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 (e.g., 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
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PSYC 001 | General Psychology
STAT 095 | Elementary Statistics
(Or equivalent GE Area B4 class or BUS 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 | Introduction to Aviation
AVIA 073 | Air Traffic Control
BIOL 141 | Human Factors in the Aviation Environment

Business/Management and Information Systems
BUS 2130 | Introduction to Marketing
BUS 4091L | Computer Tools for Business
BUS 4092 | Introduction to Business Programming
BUS 4111 | 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

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.sjsuhfs.com

Academic Unit

College of Social Sciences
Department of Psychology
One Washington Square
San José, CA 95192-0120

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Minor: www.sjsu.edu/psych/minors/hsi

Contacts

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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