Human Factors and Engineering Psychology
M1308.000900-001
Seoul National University, Fall 2019

Instructor: Dr. Sowon Hahn
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Class Time: Tuesday 10:00-12:50 PM
Class Location: Building 101 Room 240

Course Description: In this course, we will survey human capabilities and limitations in human-machine interaction, including vision, memory, attention, motor control, and human error. Emphasis will be on the theories and implications of systems design.

Textbook: Wickens, C. D., Hollands, J. G., Banbury, S., & Parasuraman, R. (2013). *Engineering Psychology & Human Performance* (4th edition). Upper Saddle River, NJ. Pearson.

Student Learning Objectives:

By the end of the term, students will demonstrate their ability to:
- Identify human performance capacities and imitations in modern human-machine interactions;
- Integrate various theories and methods in order to develop research questions;
- Design experimental settings where usability theories can be tested;
- Evaluate the effectiveness of the performance of human-machine systems;

In-Class projects and Quizzes: Every class will have an in-class mini project and/or a quiz. We will create groups in the beginning of the semester, and the quizzes/projects will be administered as a group. There will be 8 in-class projects/quizzes. Each project/quiz is worth 15 points. 120 points.

Exams: There will be two take-home exams. Exam 1 and Exam 2 will be worth 100 points each.

Research Project: All students will be expected to carry out a final research project. The focus of the project will be to take an existing design (of a device, machine, software, or website), critique this design from a human factors perspective, and offer suggestions for design improvements. During the final class meetings, you will present your project using the academic poster presentation format. You may choose to conduct your research alone, or work as a group (2-3 individuals). Your written report (including title, introduction, method, result and discussion, 4-5 pages, 1 inch margin, 11 font size, double spaced) should be done individually. 30 points for group project proposal. 50 points for your individual report.

Poster Presentation: You are required to make a professional poster presentation of your project. Your presentation will be evaluated based on two aspects, the project itself and the quality of your presentation. The cost of the poster print will be covered by the Psychology Department. Recommended poster size: A1 size (594mm x 841mm). 100 points for poster presentation

Extra Credit: You can earn extra credit points by contributing examples of bad designs (i.e., that violate human factors principles) and suggesting a better design. Whenever you see a project or sign that is poorly designed, take a picture of it. Insert the picture to the Microsoft word and write a paragraph explaining what's wrong with it. Some of the submitted examples will be discussed in class. Each acceptable (novel, interesting) example submitted will be worth up to 15 points. (Note: Send original examples only, not from websites.) Maximum 2 examples.

Grading: Your grade will be determined as follows.

Exam (Exam 1 and Exam 2)	200 points
In Class projects/quizzes:	120 points
Project presentation:	100 points
Project proposal	30 points
Project report:	50 points
Total Score	500 points

Final grade will be assigned based on your total percentage points in the course, based on the table below.

Grade	Percentage		Grade	Percentage
A+	97-100%		C	72-76.9%
A	92-96.9%		C-	70-71.9%
A-	90-91.9%		D+	67-69.9%
B+	87-89.9%		D	62-66.9%
B	82-86.9%		D-	60-61.9%
B-	80-81.9%		F	59.9% and below
C+	77-79.9%			

Tentative Class Schedule and Homework Assignment (subject to revision)

Week	Date	Topic	Reading Assignment
1	Sep 3	Introduction Human-Centered Design	Chapter 1
2	Sep10	Signal Detection, Information Theory, and Absolute Judgment	Chapter 2
3	Sep 17	Attention in Perception and Display Space Spatial Displays	Chapter 3 Chapter 4
4	Sep 24	Work on Project Proposal (proposal due by midnight)	
5	Oct 1	Mental Workload, Stress	Chapter 11
6	Oct 8	Language and Communication	Chapter 6
7	Oct 15	Design of Everyday Things (Task-home exam 1 due)	To be distributed
8	Oct 22	Memory and Training	Chapter 7
9	Oct 29	Decision Making	Chapter 8
10	Nov 5	Selection of Action	Chapter 9
11	Nov 12	Human Error	To be distributed
12	Nov 19	Work on Project (poster file due on Nov 21)	
13	Nov 26	Poster Presentation	
14	Dec 3	Future of Human Machine Interaction (Individual Report Due)	
15	Dec 10	(Take-home exam 2 due)	