

Fall 2010: Course Description for Human Factors Engineering (SYST 470)

Instructor: Dr. Leonard Adelman

Office: Engineering Bldg, Room #2223; Phone # 993-1624; e-mail: ladelman@gmu.edu

Office Hours: Tuesdays & Thursdays, 1:30 - 2:00 (or by appointment)

Text: Wickens, C.D., Lee, J.D. Liu, Y., & Gordon Becker, S.E. (2004). *An Introduction to Human Factors Engineering* (2nd 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 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 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. 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 two weeks of class. Students who present on Nov. 30th will receive an additional 3 points; those who present on Dec. 2nd will receive an additional 2 points; and those who present on Dec. 7th will receive an additional point. These additional points easily could be the difference between a B+ and an A-. I will give date priority to students who need additional points.

SYLLABUS: Human Factors Engineering (SYST 470-01, Fall 2010)

Week 1 (8/31 & 9/2)	Introduction (Ch 1) & Research Methods (Ch 2)
Week 2 (9/7 & 9/9)	Research Methods (Ch 2) & Guest Presentation by Prof. Killam (9/9)
Week 3 (9/14 & 9/16)	Design & Evaluation Methods (Ch 3)
Week 4 (9/21 & 9/23)	Cognition (Ch 6) [Review for Exam #1 on 9/23]
Week 5 (9/28 & 9/30)	Exam #1 on 9/28 & Begin Decision Making (Ch 7) on 9/30 unless still covering Cognition (Ch 6)
Week 6 (10/5 & 10/7)	Go over Exam #1 & Decision Making (Ch 7)
Week 7 (10/12 & 10/14)	No Class on 10/12 & Displays (Ch. 8)
Week 8 (10/19 & 10/21)	Displays (Ch. 8) & Usability Testing and HCI (Ch 15)
Week 9 (10/26 & 10/28)	Usability Testing and HCI (Ch 15) [Review for Exam #2 on 10/28]
Week 10 (11/2 & 11/4)	Exam #2 on 11/2 & Begin Stress and Workload (Ch. 13) on 11/4
Week 11 (11/9 & 11/11)	Go over Exam #2 & Stress and Workload (Ch. 13)
Week 12 (11/16 & 11/18)	Control (Ch 9, pp. 219-227) & Automation (Ch. 16)
Week 13 (11/23 & 11/25)	Automation (Ch. 16) & No Class on 11/25 (Thanksgiving Day)
Week 14 (11/30 & 12/2)	Student Presentations
Week 15 (12/7 & 12/9)	Student Presentations & Review for Final Exam
Week 16 (12/16, from 10:30 to 12:30)	Final Exam

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>