Engineering Psychology

Course prefix: PSYC

Course number: 2270

Section: B

CRN (you may add up to five):
31035

Instructor First Name: Zachary

Instructor Last Name: Tidler

Semester: Spring

Academic year: 2026

Course description:

Engineering psychology uses scientific knowledge about the perceptual, cognitive, and behavioral capabilities of humans to specify the design and use of human-machine systems (such as equipment, environments, tasks, jobs, and systems) for productive, safe, comfortable, and effective human use. In this course, you'll learn about the capabilities and limitations of humans and how this knowledge informs engineering design principles of displays, controls, physical environments, human error, and automation. You'll also get the opportunity to use what you're learning through an applied project.

Course learning outcomes:

By the end of this course, students should be able to:

1. Describe humans as an information processor in areas including sensation & perception, attention, memory, decision-making, and workload.
2. Describe humans as a physical engine in areas including motor control, anthropometry, and biomechanics.
3. Apply your knowledge of basic human capabilities & limitations to specific applied areas including display & control design, workstation design, situation awareness, human error, and automation.
4. Gather and assess end-user requirements using analysis and design methodologies such as surveys, task analysis, heuristic evaluation, and usability testing.
5. Evaluate the design of human-machine systems using performance and safety criteria and provide recommendations for improvements based on your professional judgment
   and knowledge of human capabilities & limitations.

6. Practice effective teamwork and team management, including modeling behaviors of inclusion and ethics, and using leadership skills to foster problem solving, team communication, conflict management, consensus building, and idea generation.

Required course materials:

None

Grading policy:

Evaluation of course performance is based on weekly bad design scavenger hunt assignments,
key-term drills, and a final individual project. The weighting for each component is listed below.

Assessment Weights:
In-Class Stuff 20%
Key-Term Drills 10%
Homework Assignment 10%
Midterm Exam 10%
Final Exam 10%
Term Project 40%

Grading Scale
Your final grade will be assigned as a letter grade according to the following scale:
A 90-100%
B 80-89%
C 70-79%
D 60-69%
F 0-59%

Description of Graded Components:
Brief descriptions of each graded component are listed below. The full set of requirements and instructions, for all assessments will be provided on Canvas.
In-Class Stuff (Reflections): These will just be brief reflection questions that we'll come up
sporadically during class. We'll submit these through Canvas.
In-Class Stuff (Activities): For some of our class meetings we will have activities/assignments
that require submissions.
Key-Term Drills: I will be releasing Canvas quizzes that focus on key terms from each of our
lessons. These drills will consist of "rapid-fire" quizzes (i.e., you might have 2 minutes to

answer 5 questions). You will have unlimited attempts on these quizzes and your AVERAGE score will be what goes into the gradebook.

Homework Assignments: I will try to keep these few-and-far between, but I will be sporadically assigning homework assignments.

Exams: The midterm and the final exam will consist of EXACTLY the same questions as the ones you will encounter on the key-term drills. The midterm exam will consist of a sampling of questions from key-term drills that were assigned prior to the midterm. The final exam will consist of a sampling of the questions from the entire semester's key-term drills.

Term Project: For the term project, you (and your teammates) will be identifying a real-world
software-design issue that violates some engineering psychology principles. You'll will eventually be submitting a prototype "fix" for the issue but prior to that you will be submitting a series of assignments that incrementally build towards the prototype.

Late Submission Policy: For the in-class activity assignments you will be able to submit two
"freebie" late-submissions without penalty up to 5 business days from the time of the original
due date. The idea here is basically that you can miss up to two days of class without worrying that you've missed any graded assignments. You don't need to tell communicate with the course instructor or course TA about missing/making up these two "freebie" assignments. You can just submit them, no questions asked. For that reason, we won't accept
any other late submissions beyond these two freebies (unless you have an institute-approved
absence letter). Please note that the notes from the Dean of Students/Office of Student Life are not the same thing as institute-approved absences. Institute-approved absences are specifically related to those situations when a student must miss a class because of official GT
business (e.g., competing in a varsity sporting event).

Attendance policy:

Attendance is expected and encouraged for all class meetings (i.e., all lectures) but will not directly be graded. Attendance will, however, be indirectly graded through assignments and/or graded activities that may be missed due to absences. The course late submission policy is as follows:

 For the in-class activity assignments you will be able to submit two
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are not the same thing as institute-approved absences. Institute-approved absences are
specifically related to those situations when a student must miss a class because of official GT
business (e.g., competing in a varsity sporting event).

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work
submitted must be original and properly cited. Plagiarism, cheating, or any form of
academic dishonesty will result in immediate consequences as outlined in the university's
academic integrity policy.

Core IMPACTS statement(s) (if applicable):

Core Impacts Statement
This is a Core IMPACTS course that is part of the Social Sciences area.
Core IMPACTS refers to the core curriculum, which provides students with essential
knowledge in foundational academic areas. This course will help master course content, and
support students' broad academic and career goals.
This course should direct students toward a broad Orienting Question:

- How do I understand human experiences and connections?
  Completion of this course should enable students to meet the following Learning
  Outcome:
- Students will effectively analyze the complexity of human behavior, and how
  historical, economic, political, social or geographic relationships develop, persist or
  change.

Course content, activities and exercises in this course should help students develop the
following Career-Ready Competencies:

- Intercultural Competence
- Perspective-Taking
- Persuasion