

# INDE 549/ENV H 549 A Sp 17: Human Factors In Engineering Design

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## Instructor

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Office hours: Wednesdays: 11:00 am to noon (or by appointment)

G10A Mechanical Engineering Building (MEB)

Seattle, WA 98195

## Course Information

Meeting times: 2:30 to 3:40 TuTh

Meeting room: MEB 235

Required reading materials:

1. *An Introduction to Human Factors Engineering, Beta Version*, available on [Amazon.com](https://www.amazon.com/Introduction-Human-Factors-Engineering-Version/dp/1542710790/ref=as_li_ss_tl?ie=UTF8&qid=1485813042&sr=8-7&keywords=%22%22An+Introduction+to+Human+Factors+Engineering%22&linkCode=s11&tag=jodle-20&linkId=8ebb0a70080909c3d3e9f193b14149ddhttp://) ([https://www.amazon.com/Introduction-Human-Factors-Engineering-Version/dp/1542710790/ref=as\\_li\\_ss\\_tl?ie=UTF8&qid=1485813042&sr=8-7&keywords=%22%22An+Introduction+to+Human+Factors+Engineering%22&linkCode=s11&tag=jodle-20&linkId=8ebb0a70080909c3d3e9f193b14149ddhttp://](https://www.amazon.com/Introduction-Human-Factors-Engineering-Version/dp/1542710790/ref=as_li_ss_tl?ie=UTF8&qid=1485813042&sr=8-7&keywords=%22%22An+Introduction+to+Human+Factors+Engineering%22&linkCode=s11&tag=jodle-20&linkId=8ebb0a70080909c3d3e9f193b14149ddhttp://)).
2. Journal article readings (on canvas)

## Objectives of the Course

The objective of this course is to provide students with research methods that are observed in the area of human factors. The class is designed to provide you a better understanding of what is required to design a product or service to match the cognitive capabilities and limitations of the user population. The emphasis will be on safety, productivity, functionality, satisfaction, and usability. The class will review weekly journal articles on human factors research methods and design issues.

**Weekly Quizzes:** Students are expected to read the material before class. Weekly quizzes will be administered on canvas. There will be a pre and post quiz. Students are expected to take the pre-quiz before class each week. The post-quizzes for the first half can be taken anytime before the midterm. The post-quizzes for the second half can be taken anytime before the last class. The quizzes will be focused on the class readings.

**Weekly readings:** Each week, students will write a one page summary of the weekly readings, that DOES NOT reiterate the abstract, but presents the pros OR cons of the paper. Each student will have the opportunity to present his or her view on the selected reading for that week. The summary is to UPLOADED BEFORE the beginning of the class on the specified due date. Points WILL BE TAKEN off for grammatical/spelling errors. The remaining part of lecture will be discussion format where all are expected to participate.

**Final project and presentations:** A final group project will be prepared. Each group will consist of 4 people with each group presenting on the last day of the class to the undergraduate class. The instructions are included on the course website. Your grade for the project will be weighted based on the individual peer evaluation.

## Class Participation:

You are expected to participate in class. All course material (included HW and project assignments) is on canvas. 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: attentiveness and contributions to class discussions, and student responses to periodic in-class requests to clarify and identify confusing topics, potential quizzes, and exam questions.

## Grading

Quizzes (Pre and Post Quizzes)	10
Write-ups of readings	10
Class discussions/participation	10
Take-home midterm	20
Final Project	
Part I	5
Part II	10
Part III	15
Presentation	5
Final Paper	15
Total	100

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

## 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.engr.washington.edu/mycoe/am/ampolicy> (<http://www.engr.washington.edu/mycoe/am/ampolicy>)

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 3 credit hours, the standard out-of-class preparation is 6-9 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.

## Course Summary:


Date	Details	
Tue Mar 28, 2017	 <a href="https://canvas.uw.edu/calendar?event_id=1002741&amp;include_contexts=course_1139047">Course Overview &amp; Chapter 1 (https://canvas.uw.edu/calendar?event_id=1002741&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662369">Quiz 1 Pre-Lecture: Ch 1 &amp; 2 (https://canvas.uw.edu/courses/1139047/assignments/3662369)</a>	due by 2pm

Thu Mar 30, 2017	 <a href="https://canvas.uw.edu/calendar?event_id=1002740&amp;include_contexts=course_1139047">Ch 2 Design (https://canvas.uw.edu/calendar?event_id=1002740&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Tue Apr 4, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662377">Paper 1: Applied CTA (Militello and Hutton) (https://canvas.uw.edu/courses/1139047/assignments/3662377)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002742&amp;include_contexts=course_1139047">Ch 2 Design (https://canvas.uw.edu/calendar?event_id=1002742&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Thu Apr 6, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662376">Quiz 2 Pre-Lecture: Ch 3 (https://canvas.uw.edu/courses/1139047/assignments/3662376)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002738&amp;include_contexts=course_1139047">Ch 3 Evaluation (https://canvas.uw.edu/calendar?event_id=1002738&amp;include_contexts=course_1139047)</a>	2:30pm
Tue Apr 11, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662378">Paper 2. Evaluation of Subjective Mental Workload: (https://canvas.uw.edu/courses/1139047/assignments/3662378)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002739&amp;include_contexts=course_1139047">Ch 3 Evaluation (https://canvas.uw.edu/calendar?event_id=1002739&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Thu Apr 13, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662375">Quiz 3 Pre-Lecture: Ch 4 (https://canvas.uw.edu/courses/1139047/assignments/3662375)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002737&amp;include_contexts=course_1139047">Ch 4 Visual (https://canvas.uw.edu/calendar?event_id=1002737&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Tue Apr 18, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662379">Paper 3. Modeling the Control of Attention in Visual Workspaces (https://canvas.uw.edu/courses/1139047/assignments/3662379)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002736&amp;include_contexts=course_1139047">Ch 4 Visual (https://canvas.uw.edu/calendar?event_id=1002736&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Thu Apr 20, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662364">Quiz 4 Pre-Lecture: Ch 5 (https://canvas.uw.edu/courses/1139047/assignments/3662364)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002735&amp;include_contexts=course_1139047">Ch 5 Auditory (https://canvas.uw.edu/calendar?event_id=1002735&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662387">Group Project: Part I CTA (https://canvas.uw.edu/courses/1139047/assignments/3662387)</a>	due by 11pm
Tue Apr 25, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662380">Paper 4. The differential effect of vibrotactile and auditory cues on visual spatial attention (https://canvas.uw.edu/courses/1139047/assignments/3662380)</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1006429&amp;include_contexts=course_1139047">Ch 5 Auditory (https://canvas.uw.edu/calendar?event_id=1006429&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
Thu Apr 27, 2017	 <a href="https://canvas.uw.edu/calendar?event_id=1002733&amp;include_contexts=course_1139047">Linda is out of town: Please meet about group project (https://canvas.uw.edu/calendar?event_id=1002733&amp;include_contexts=course_1139047)</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662381">Paper 5. Human error: models and management (Reason) (https://canvas.uw.edu/courses/1139047/assignments/3662381)</a>	due by 2pm

Tue May 2, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662365">Quiz 5 Pre-Lecture: Ch 6</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662365">https://canvas.uw.edu/courses/1139047/assignments/3662365</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002732&amp;include_contexts=course_1139047">Ch 6 Cognition</a> <a href="https://canvas.uw.edu/calendar?event_id=1002732&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002732&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662386">IRB Certification</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662386">https://canvas.uw.edu/courses/1139047/assignments/3662386</a>	due by 11:59pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662373">Quiz 1 Post-Lecture: Ch 1 &amp; 2</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662373">https://canvas.uw.edu/courses/1139047/assignments/3662373</a>	due by 2pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662372">Quiz 2 Post Lecture: Ch 3</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662372">https://canvas.uw.edu/courses/1139047/assignments/3662372</a>	due by 2pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662368">Quiz 3 Post-Lecture: Ch 4</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662368">https://canvas.uw.edu/courses/1139047/assignments/3662368</a>	due by 2pm
Thu May 4, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662371">Quiz 4 Post-Lecture: Ch 5</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662371">https://canvas.uw.edu/courses/1139047/assignments/3662371</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002731&amp;include_contexts=course_1139047">Ch 6 Cognition</a> <a href="https://canvas.uw.edu/calendar?event_id=1002731&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002731&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1011084&amp;include_contexts=course_1139047">Hand out Take-Home Midterm</a> <a href="https://canvas.uw.edu/calendar?event_id=1011084&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1011084&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662388">Group Project: Part II Design Requirements</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662388">https://canvas.uw.edu/courses/1139047/assignments/3662388</a>	due by 11pm
Tue May 9, 2017	 <a href="https://canvas.uw.edu/calendar?event_id=1002730&amp;include_contexts=course_1139047">Ch 7 Decision Making</a> <a href="https://canvas.uw.edu/calendar?event_id=1002730&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002730&amp;include_contexts=course_1139047</a>	2:30am to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662363">Quiz 6 Pre-Lecture: Ch 7</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662363">https://canvas.uw.edu/courses/1139047/assignments/3662363</a>	due by 2pm
Thu May 11, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662391">Take Home Midterm (due on May 11 by 2 pm)</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662391">https://canvas.uw.edu/courses/1139047/assignments/3662391</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002729&amp;include_contexts=course_1139047">Ch 7 Decision Making</a> <a href="https://canvas.uw.edu/calendar?event_id=1002729&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002729&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
Tue May 16, 2017	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662382">Paper 6. Conditions for Intuitive Expertise: A failure to disagree (Kahneman &amp; Klein)</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662382">https://canvas.uw.edu/courses/1139047/assignments/3662382</a>	due by 2pm
	 <a href="https://canvas.uw.edu/calendar?event_id=1002728&amp;include_contexts=course_1139047">Ch 8 Displays</a> <a href="https://canvas.uw.edu/calendar?event_id=1002728&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002728&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662367">Quiz 7 Pre-Lecture: Ch 8</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662367">https://canvas.uw.edu/courses/1139047/assignments/3662367</a>	due by 2pm
Thu May 18, 2017	 <a href="https://canvas.uw.edu/calendar?event_id=1002727&amp;include_contexts=course_1139047">Ch 8 Displays</a> <a href="https://canvas.uw.edu/calendar?event_id=1002727&amp;include_contexts=course_1139047">https://canvas.uw.edu/calendar?event_id=1002727&amp;include_contexts=course_1139047</a>	2:30pm to 3:50pm
	 <a href="https://canvas.uw.edu/courses/1139047/assignments/3662389">Group Project, Part III Construct Prototype</a> <a href="https://canvas.uw.edu/courses/1139047/assignments/3662389">https://canvas.uw.edu/courses/1139047/assignments/3662389</a>	due by 11pm
Tue May 23, 2017	 <a href="https://canvas.uw.edu/calendar?">Ch 9 Controls</a> <a href="https://canvas.uw.edu/calendar?">https://canvas.uw.edu/calendar?</a>	

[event\\_id=1002726&include\\_contexts=course\\_1139047](https://canvas.uw.edu/calendar?event_id=1002726&include_contexts=course_1139047))

2:30pm to 3:50pm

 **Ch 9 Controls** ([https://canvas.uw.edu/calendar?event\\_id=1002725&include\\_contexts=course\\_1139047](https://canvas.uw.edu/calendar?event_id=1002725&include_contexts=course_1139047))

2:30am to 3:50am

Thu May 25, 2017

 **Paper 7: There is more to monitoring a nuclear power plant than meets the eye** (<https://canvas.uw.edu/courses/1139047/assignments/3662383>)

due by 2pm

 **Quiz 8 Pre-Lecture: Ch 9**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662361>)

due by 2pm

Tue May 30, 2017

 **Ch 10 HCI** ([https://canvas.uw.edu/calendar?event\\_id=1002724&include\\_contexts=course\\_1139047](https://canvas.uw.edu/calendar?event_id=1002724&include_contexts=course_1139047))

2:30am to 3:50am

Thu Jun 1, 2017

 **Final Presentation w INDE 351**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662385>)

due by 2pm

Fri Jun 2, 2017

 **Quiz 5 Post-Lecture: Ch 6**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662362>)

due by 2pm

 **Quiz 6 Post-Lecture: Ch 7**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662370>)

due by 2pm

 **Quiz 7 Post-Lecture: Ch 8**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662374>)

due by 2pm

 **Quiz 8 Post-Lecture: Ch 9**  
(<https://canvas.uw.edu/courses/1139047/assignments/3662366>)

due by 2pm

Tue Jun 6, 2017

 **Final Paper** (<https://canvas.uw.edu/courses/1139047/assignments/3662384>)

due by 6:30pm

 **Peer Evaluation** (<https://canvas.uw.edu/courses/1139047/assignments/3662390>)

due by 6:30pm