University of Southern California
ISE 370 - Human Factors in Work Design
Spring 2023

Lectures: TTH 3:30-4:50 pm - KAP 147
Labs: Wednesday 5-7:20 pm - SAL 126

Instructor: Yalda Khashe
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Office Hours: TBD
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Catalog Course Description:
Physiological systems and psychological characteristics; ergonomics; anthropometry; effects of the physical environment on humans; occupational safety and health; work methods.

Text:
Handouts for lecture and case studies will be posted on Blackboard.
A Guide to Human Factors and Ergonomics, Helander, M. (2005), CRC Press (2nd ed).

For work and time studies, chapters will be provided from:
Introduction to Work Study, Kanawaty, G. (1992), International Labour Office. (4th ed).

Course Expectations and Policies:
***Course Expectations and Netiquette*:** To ensure a cooperative learning environment, each student is expected to read the text before each class meeting time, and prepare to actively participate during class discussions, team-related activities, presentations, and writings.

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior. The list of "Netiquette Rules for Class" is included on page 7 of this syllabus. Students are expected to engage in behaviors that enhance the learning environment. Our goal is to optimize the learning experience for all the students; therefore, disruptive behaviors are prohibited and will not be tolerated.

***COVID-19 Policy[1]*:** We recognize that there are challenges associated with attending and participating in courses during the COVID-19 pandemic (or surges associated with

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[1] **As the conditions of the current Covid-19 pandemic changes, we may have to alter details of this syllabus. Please keep updated with announcements on Blackboard and the USC website.**

the pandemic during face-to-face sessions). USC has provided information related to the COVID-19 and how USC is meeting the campus community's needs. Continuously updated COVID-19 requirements can be found on the USC COVID-19 resource center website https://coronavirus.usc.edu/. All students, faculty, staff, and guests must comply with the USC COVID-19 safety guidelines or be subject to disciplinary action.

Importantly, if you become ill, become COVID-19 symptomatic, and/or test positive for COVID-19 during the semester, you will be required to attend classes remotely until you have a negative COVID-19 test result and are asymptomatic. Please rest and contact the USC Health Center for assistance. Stay home if you have come in close contact with someone who has been infected with Covid-19, and contact your healthcare provider for guidance. If you have any questions or require assistance please contact USC COVID-19 hotline: (213) 740-6291, covid19@usc.edu.

Participation and Attendance Policy: It is expected that students will attend class regularly and participate in the class discussion throughout the semester. Participation involves actively listening and volunteering answers to questions and moving the discussion along toward a shared understanding. The participation grade will be assigned at the end of the semester based on objective (contribution to class discussions, interaction with TA/Instructor inside and outside the classroom) and subjective (contributing meaningful questions/answers, illustrating comprehension of course material) assessment by the instructor. The participation rubric is included at the end of this syllabus.

At this time, we expect that Viterbi classes will be back to the usual pre-pandemic instruction modality. On-campus students are be expected to return to fully in-person classes. Students who have medical concerns should contact the Office of Student Accessibility Services (OSAS). Online attendance, unless approved by the school or the instructor, does not count towards course participation.

Due Dates/Make-Up Work: Exams must be taken as scheduled. Assignments are due as scheduled. Make-ups will be allowed only if the student has contacted the professor before the due date, detailing a serious problem. Make-up exams should be scheduled before the next instruction session and cannot be taken before the scheduled exam.

Online Communication Policy: Students are encouraged to contact the instructor by USC email and schedule a meeting during office hours. In the subject line, indicate the course number and a very brief summary of the email. Simple questions will be answered by email, but for more complex discussions students may be instructed to schedule a zoom meeting. We will do our best to respond to your emails within 24 hours. We will be less responsive on the weekends or during holidays.

USC Technology Support Links:
Zoom information for students (https://itservices.usc.edu/zoom/)
Blackboard Help for students (https://studentblackboardhelp.usc.edu/)
Software available to USC Campus (https://software.usc.edu/)

<u>Grading:</u>

I. Letter Grades Table:

96-100	A	75-79	C+
91-95	A-	70-74	C
87-90	B+	65-69	C-
84-86	B	60-65	D+
80-83	B-	56-60*	D

* Grades less than 56: F

The final grade will be based on the above table combined with the cluster analysis of all the students' grades. Which will be explained in detail in the first class session.

<u>According to USC policy:</u> *"*No student is allowed to retake a final examination or do extra work in a course after the semester has ended for purposes of improving his/her grade." https://arr.usc.edu/forms/ARR_Grade_%20Handbook.pdf

II. The final course grade will be determined based on the following weights:

Exam 1 …………………………...…………... 15 %
Exam 2 ………………………………....... 15 %
Exam 3 (Final) …………………………….. 15 %
Lab reports ………………………………… 15 %
Design Project ……………………………. 15 %
Research Paper ………...………………... 15 %
Participation/in-class exercises ………….... 10 %
Peer Evaluation ……………………………. *

*Peer Evaluation will be reflected in the final Term Project grade and the participation grade

Exams: Exams consist of true/false, multiple-choice, short answers and essay questions. If you cannot take an exam on the scheduled date and time, you must provide documents from a responsible party (doctor, court, police, etc.) and you must arrange to take the exam before the following class meeting. The final exam date/time is set USC and cannot be rescheduled.

Assignment Submission: Homework descriptions will be posted on blackboard and assignments are due at the beginning of the class and should be submitted online through Blackboard. Electronic submission must be in MS Office formats.

Lab Sessions: Labs will reinforce and augment course material and provide practical application of concepts and theories presented in class. Refer to the Lab Outline for assignments and grading. Lab attendance is **<u>mandatory</u>**.

In-class Work, Class Discussions, and Final Participation Grade: We encourage students' participation in class discussion. The participation grade will be assigned at the end of the semester, and 50% of the final participation grade is based on the in-class exercises and case studies. The rest of the grade is based on objective (contribution to class discussions, interaction with TA/Instructor inside and outside the classroom) and subjective (contributing meaningful questions/answers, illustrating

comprehension of course material) assessment by the instructor. The participation rubric is included at the end of this syllabus.

Students will complete work assigned during class time, such as small group assignments, open-notes quizzes, and polls that count towards their in-class work grade. Case studies will be presented at the end of each topic (given the time availability) as an in-class group exercise. Each team will read a case and present it briefly. The questions associated with each case will be discussed in the class by all the students. There is no late submission for in-class exercises. Most activities are designed as group exercises; however, no credit will be given to team members who miss the exercises. Credit will be given for thoughtful completion. The lowest two scores on in-class work will be dropped.

Design Project: Integrated throughout the class will be the application of the approaches towards the design of a project related to Human Factors Engineering. You will work in small groups (2-3) students per group and during the last class period will present the results of your design project. Details on the design project will be covered during class.

NOTE:
Course materials and grades will be posted on the Blackboard page. Please make sure that you have access to the blackboard and your **USC account** is up and running.

Tentative Course Outline[2]:

Week of		Topics	Assignment Due	Book Chapter
01	Jan 9	Introduction and Logistics of the course Introduction to Human Factors and Ergonomics	*Team formation*	*Ch1*
02	Jan 16	Cost-Benefit Analysis of Improvements in Human Factors Design		*Ch2*
03	Jan 23	Anthropometry in Workstation Design Work Posture		*Ch 8&9*
04	Jan 30	Manual Materials Handling Repetitive Motion Injury and Design of Hand Tools		*Ch 10 & 11*
05	Feb 6	*February 7 - Research Topic 2-minute Oral Presentation* *February 9 - Exam 1*	*Research Paper Proposal Due (2/7)*	
06	Feb 13	Introduction to Work Measurement and Time Study		*ILO Ch 18*
07	Feb 20	Time Study: Rating and Standard Time		*ILO Ch 20-23*
08	Feb 27	Predetermined Time Study		*ILO Ch 25*
09	March 6	Examples of Time Study		*ILO Ch 26*
10	March 13	*Spring Recess - University Holiday*		
11	March 20	*March 21 - Exam 2* *March 23 - Research progress 2-minute Oral Presentation*	*Research Paper Progress Report Due (3/23)*	
12	March 27	Human Information Processing and sensory systems		*Ch 4 & 5 Handout*
13	April 3	Understanding and Conceptualizing Human-Computer Interaction		*Ch 7 Handout*
14	April 10	User experience & usability hueristics Case Study: heuristic evaluations of the user interface in telehealth		*Ch 17 Handout*
15	April 17	Accidents, Human Error, and Safety Culture High Reliability Organization		*Handout*
16	April 24	New technology integration amd Human and organizational factors of complex technological systems	*Due: Peer evaluations (4/27)* *Due: Course evaluation (4/27)* *Due: Research Paper (4/27)*	
Tuesday, May 9		Final Exam (2-4 pm[3]) - Mandated by USC Schedule		

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[2] Schedule may be revised to accommodate the content and pace of the class learning process. Due dates and case studies are subject to change.
[3] **Confirm the time and date of the exam on the USC website.**

Research Term Paper

Each student will write a research paper related to the topics covered in the class. Alternative and/or sample topics will be discussed during the class sessions. In this paper, the students will investigate and research a topic of their interest based on the materials covered in the class.

Term Paper Proposal: The students will submit a one-page proposal for the term paper that includes the topics of the research and the problems statement. The students will give a 2-minute presentation about their project in the class where they will receive feedback from the instructors and their peers.

1st Progress Report: The students will submit a two-page progress report that includes the research question, brief description of their findings and the list of references on the topic of their research.

Final Term Paper: The term paper should include all the steps that the students have taken to define the problem, literature review, analysis and discussion of the results and suggest recommendation (if applicable). For each term paper the following standard for contents are expected.

Section	Grade
Abstract	10
Introduction	15
Literature review	25
Analysis / discussion	25
Conclusion	15
References	10

<u>Netiquette Rules for Class</u>

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior.

- Above all, show respect to your peers and the instructor.

- Respect the opinions of others, regardless of how much you disagree.

- If you are writing an email or discussion post in anger, the content of your text will probably come off as disrespectful. Give yourself time to calm down and show respect.

- Reflect kindness and concern for your colleagues, you never know when someone else is having the worst day of their life.

- Allow others to save face. When possible, allow others the option of coming to the same conclusion, rather than pushing an opinion or answer on them. Instead of saying, "That's not right, it should be purple," consider saying this instead, "Would purple be a better color in this situation?"

- Address your instructor with their full title (e.g. Professor or Dr.) unless they explicitly tell you otherwise.

- Let others know how you would like to be addressed and address others as they would like to be addressed.

- Limit your use of the exclamation point.

- Avoid using all caps. IT IS COMMONLY INTERPRETED AS YELLING.

- Humor is difficult to interpret in text-based communication. Consider avoiding it in professional and academic communication.

- Check your spelling and grammar before hitting send or submit. This is an academic community and part of being professional is checking and double-checking your work.

- Use professional language and avoid using social media language and characters (i.e. don't use slang, text shortcuts, such as "u" instead of "you," emojis, emoticons).

- Use appropriate fonts.

- Use appropriate font-size: 12 font for papers (you can use 10 for tables); 11 or 12 in emails or discussion board posts.

- In emails, be brief. After greetings, but the most important point in the first sentence. Do not make the reader get halfway (or all the way) through the email before you present the reason for the email.

- In the discussion board, expand on your thoughts. Explain why you agree with them or why you think it's a great post.

- Give details to your discussion post. What was your source and what pages were you looking at?

A more comprehensive list of communication norms is posted on the course page on Blackboard.

Participation Ruberic

Excellent Performance	Fair / Average Performance	Unacceptable Performance
• Initiates information relative to topics discussed • Accurately exhibits knowledge of assignment content • Clarifies points that others may not understand • Shares personal experiences or opinions related to the topic • Offers relevant/succinct input to class • Actively participates in labs and class exercises • Demonstrates ability to apply, analyze, evaluate & synthesize course material. • Demonstrates willingness to attempt to answer unpopular questions • Builds on other students' contributions	• Participates in group discussions when asked • Demonstrates knowledge of course material • Offers clear, concise, "good" information on class assignments • Offers input, but tends to reiterate the intuitive • Attends class regularly	• Fails to participate even when specifically asked • Gives no input to discussions • Does not demonstrate knowledge of the readings • Shows up to class: does nothing • Distracts group/class • Irrelevant discussion

Statement on Academic Conduct and Support Systems:

Academic Integrity: The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity's website, and university policies on Research and Scholarship Misconduct. Please ask your instructor if you are unsure what constitutes

unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations: USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - 988 for both calls and text messages – 24/7 on call
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL) – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - *(213) 740-0411*
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - *(213) 740-2101*
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - *UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - *UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call*
Non-emergency assistance or information.

Office of the Ombuds - *(213) 821-9556 (UPC) / (323-442-0382 (HSC)*
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - *(323) 442-2850 or* otfp@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.