

San José State University
Department of Psychology
Psyc 273, Seminar in Human Factors, Section 01, Fall, 2024

Course and Contact Information

Instructor: Anthony D. Andre, Ph.D., CPE
Office Location: Virtual, via Zoom
Telephone: (408) 966-9355
Email: 800usability@gmail.com
Office Hours: By Appointment
Class Days/Time: Mondays, 3:00pm-5:40pm
Class Format: Hybrid (mostly online-Zoom)
Classroom: DMH 353

Course Description

Data and theory of sensory and cognitive psychology and their application to the design of systems used by humans. This course is designed to provide you with a survey of theory, research, and application in human factors, as applied to the design of consumer products, software applications and complex systems. A major focus of this course is on ways to design new technology that is easy to learn and use by incorporation of usability principles and guidelines. The textbook and lectures will be the primary sources of information in the course, but a good deal of understanding must also come from each student's thoughts and insights on the everyday systems and products with which they interact. The course primarily reviews the “information processing” approach to Human Factors—referred to in the textbook as Engineering Psychology. We cover the human information processing system and how to apply our understanding of this system to the presentation of information and overall user experience design of various product and systems. In addition, we will discuss contemporary human factors issues such as automation, IoT, virtual reality and more. Throughout the course students will be exposed to real-world examples of universal usability principles across a variety of products and domains.

Course Format

In person predominately, with some classes held via Zoom. Students must also have access to Canvas.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

- Apply an understanding of the capabilities and limitations of human information processing to user interface and user experience design.
- Students will learn several universal usability principles and be able to apply these principles toward evaluating and designing products and systems for ease of use.

- Students will learn how to analyze the usability of a product and how to write up this analysis as a usability heuristic evaluation report.

Required Texts/Readings

Textbook

Engineering Psychology & Human Performance, 4th or 5th Edition. [Christopher D. Wickens, Justin G. Hollands, Raja Parasuraman, Simon Banbury].

Course Requirements and Assignments

Students will conduct one large-scale usability evaluation project, complete several small assignments, and take a final exam. The project requires students to conduct a human factors/engineering psychology evaluation (or audit) of an assigned product and to produce a written report.

“Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Final Examination or Evaluation

A final exam will be administered during final weeks. The exam will be given through Canvas, open notes.

Assignment Grading Breakdown

Assignment	Percentage of Final Grade
Usability evaluation project and report	50%
Mid-Term exam	20%
Final exam	25%
Class participation and contributions	5%

University Policies

Per [University Policy S16-9](#), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on [Syllabus Information web page](#) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>). Make sure to visit this page to review and be aware of these university policies and resources.

Participation

Participation in class discussions, breakout rooms and exercises is very important. If you are not participating enough in the class discussions, or asking questions, I will let you know.

Late work

- All work must be turned in on time. All assignments will be penalized 20% for every day they are late.
- There are no makeup exams, except for unplanned emergencies.

Disabilities

- Please inform me of any known disabilities or special needs/considerations at the start of the semester and prior to September 1, 2021. Please don't hesitate to discuss any form of need or accommodation with me.
- If a special need or accommodation emerges during the semester, please inform me immediately.

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COURSE SCHEDULE
(subject to modification)

DATE	TOPIC	READINGS/MATERIAL DUE
8/26	Intro to Engineering Psychology	Chapters 1-2
9/2	<i>NO CLASS Labor DAY</i>	
9/9	Attention in Perception -Assign Major Evaluation Project Topic	Chapter 3
9/16	Spatial Displays / Spatial Cognition	Chapter 4-5
9/23	Navigation Usability Evaluation: Process and Techniques	Chapter 5
9/30	Software and Web Usability Principles	
10/7	Language and Communications	Chapter 6
10/14	Memory and Training	Chapter 7
10/21	Mid-Term Exam	via Canvas
10/28	Attention Usability Evaluation Reporting - Take Home Assignment #2	
11/4	Human Behavior/Habits/Fallibility	
11/11	No Class Holiday	
11/18	Decision Making /Human Error/Selection of Action	Chapter 8, 9
11/25	Multitasking/Divided Attention	Chapter 10
12/2	Mental Workload / Automation	Chapter 11, 12
12/9	Final Exam Review	Final Report Due
12/17	Final Exam 12:15-2:30PM	Via Canvas