks of class. Students who present on Nov. 26<sup>th</sup> will receive an additional 2 points; and those who present on Dec. 3<sup>rd</sup> will receive an additional point. These additional points easily could be the difference between a B+ and an A- in the course. I will give date priority to students who need additional points.

**SYLLABUS: Human Factors Engineering (SYST 470-01, Fall 2013)**

Week 1 (8/27 & 8/29)	Introduction (Ch 1) & Research Methods (Ch 2)
Week 2 (9/3 & 9/5)	Research Methods (Ch 2) & No Class on Sept. 5th
Week 3 (9/10 & 9/12)	Design & Evaluation Methods (Ch 3)
Week 4 (9/17 & 9/19)	Cognition (Ch 6) & Review for Exam #1
Week 5 (9/24 & 9/26)	<b>Exam #1 on 9/24</b> & Begin Decision Making (Ch 7) on 9/26 unless still covering Cognition (Ch 6)
Week 6 (10/1 & 10/3)	Decision Making (Ch 7) & Go over Exam #1
Week 7 (10/8 & 10/10)	Displays (Ch. 8)
Week 8 (10/15 & 10/17)	No Class on 10/15 (Columbus Day Recess) & HCI (Ch 15 to p. 410)
Week 9 (10/22 & 10/24)	HCI (Ch 15) & Review for Exam #2; then <b>Exam 2 on 10/24</b>
Week 10 (10/29 & 10/31)	Discuss Presentations; Workload (Ch. 13); and Go Over Exam #2
Week 11 (11/5 & 11/7)	Workload (Ch. 13) & Discussing Presentations (ongoing)
Week 12 (11/12 & 11/14)	Control (Ch 9, pp. 219-227) & Automation (Ch. 16)
Week 13 (11/19 & 11/21)	Automation (Ch. 16) & Safety (Ch. 14)?
Week 14 (11/26 & 11/28)	Student Presentations & No Class on 11/28 (Thanksgiving Day)
Week 15 (12/3 & 12/5)	Student Presentations & Review for Final Exam
Week 17 ( <b>12/17</b> , from 1:30 to 3:30)	<b>Final Exam</b> (Note: No Class during Week 16)

**Additional Information**

- GMU is an Honor Code university
- Emails will be sent to your GMU email address
- Office of Disability Services: 703-993-2472 (<http://ods.gmu.edu>)
- Counseling & Psychological Services: 703-993-2380 (<http://caps.gmu.edu>)
- Writing Center: A114 Robinson Hall, 993-1200 (<http://writingcenter.gmu.edu>)
- University Libraries: <http://library.gmu.edu/mudge/IM/IMRef.html>