

**San José State University**  
**College of Science/Department of Computer Science**  
**CS180, Rapid HMI Design and Testing**  
**Spring Semester, 2023**

**Course and Contact Information**

**Instructor:** Jon Pearce

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**Prerequisites:**

- C- or better in CS 151
- Applicants should have strong Java programming and communication skills as well as the ability to quickly learn technological platforms required by the project.
- Experience with Javascript, React, Redux, and graph databases (Tinkergraph, Janusgraph, Gremlin query language) would also be useful but not necessary.

**Course Description:**

Future combatants will control systems of autonomous agents such as drones and robots. Designing HMIs (Human-Machine Interfaces) for such systems presents an interesting challenge: how can the HMI provide awareness of unexpected situations that may require rapid user intervention without overloading the user with information? To address this problem DARPA's [EDGE](#) (Enhanced Design for Graceful Extensibility) program proposes a new suite of tools that allow designers to quickly build and test HMIs.

[SRI International](#) is building an EDGE suite using [bRIGHT](#), their new human-machine interaction platform. bRight uses biometric data and context modeling to anticipate the needs of users working on problems that require rapid decision-making and that involve overwhelming amounts of data.

This is a team project course. Enrollment is by application and will be limited to four students from SJSU who will work with four students from the Technische Hochschule in Ingolstadt, Germany (THI). The team will work with computer scientists from SRI to develop one or more EDGE components (to be specified).

**Course Details:**

- Team members will work remotely with a team of four students from [THI](#)-- Technische Hochschule in Ingolstadt, Germany.
- The project is scheduled to begin February 15 with a week of orientation meetings on Zoom. During these meetings students will meet their THI counterparts as well as their SRI project directors. Tasks will be defined and assigned.
- The team will meet on Zoom at least once per week to report on their progress. All students are expected to make contributions during these meetings. It is also expected that students will communicate regularly during the week using a variety of collaboration tools.
- In early April THI students will travel to SJSU for in-person meetings, team building, and excursions to local attractions. SJSU students are expected to participate in these activities.

- The project is scheduled to end in early June when the SJSU team will be flown to Ingolstadt, Germany for a week of presentations. Airfare, room, and board will be paid by the [enGlobe project](#).

### **Course Learning Outcomes:**

Students will gain experience

- Collaborating internationally
- Working with industry

### **Required Texts/Readings**

- To be provided by SRI as needed.

### **Other equipment / material requirements**

- Most teamwork will be done remotely via Zoom, so a laptop with a working camera will be needed.

### **Course Requirements and Assignments**

- Students are required to attend all team meetings and complete all tasks assigned to them on time.

### **Grading Scheme**

- Students who fully participate in the project will receive 3 units of credit.

### **University Policies**

- Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](#) at <http://www.sjsu.edu/gup/syllabusinfo/>

### **Course Schedule**

- There will be weekly team meetings on Zoom. The time of the meetings will be determined at the first team meeting.