IE 4880/6880 – Human Factors Engineering – Summer II 2017

Course Instructor

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Course Objectives

1. Understand human limitations and capabilities and how they impact the design of systems, controls, displays, and related devices.
2. Understand how human factors can influence the design and resulting effectiveness of human-system interactions.
3. An ability to analyze a system and define the human factors and human performance issues necessary for successful operator interaction.
4. An ability to apply Human Factors Engineering data and principles to the design and evaluation of engineering systems.

Required 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. ISBN-13: 978-0131837362

Grading

For IE 4880 students:

Assignments…… 30%
Discussion questions…..…….. 20%
Midterm exam……...……...…….. 25%
Final exam ……...……. 25%

For IE 6880 students:

Assignments…… 20%
Journal review articles..…….…..… 20%
Discussion questions…..…..… 20%
Midterm exam……...……...…….…. 20%
Final exam: ……...…….…….. 20%

Grading Rubric

The scale of 90-100: A, 80-89.9: B, 70-79.9: C, 60-69.9: D and below 60 results in an F grade. Please check and keep track of your grades throughout the semester. If you have questions about your grade during the semester, please ask. Do not wait until the end of the semester.

Course policy

- Read ALL assigned readings. Not all of the material that you are responsible for will be covered in the lectures/lecture slides. Therefore, in addition to lectures and discussions, completing the readings is also necessary for you to succeed in this class.
- Turn in all assignments on time. NO late work will be accepted, unless you have received prior permission.
- You can discuss the assignments (not exams) with classmates but you must submit your own work.

Course Format

This course is an online course. Students will 1-2 reading assignments (chapters or chapter reviews) per week. Students in IE 6880 will also have a journal article to review. Each week there will be one or more short videos that discuss the course materials, a discussion topic, and an assignment due at the end of the week (Sunday 11:59pm). Students must respond to the discussion prompt on Canvas and respond to their classmates. Discussion posts are due Friday at 5pm. The topic for each week (excluding week 1) be posted on by Monday. There will be two exams for this course. You will have 24 hours to complete each of the exams.

Academic Integrity

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. In instances where academic standards may have been compromised, Clemson University has a responsibility to respond appropriately and expeditiously to charges of violations of academic integrity.

Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should make an appointment with Dr. Arlene Stewart, Director of Disability Services, to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disability Services when they meet with instructors. Student Disability Services is located in Suite 239 Academic Success Building (telephone number: 656-6848; e-mail: sds-l@clemson.edu). Please be aware that accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.

Tentative Schedule

Date	Topics	Readings	Assignment	Due
June 28 Week 1	Intro to HF Research Methods	Chapter 1 Chapter 2	**Assignment:** Reducing patient safety incidences **Discussion:** Student introductions *688 students* Meeting the Challenges of An Aging Workforce (Silverstein)	7/2 @ 11:59pm 6/30 @ 5pm 7/2 @ 11:59pm
July 3 Week 2	Decision making Information processing	Chapter 7 Review 1	**Assignment:** Developing a decision support tool or aid **Discussion:** Reflecting on a decision *688 students* Cognitive Bias and Clinical Decision Making (Croskerry)	7/9 @ 11:59pm 7/7 @ 5pm 7/9 @ 11:59pm
July10 Week 3	Stress and workload	Chapter 13	**Assignment**: Measuring workload **Discussion:** Monitoring employees' stress *Midterm exam*	7/16 @ 11:59pm 7/14 @ 5pm *7/16 @ 11:59pm*
July17 Week 4	Design evaluation Human-computer interaction	Chapter 3 Chapter 15	**Assignment:** Task analysis **Discussion:** Improving a poor interface *688 students* Designing Usable Web Forms (Seckler et al.,)	7/23 @ 11:59pm 7/21 @ 5pm 7/23 @ 11:59pm
July 24 Week 5	Automation Displays and controls	Chapter 16 Review 2	**Assignment:** Automating a job or task **Discussion:** Is Automation a double-edged sword? *688 students* A Model of Types and Levels of Human Interaction with Automation (Parasuraman et al.,)	7/30 @ 11:59pm 7/28 @ 5pm 7/30 @ 11:59pm
July 31 Week 6	Error and safety	Review 3	**Assignment:** Identifying safety hazards *Final exam*	*8/2 @ 5pm* *8/1 @ 11:59pm*
All discussion posts are due Friday by 5pm *All assignments are due Sunday by 11:59pm*				