

San José State University
Department of Psychology
Psyc 173, Human Factors, Section 80, Spring 2026

Instructor: Patrick F. Cravalho, PhD
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Office Location: Dudley Moorhead Hall, Room 232
Student Drop-in Hours: In-person AND Zoom on Tuesdays & Thursdays from 5pm to 6pm
(Zoom link: <https://sjsu.zoom.us/j/82477824064>)
OR email me to set up a Zoom appointment on a Monday or Wednesday.
NOTE: for drop-in hours or appointments on Zoom, you need to use your SJSU Zoom account to join the meeting.
Class Format: Asynchronous Online (i.e., no Zoom Meetings, instead you work through the material independently)

Course Description

Human psychology and physiological characteristics and methods for taking these into account in designs and development of human-machine systems. Current human factor engineering efforts in lab, design process and operational environment.

Course Goal

The goal of this course is to provide you with the knowledge and practice to understand how applied psychological research informs how different professions approach areas of human-technology interactions.

Course Learning Outcomes (CLO)

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

- CLO 1 – Create a personalized schedule to help you succeed in this course.
- CLO 2 – Competently use human factors (HF) terminology to describe human-technology interactions.
- CLO 3 – Apply HF research methods to human-technology system design, evaluation, and training.
- CLO 4 – Describe how human-technology systems are affected by human capabilities & limitations.

Program Learning Outcomes (PLO)

Upon successful completion of the psychology major requirements... **(Psyc 173 meets each PLO)**

1. *PLO1 – Knowledge Base of Psychology* – Students will be able to identify, describe, and communicate the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
2. *PLO2 – Research Methods in Psychology* – Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.

3. *PLO3 – Critical Thinking Skills in Psychology* – Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
4. *PLO4 – Application of Psychology* – Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
5. *PLO5 – Values in Psychology* – Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Materials

1. Lee, J. D., Wickens, C. D., Liu, Y., & Boyle, L. N. (2017). *Designing for people: An introduction to human factors engineering*. CreateSpace. (ISBN: 9781539808008)
2. Laptop/desktop/tablet computer (w/keyboard) and Internet access. SJSU has a free equipment loan program for students: <https://www.sjsu.edu/learnanywhere/equipment/index.php>.
3. Access to Google documents, sheets, & slides or to Microsoft Word, Excel, & PowerPoint or to Apple Pages, Numbers, & Keynote. **NOTE:** SJSU students can utilize Microsoft Word, Excel, and PowerPoint online for free (see <https://www.sjsu.edu/it/services/collaboration/software/instructions.php>).

Library Liaison: Christa Bailey (christa.bailey@sjsu.edu). Libguide: <http://libguides.sjsu.edu/psychology>.

Email Communication

Please send all email communications to patrick.cravalho@sjsu.edu and include “Psyc 173” in the subject line. **Please do not message me through Canvas.** Also, please write separate emails for communicating different topics, rather than writing about multiple topics in one email. Following these guidelines will ensure I’m able to read and reply to your message(s) as quickly as possible.

Checking your SJSU email regularly

If I need to contact you, but I have not received any prior email communication from another one of your email accounts, I will contact you via your sjsu.edu email address. Therefore, please regularly check your sjsu.edu email address or have it forwarded to the email that you do check regularly.

Checking Canvas regularly

I will regularly post materials, information, etc. on our Psyc 173 Canvas webpage. Please regularly check our Psyc 173 Canvas webpage. You will submit all of your assignments through our Canvas page. If you have difficulties with Canvas, *first* contact SJSU technical support for Canvas (see contact information below) to get their help and *then* contact the instructor to explain your situation.

Email: ecampus@sjsu.edu **Phone:** (408) 924-2337 **Webpage:** <https://www.sjsu.edu/ecampus/support/>

Student Athletes

If you are a student athlete, please inform me at the beginning of the semester of any team obligations. If there are any conflicts between your obligations and class participation/assignments, we may need to figure out alternative arrangements for you to participate or complete an assignment.

Diversity Statement

I am committed to supporting the academic success and well-being of every student. Our classroom will be an inclusive and welcoming space. We will create a safe and diversity-sensitive learning environment that respects the rights, dignity, and welfare of all students, faculty, and staff. Diversity means the fair representation of all groups, the inclusion of minority perspectives and voices, and appreciation of different cultural and socioeconomic group practices. We will aspire to foster and maintain an atmosphere that is free from discrimination, harassment, exploitation, or intimidation. Below are links to a few related campus resources.

LGBTQ+ students: <https://www.sjsu.edu/pride/>

Students who are parents: <https://www.sjsu.edu/sjsucares/resources/parenting-students.php>

Student Involvement (e.g., student organizations, resources, etc.): <https://www.sjsu.edu/getinvolved/>

Undocumented students: <https://sjsu.edu/undocuspartan/>

Asynchronous Online Classroom Protocol

You will be working independently, but your attention is expected when you are reading/watching materials, and when you are working on assignments, for this course. I suggest that you find a quiet place to sit, that is free of distractions, when you are attending to your online coursework. If you need help with your online coursework, please attend your instructor's drop-in hours on Zoom (Tuesdays & Thursdays from 5pm to 6pm, link is on the first page of syllabus). If you can't make the drop-in hours, please contact your instructor to schedule a meeting. Further, to be a part of this class, you must agree to certain principles in regard to how your behavior affects the group. We will be polite & show each other respect, act with academic & professional integrity, support one another, & use our human factors & psychology knowledge to contribute to social justice.

Student Technology Resources & Resources for Online Learning

Computer labs and other resources for student use are available, see links: <http://www.sjsu.edu/at/asc/> and <https://library.sjsu.edu/student-computing-services/student-computing-services>. SJSU has consolidated its online learning resources into a single website: <https://www.sjsu.edu/learnanywhere/>

Course Requirements and Assignments

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 practice. Other course structures will have equivalent workload expectations as described in the syllabus. More details about student workload can be found in [University Policy S16-9](#).

Engagement Week Assignments (covers CLO 1)

During weeks 1 & 2 of the course, you will be expected to complete certain tasks to ensure you're ready to engage in our asynchronous online course. Some of these tasks are ungraded, namely getting acquainted with our course Canvas page, read the notes and watch the videos in the Weeks 1 & 2 modules, and reading chapter 1 of the textbook. Two of these tasks are graded and are worth a total of 50 points, namely introducing yourself on our Canvas discussion board (10 points) and submitting your personalized schedule for the course (40 points).

Activity Assignments (covers CLOs 2/3/4)

You will complete ten activities designed to provide you with opportunities to apply human factors ideas and techniques. All activities will be graded based on a general rubric and some will also be graded with an activity specific rubric. These assignments are worth a total of 500 points (50 points each).

Reflection Assignments (covers CLOs 2/3/4)

You will respond to ten prompts (some with multiple questions) to provide you with opportunities to think critically about the course content and connect it to your life. All reflections are graded for completion (i.e., there are no “right answers”). Your responses *must* reflect your thinking, you *may not* use any AI or chatbots (e.g., ChatGPT) to write your responses. These assignments are worth a total of 100 points (10 points each).

Project Milestone Assignments (covers CLOs 2/3/4)

You will complete a human factors project based on a topic of your interest. To prepare for the final project, you will complete two milestone assignments. Each milestone assignment will be graded with milestone specific rubrics. These assignments are worth a total of 150 points (75 points each).

Final Project Assignment (covers CLOs 2/3/4)

Your final project flows from the milestone assignments and will be graded with a specific rubric. You will have the choice of the type of project you want to do (i.e., usability evaluation, workspace evaluation, or research proposal) & of the final deliverable (i.e., poster or video presentation). This assignment is worth 200 points.

Assignment Late Submission Policy (Engagement Week, Activities, Reflections, Project Milestones)

It is very important to stay up-to-date on the assignment due dates by following the schedule below. For each day an assignment is submitted past the due date, 10% will be deducted from your grade. For most of the assignments, on the 6th day past the due date, submissions will no longer be accepted (i.e., 5-day window for late work). There is no late submission window for the Final Project. Assignments are set to allow you two submissions, but only the most recent submission turned in before the deadline will be graded. Any submission that comes after another submission has been graded, will not be graded (i.e., no resubmissions are allowed).

Assignment Make-up Policy (Engagement Week, Activities, Reflections, Project Milestones)

If you have a legitimate reason for missing an assignment due date, you may be permitted to make up that assignment without the late submission penalty. However, you will need to contact me as early as you can to let me know your reason for missing the assignment, especially if you know you’ll need an extension ahead of the due date. Then we can figure out your timeline for making up the assignment. If you miss the assignment due to an unanticipated reason, please contact me within the first 24 hours after the assignment was due.

Artificial Intelligence (AI) Policy

This policy covers any generative AI tool (e.g., ChatGtP, Grammarly) used to produce text, artwork, graphics, video or audio. You are NOT allowed to use AI tools for quizzes, assignments or extra credit opportunities UNLESS given direct permission from your instructor to do so. You may use AI tools to help generate ideas, but note that the material generated by these programs may be inaccurate, incomplete, or otherwise problematic as

AI tool use may stifle your independent thinking and creativity. Please contact your instructor if you are unsure or have questions BEFORE using AI for this class. If after discussion with your instructor, AI is permitted to be used, you must indicate what part of the assignment was created by AI and what was created by you & no more than 20% of an assignment should be created with AI. Any AI tool use without the permission of the instructor will be counted as plagiarism. *AI policy was revised from policies by Sandy Fyfe and Holly Fernandez-Lynch.*

Extra Credit Opportunities

A total of 50 extra credit points (i.e., 5% of your final grade) may be added to your final point total if you take advantage of the following opportunities. ***These points must be earned and are being made available to encourage effective learning habits.***

Firstly, you have an opportunity to earn up to 30 points by creating a poster to present data collected from one of our activity assignments. Specifically, you'll be collecting quantitative and/or qualitative data as part of the Task Analysis, Metrics, Waldo, & Paper Prototype/Usability Testing assignments. You would then be expected to collect the same type of data from some additional users (i.e., between 3-4 people) and to then produce a conference style research poster to share your findings. You could earn 10 points for collecting the additional data and another 10 points for creating the poster. Then you could earn an additional 10 points for working with your instructor to submit and present your poster at the Spartan Psychological Association Research Conference (SPARC) held on campus this spring. If you are interested in this opportunity, you ***need*** to contact your instructor about it by Sunday (3/8). If you do not speak with your instructor about this opportunity by then, you are not eligible to earn any of the 30 points. ***This opportunities are meant to encourage you to gain additional practice with human factors data collection and to pursue academic experiences outside of the classroom.***

Secondly, you have a set of opportunities to earn 15 points for completing your three project assignments early. Specifically, you must submit each of these assignments two days early. For example, your **Project Milestone 1** is due by 11:59pm on Friday (4/17), so you must turn it in before 11:59pm on Wednesday (4/15) for it to count as two days early. If you submit both project milestone assignments by their early deadlines, you earn eight points (i.e., four points for each milestone assignment). You earn seven points for submitting the **Final Project Deliverable** by it's early deadline. These points are tiered if you do not submit all three early (e.g., if you submit only the final project deliverable early, you would receive only 7 points). ***These opportunities are meant to encourage you to complete the project assignments early rather than procrastinating.***

Lastly, you have a set of opportunities to earn 5 points for trading participation with a classmate from our Psyc 173 course to complete some of our activity assignments. Specifically, you'll be collecting quantitative and/or qualitative data as part of the Task Analysis, Metrics, Waldo, Paper Prototype/Usability Testing, & Training assignments. So you would have to connect with a classmate and then collect data from them, and let them collect data from you, for between one and all five of these assignments. You would earn 1 point for collecting data from *different* classmates for each of these five activities. These points are tiered if you do not collect data from a classmate for each of the five listed activity assignments (e.g., if you collected data from a classmate for one out of the five assignments, you would receive 1/5 points). Again, to receive all five points, you would have to collect data from *five different classmates* (i.e., you will NOT be awarded points for collecting data from the same classmate over and over again). ***These opportunities are meant to encourage you to get to know at least a small group of your classmates and work together to gain practice with human factors data collection.***

Grading Policy

Your grade will be based on the total amount of points (1000 possible points) you receive from engagement week (50 possible points), activities (500 possible points), reflections (100 possible points), project milestones (150 possible points), and the final project (200 possible points). Below is a breakdown of the amount of points needed to earn the specified letter grades. (**NOTE:** Individual assignment totals may change over the course of the semester causing a change in the total amount of points.) All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades. See [University Policy F13-1](#) for more details.

985-1000 = A+ (~99-100%)	916-984 = A (~93-98%)	896-915 = A- (~90-92%)	
866-895 = B+ (~88-89%)	816-865 = B (~83-87%)	796-815 = B- (~80-82%)	
766-795 = C+ (~78-79%)	716-765 = C (~73-77%)	696-715 = C- (~70-72%)	Less than 595 = F
666-695 = D+ (~68-69%)	616-665 = D (~63-67%)	595-615 = D- (~60-62%)	(~59% or less)

Credit & Gratitude

Thank you to Dr. David Schuster, the previous instructor for this course, for allowing me to modify & use his materials to teach it since he is no longer able to.

SJSU Peer Connections & Writing Center

Peer Connections is a campus-wide resource for mentoring and tutoring, visit their website (<http://peerconnections.sjsu.edu>) for more information. To make an appointment at the SJSU Writing Center or to refer to the online resources offered by the Writing Center, visit their website: <http://www.sjsu.edu/writingcenter>.

Links to University Policies

General Expectations, Rights and Responsibilities of the Student

Students are encouraged to familiarize themselves with SJSU's policies and practices via University Policy S90-5 (<http://www.sjsu.edu/senate/docs/S90-5.pdf>). More detailed information on a variety of related topics is also available in the SJSU catalog (<http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html>).

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness (<http://info.sjsu.edu/static/catalog/policies.html>). Add/drop deadlines can be found on the current academic year calendars document (http://www.sjsu.edu/provost/services/academic_calendars/). The Late Drop Policy is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Information about the latest changes and news is available at the Advising Hub at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course. **Therefore, neither recording of class lectures or discussions nor distribution of course materials are allowed. Failure to follow this policy will be considered a violation of course academic integrity policy and will result in immediate expulsion from the class, a grade of F in the course, and reporting the student to the University and proper authorities for further sanctions.**

Academic integrity

The University Academic Integrity Policy S07-2 at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development (<http://www.sjsu.edu/studentconduct/>). Depending on the severity of the conduct, you may receive a zero on the assignment or a grade of F in the course. Grade Forgiveness does not apply to courses for which the original grade was the result of a finding of academic dishonesty.

Campus Policy in Compliance with the American Disabilities Act

Presidential Directive 97-03 (http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

Accommodation to Students' Religious Holidays

According to University Policy S14-7 (<http://www.sjsu.edu/senate/docs/S14-7.pdf>), SJSU shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class.

SJSU Counseling and Psychological Services (CAPS)

All students are welcome at Counseling and Psychological Services, located at the Student Wellness Center, room 300B, for support with mental health. You can visit the CAPS website at <http://www.sjsu.edu/counseling>.

Course Schedule

We will follow the schedule below to the greatest extent possible. However, the schedule is subject to change. You will be given fair notice of any changes via Canvas announcements.

Week	Topics, Textbook Chapters, & Assignments
<i>Week 1:</i> Th 1/22 – Sun 1/25	<i>Topic(s):</i> Course Intro <i>Textbook Chapter:</i> NONE, but read the syllabus! <i>Assignment(s):</i> <u>Get the textbook!</u>
<i>Week 2:</i> M 1/26 – Sun 2/1	<i>Topic(s):</i> Intro to Human Factors & Engagement Week! <i>Textbook:</i> Read Ch. 1 <i>Assignment(s):</i> <u>Create a post to Introduce Yourself on our Canvas Discussion Board AND submit your Personalized Schedule on Canvas by 11:59pm on Friday (1/30)</u>
<i>Week 3:</i> M 2/2 – Sun 2/8	<i>Topic(s):</i> Human Factors & Design <i>Textbook Chapter:</i> Read Ch. 2 <i>Assignment(s):</i> <u>Submit BOTH your Task Analysis Activity AND your response to Reflection 1 on Canvas by 11:59pm on Friday (2/6)</u>
<i>Week 4:</i> M 2/9 – Sun 2/15	<i>Topic(s):</i> Human Factors & Science <i>Textbook Chapter:</i> Read Ch. 3 <i>Assignment(s):</i> <u>Submit BOTH your Metrics Activity AND your response to Reflection 2 on Canvas by 11:59pm on Friday (2/13)</u>
<i>Week 5:</i> M 2/16 – Sun 2/22	<i>Topic(s):</i> Human Performance <i>Textbook Chapter:</i> Read Ch. 4 <i>Assignment(s):</i> <u>Submit BOTH your Waldo Activity AND your response to Reflection 3 on Canvas by 11:59pm on Friday (2/20)</u>
<i>Week 6:</i> M 2/23 – Sun 3/1	<i>Topic(s):</i> Cognitive Factors <i>Textbook Chapter:</i> Read Ch. 6 <i>Assignment(s):</i> <u>Submit BOTH your Article Summary Activity AND your response to Reflection 4 on Canvas by 11:59pm on Friday (2/27)</u>

Week	Topics, Textbook Chapters, & Assignments
Week 7: M 3/2 – Sun 3/8	<p><i>Topic(s):</i> Applied Research, Human-computer Interaction (HCI) & User Experience (UX)</p> <p><i>Textbook Chapter:</i> Read Ch. 10</p> <p><i>Assignment(s):</i> <u>Submit your Paper Prototype/Usability Testing Activity on Canvas by 11:59pm on Friday (3/6)</u></p>
Week 8: M 3/9 – Sun 3/15	<p><i>Topic(s):</i> Displays & Controls</p> <p><i>Textbook Chapter:</i> Read Ch. 8</p> <p><i>Assignment(s):</i> <u>Submit BOTH your Heuristic Evaluation Activity AND your response to Reflection 5 on Canvas by 11:59pm on Friday (3/13)</u></p>
Week 9: M 3/16 – Sun 3/22	<p><i>Topic(s):</i> Physical Ergonomics & Anthropometry</p> <p><i>Textbook Chapter:</i> Read Ch. 12</p> <p><i>Assignment(s):</i> <u>Submit BOTH your Physical Ergonomics Activity AND your response to Reflection 6 on Canvas by 11:59pm on Friday (3/20)</u></p>
Week 10: M 3/23 – Sun 3/29	<p><i>Topic(s):</i> Decision Making & Macro-cognition</p> <p><i>Textbook Chapter:</i> Read Ch. 7</p> <p><i>Assignment(s):</i> <u>Submit BOTH your MAUT Activity AND your response to Reflection 7 on Canvas by 11:59pm on Friday (3/27)</u></p>
Week 11: M 3/30 – Sun 4/5	<p style="text-align: center;">SPRING BREAK</p> <p style="text-align: center;">Relax, NO student drop-in hours, NO reading or videos, & NO assignments due!</p>
Week 12: M 4/6 – Sun 4/12	<p><i>Topic(s):</i> Automation</p> <p><i>Textbook Chapter:</i> Read Ch. 11</p> <p><i>Assignment(s):</i> <u>Submit BOTH your Robots Activity AND your response to Reflection 8 on Canvas by 11:59pm on Friday (4/10)</u></p>
Week 13: M 4/13 – Sun 4/19	<p><i>Topic(s):</i> Stress, Workload, & Safety</p> <p><i>Textbook Chapter:</i> Read Ch. 15</p> <p><i>Assignment(s):</i> <u>Submit Project Milestone 1 AND your response to Reflection 9 on Canvas by 11:59pm on Friday (4/17)</u></p> <p><i>NOTE:</i> <u>The early deadline to submit your Project Milestone 1 is by 11:59pm on Wednesday (4/15)</u></p>
Week 14: M 4/20 – Sun 4/26	<p><i>Topic(s):</i> Sociotechnical Systems</p> <p><i>Textbook Chapter:</i> Read Ch. 18</p> <p><i>Assignment(s):</i> <u>Submit your response to Reflection 10 on Canvas by 11:59pm on Friday (4/24)</u></p>
Week 15: M 4/27 – Sun 5/3	<p><i>Topic(s):</i> NONE</p> <p><i>Textbook Chapter:</i> NONE</p> <p><i>Assignment(s):</i> <u>Submit your Project Milestone 2 on Canvas by 11:59pm on Friday (5/1)</u></p> <p><i>NOTE:</i> <u>The early deadline to submit your Project Milestone 2 is by 11:59pm on Wednesday (4/29)</u></p>
Week 16: M 5/4 – Sun 5/10	<p><i>Topic(s):</i> Training & Job Design</p> <p><i>Textbook Chapter:</i> Read Ch. 17</p> <p><i>Assignment(s):</i> <u>Submit your Training Activity on Canvas by 11:59pm on Friday (5/8)</u></p>
Last Week: M 5/11 – F 5/15	<p><i>Topic(s):</i> Course Outro</p> <p><i>Textbook Chapter:</i> NONE</p> <p><i>Assignment(s):</i> <u>Submit your Final Project Deliverable on Canvas by 11:59pm on Friday (5/15)</u></p> <p><i>NOTE:</i> <u>The early deadline to submit your Final Project Deliverable is by 11:59pm on Wednesday (5/13)</u></p>