University of Southern California
ISE 370L – Human Factors in Work Design
Lectures, TTH 5-6:20 pm – KAP 147
Labs, Wednesday 5-7:20 pm – SAL 126

Instructor: Yalda Khashe
Office Hours: Daniel J. Epstein Department of Industrial &
TTh 4-4:50pm or by appointment Systems Engineering
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Email: khashe@usc.edu

Teaching Assistant: Ghena Alhanaee
Office Hours: Office: TBD
TBD
Email: alhanaee@usc.edu

Catalog Course Description:
ISE 370L Human Factors in Work Design: Physiological systems and psychological
characteristics; ergonomics; anthropometry; effects of the physical environment on
humans; occupational safety and health; work methods.

Text:
For work and time studies, chapters will be provided from:

Course Expectations and Policies:
Course Expectations: 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.

Attendance Policy: It is expected that students will attend class regularly and
participate in the class discussion throughout the semester.

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.

Academic Integrity: USC seeks to maintain an optimal learning environment. General
Principles of academic honesty include the concept of respect for the
intellectual property of others, the expectation that individual work will be
submitted unless otherwise allowed by an instructor, and the obligations both
to protect one’s own academic work from misuse by others as well as to avoid
using another’s work as one’s own. All students are expected to understand and
abide by these principles. SCampus, The Student Guidebook, contains
the Student Conduct Code in Section 11.00, while the recommended sanctions are
located in Appendix A: http://usc.edu/dept/publications/SCAMPUS/gov/
Students will be referred to the Office of Student Judicial Affairs and
Community Standards for further review should there be any suspicion of academic dishonesty. The Review process can be found at: http://usc.edu/student-affairs/SJACS/ Information on intellectual property at USC is available at: http://usc.edu/academe/acsen/issues/ipr/index.html.

**Classroom Access:** Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213)740-0776.

**Electronic Device Policy:** You are allowed to use electronic devices to access your text, retrieve information, and take notes. However, you are not allowed to use social media and the like during class.

**Statement for Students with Disabilities:** Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to your course instructor (or TA) as early in the semester as possible. DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Website and contact information for DSP http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html (213)740-0776(Phone), (213)740-6948(TDD only), (213)740-8216(FAX), ability@usc.edu

**Grading procedure and Assessment Methods:**

I. Letter Grades Table:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>94-100</td>
</tr>
<tr>
<td>A-</td>
<td>89-94</td>
</tr>
<tr>
<td>B+</td>
<td>85-89</td>
</tr>
<tr>
<td>B</td>
<td>80-85</td>
</tr>
<tr>
<td>B-</td>
<td>77-80</td>
</tr>
<tr>
<td>C+</td>
<td>73-77</td>
</tr>
<tr>
<td>C</td>
<td>68-73</td>
</tr>
<tr>
<td>C-</td>
<td>65-68</td>
</tr>
<tr>
<td>D+</td>
<td>60-65</td>
</tr>
<tr>
<td>D</td>
<td>56-60*</td>
</tr>
</tbody>
</table>

* Grades less than 56: F

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

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

- Exam 1 .............................................. 15%
- Exam 2 .............................................. 15%
- Exam 3 (Final) .................................... 15%
- Design Project .................................... 20%
- Research Paper ................................. 10%
- Lab Reports ..................................... 15%
- Participation ................................... 10%
* Subjective grading by the Instructor based on the student’s participation in class and lab discussions and interaction with TA/Instructor inside and outside the classroom/lab.

**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/lab. You are encouraged to submit your assignments online. Electronic submission must be in MS Office formats. Your presentations can be of any format you deem appropriate.

**Study Hints:**
- Do not hesitate to ask questions in person during office hours or via email.
- Read the text before you come to each class meeting.
- Participate in class discussions.

**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 **mandatory**.

**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.

**Research Paper**
Each student should write an individual 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 and discuss the application of the tools and techniques discussed in the class to the topic.

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

Due to administrative processes, this syllabus is subject to change. It is the student’s responsibility to verify with the instructor regarding any updates.
# Tentative Course Outline¹:

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topics</th>
<th>Reading Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Jan 7 Introduction to Human Factors and Ergonomics</td>
<td>CH 1</td>
</tr>
<tr>
<td>02</td>
<td>Jan 14 Cost-Benefit Analysis of Improvements in Human Factors Design</td>
<td>CH 2</td>
</tr>
<tr>
<td>03</td>
<td>Jan 21 Anthropometry in Workstation Design Work Posture</td>
<td>CH 8 &amp; 9</td>
</tr>
</tbody>
</table>
| 04      | Jan 28 Manual Materials Handling  
  *January 31 - Research Paper Proposal Due* | CH 10               |
| 05      | Feb 4 Repetitive Motion Injury and Design of Hand Tools                | CH 11               |
| 06      | Feb 11 Introduction to Work Measurement and Time Study  
  *February 14 – Exam 1* | ILO Ch 18           |
| 07      | Feb 18 Time Study: Rating and Standard Time                           | ILO Ch 18 & 20      |
| 08      | Feb 25 Predetermined Time Study                                        | ILO Ch 20 & 25      |
| 09      | March 4 Examples of Time Study  
  *March 7 – Research Paper Progress Report Due* | ILO Ch 26           |
| 10      | March 11 *Spring Recess*                                              |                     |
| 11      | March 18 Vision and Illumination Design  
  *March 21 – Exam 2* | CH 4                |
| 12      | March 25 Human Information Processing                                 | CH 5                |
| 13      | April 1 Design of Human Computer Interaction                          | CH 7                |
| 14      | April 8 Training, Skills and Cognitive Task Analysis  
  Accidents, Human Error and Safety | CH 15 & 16          |
| 15      | April 15 Human Factors of Complex Technological Systems               | Handouts            |
| 16      | April 22 Safety Culture, High Reliability Organization  
  *April 25 – Research Paper Due* | Handouts            |

*Thursday, May 2*  
**Final Exam (2-4 pm) - Mandated by USC Schedule**

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¹ Schedule may be revised to accommodate the content and pace of the class learning process.