

Minor in Human Systems Integration

Are you interested in how people interact with technology?
Would you like to apply your interest to the design of better products, from mobile devices to video games?
If so, the Minor in Human Systems Integration (HSI) might be for you!

About the Minor in Human Systems Integration

HSI is a rapidly growing field with many career opportunities in technology (Google, Apple), medicine and healthcare (e.g., Kaiser), and government (e.g., NASA, US Military, NHTSA, FAA).

HSI involves the analysis, design, and assessment of human interactions with complex sociotechnical systems and products (e.g., aircraft, spacecraft, mobile devices, web sites). HSI professionals study the capabilities and limitations of people using these complex systems and then apply this knowledge to develop human-centered systems and products that optimize human capabilities; increase system efficiency, reliability, usability, and safety; and minimize error. HSI research and application can save lives and money as well as reduce stress, frustration, accidents, and injuries.

This minor introduces students to an interdisciplinary science and practice that will help them work in cross-functional teams. Declaring this minor will show employers and graduate programs that you have completed initial training in the field. This should provide you with a competitive advantage given that this is an uncommon focus at the undergraduate level!



Examples of possible career pathways in HSI

May require additional education/training/experience

- Aviation safety
- Cybersecurity
- Human-computer interaction
- Management of HSI
- Industrial design
- Industrial and systems engineering
- Product design
- User experience
- Usability testing
- Video game design



Cockpit of the Space Shuttle mission simulator, Johnson Space Center Mission Simulation and Training Facility

Curriculum

The core minor topics include general psychology, human cognition, basic statistics, and an introduction to human factors. The electives will allow you to tailor the minor to your academic and career interests. The minor requires 21-24 units, depending on the chosen electives. At least 12 of these units must be separate and distinct from the units used for your major program. Six of the units count toward lower-division GE credit (PSYC 001 and STAT 095 – or equivalent).

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Required courses

Course #	Program of Study
PSYC 001	General Psychology
STAT 095	Elementary Statistics (or equivalent GE Area B4 class or BUS2 090)
PSYC 173	Human Factors

Any two of the following:

PSYC 135	Cognition
PSYC 155	Human Learning
PSYC 158	Perception

Electives (choose at least two)

Aviation Human Factors

AVIA 002	Private Pilot Ground
AVIA 073	Air Traffic Control
BIOL 141	Human Factors in the Aviation Environment

Business/Management and Information Systems

BUS2 130	Introduction to Marketing
BUS4 091L	Computer Tools for Business
BUS4 092	Introduction to Business Programming
BUS4 111	Networking and Data Communications

Human Computer Interaction

ART/CS 108	Introduction to Game Studies
CS 046A	Introduction to Programming
CS 046B	Introduction to Data Structures
ISE 164	Computer and Human Interaction

Industrial Human Factors

DSID 121	Industrial Design Process
ISE 114	Safety Engineering
PSYC 170	Industrial and Organizational Psychology

Quantitative Methods

STAT 115	Intermediate Statistics
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Suggested Degree Roadmap

First Semester in the Minor

PSYC 001
STAT 095 (or equivalent)

Second Semester in the Minor

PSYC 135/155/158
PSYC 135/155/158

Third Semester in the Minor

PSYC 173
Elective 1

Fourth Semester in the Minor

Elective 2
Elective 3 (if necessary)

Student Organizations

Psi Chi Psychology Honor Society
<http://studentorgs.sjsu.edu/psichi/>

Human Factors and Ergonomics Society Student Chapter
<http://www.sjsuhfes.com>

Academic Unit

College of Social Sciences
Department of Psychology
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Minor: www.sjsu.edu/psych/minors/hsi

Contacts

Department Chair

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Affiliated Laboratories

Vision Laboratory

<http://www.sjsu.edu/people/cary.feria/visionlab/visionlab.htm>
Principal Investigator: Cary Feria, PhD
cary.feria@sjsu.edu
Topics: Visual perception, Multiple object tracking

VECTR Lab

<http://www.vectrlab.net>
Principal Investigator: David Schuster, PhD
david.schuster@sjsu.edu
Topics: Human-robot interaction, Cybersecurity, Video games and human performance

LAVA Lab

<http://lavalab.net>
Principle Investigator: Evan Palmer, PhD
evan.palmer@sjsu.edu
Topics: Perception, Attention, Human Factors, Healthcare, User Experience

