IND E 351: HUMAN FACTORS IN DESIGN
IND E 549A: HUMAN FACTORS IN ENGINEERING DESIGN*
ENV H 549 A: HUMAN FACTORS IN ENGINEERING DESIGN *
SPRING QUARTER 2013

INSTRUCTOR

Linda Boyle, Associate Professor
Industrial and Systems Engineering
Civil and Environmental Engineering
e-mail: linda@uw.edu

Office hours: Mondays: 11:00 am to 12:00 pm (or by appointment)
G5 Mechanical Engineering Building (MEB)
Seattle, WA 98195
IE Chair: Richard L. Storch
CEE Chair: Gregory Miller

TEACHING ASSISTANT

Yiyun Peng
e-mail: yiyunp@uw.edu
Office Room Number: 303 Engineering Annex
Office hours: Wed: 3:30 pm to 4:30 pm

COURSE INFORMATION

Meeting times**:** 11:00 to 12:50 Tuesdays and Thursdays
Meeting room: More 220
No Prerequisites
Textbooks (required):

1. Wickens, C.D., Lee, J.D., Liu, Y., Becker, S.E. (2004). *An Introduction to Human Factors Engineering 2nd Edition*. New York: Longman
2. Casey, S. (1998). *Set Phasers on Stun*. Santa Barbara, CA: Aegean.
3. *There will also be readings from Atomic Chef (author Casey, S.): these will be posted on catalyst.*

OBJECTIVES OF THE COURSE

The objective of this course is to introduce the basic concepts of human factors and to demonstrate the importance of considering human capabilities and limits in system design. This will include an overview of human characteristics and research and design techniques. We will also use case studies to show how people have contributed to accidents and learn from these studies to improve designs.

Course goals:

1. Develop sensitivity to human capabilities and their implications for system performance.
2. Develop task analysis and other skills to understand human/machine interactions and guide human considerations in design.
3. Develop knowledge regarding human capabilities, limits, and tendencies relevant for design.
4. Learn accident analysis techniques to identify causes and cures.

Quizzes and Exams:

Weekly quizzes will be given that cover the material of the previous weeks for a total of 8 quizzes. The quizzes will be focused on the readings from the Wickens et al book. A final exam will be given during the assigned exam period in the Schedule of Courses. The final will be comprehensive and will test the student's overall understanding of the concepts and methods presented in the book and in lecture. All quizzes and exams will be closed book and closed note.

Case Studies:
The case studies from *Set Phasers on Stun* and *Atomic Chef* provide the basis for class discussions related to the application of human factors engineering principles to real systems. Before class, 1) read the specified case(s), 2) write a one page summary (single-space) that includes four parts: (a) a short summary of the accident(s), (b) list at least two human factor reasons for the accident, then (c) list at least two ways to design the system to avoid the accident, (d) something cited from your Wickens et al book to support your recommendation. Upload this summary onto the DROPBOX in catalyst BEFORE the beginning of the class on the specified due date. Points WILL BE TAKEN off for grammatical/spelling errors.

Class Participation:
You are expected to participate in class. If you miss class you are responsible for obtaining the class notes and the assignment. You have a responsibility to help create a classroom environment where all may learn. This means that you will treat other members of the class with the courtesy you hope to receive. The points for participation will be allocated according to the following basis: attentativeness and contributions to class discussions, and student responses to periodic in-class requests to clarify and identify confusing topics, potential quizzes, and exam questions.

NO CELL PHONES or LAPTOPS/COMPUTERS are to be used or turned on in the classroom.

Assignments and Homework:
Students are expected to read the scheduled chapters and complete the specified case study prior to class. Case studies are to be uploaded onto the dropbox in Catalyst before the due date and time.

GRADING

Case Studies (Homework assignments)	20 %
Weekly quizzes	20 %
Midterm	25 %
Class participation	10 %
Final Exam	25 %
Total	**100 %**

Students taking the 500 level series need to see me for additional requirements to satisfactorily complete the course.

ACADEMIC HONESTY
Students will be held to the highest standards of academic honesty. There are specific actions that are considered academic dishonesty, cheating or fraud. I follow the list outlined on the following website: http://www.washington.edu/uaa/gateway/advising/help/academichonesty.php
Students who conduct any of the behavior outlined in the above website will receive a failing grade in the course. If any of the items outlined on the website is unclear, it is up to the student to clarify any and all information outlined in this syllabus with me.

COLLEGIATE POLICIES
For each quarter hour credit in the course, students are expected to spend 2-3 hours per week preparing for the class sessions. Given that this class is 4 credit hours, the standard out-of-class preparation is 8-12 hours.

STUDENTS WITH DISABILITIES
Under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, instructors must make reasonable accommodations for students who have physical, mental, or learning disabilities. Therefore, if you require seating modifications or testing accommodations or accommodations of other class requirements, please let me know so that appropriate arrangements may be made.