San Jose State University
ISE 195A: Senior Industrial Engineering Design I
Fall 2014

Instructor: Louis Freund
Email: louis.freund@sjsu.edu
Phone: 408-924-3890
Preferred Method of Contact: Email
Office Location: Engr 485
Office Hours and Days: TBD

Catalog Description


Course Description

This course is the first course in a two-semester sequence in which each student will work on a specific design project in Industrial Engineering. The focus of this course will be on creating an initial design and a proposal for the project and integrating social and global issues into your design project.

In the College of Engineering at SJSU, we believe that it is critical that engineering students integrate the GE student learning outcomes into their engineering studies. In your senior project course and the Engr 195A course, you will be challenged to understand the relationship of engineering to the broader community both in the U.S. and worldwide. In addition to the assignments in Engr 195A, the engineering faculty have created linked activities in your senior project course that allows you to apply these concepts to your engineering discipline.

Prerequisites: ISE 105, ISE 120, ISE 170, ENGR 100W, major form on file and senior standing.

Corequisites: Engr 195A

Required Textbooks: None

Additional Materials: Handouts, etc. to be provided as needed on website or in class

Student Learning Objectives

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

1. Use teamwork skills in the design of their projects
2. Utilize research skills to analyze their project topics
3. Give presentations to small groups
4. Describe specific topics that are close to the Industrial & Systems Engineering field
5. Discuss the ethical components of the project
6. Present proposal and results in an oral and written format
7. Discuss the role of identity, equality, social actions, and culture in solving technical problems (Integration of Area S and Engineering).
GE/SJSU Studies Learning Outcomes (LO)

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

S-LO1: Describe how identities (i.e. religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age) are shaped by cultural and societal influences within contexts of equality and inequality;

- ENGR 195A Testimony 1: Discuss and provide examples of how your identities (i.e., religious, gender, ethnic, racial, class, sexual orientation, disability and/or age, among others) are shaped by cultural and societal influences within contexts of equality and inequality (250-500 words).
- ENGR 195A Testimony 2: How does language affect our identities? How do we use language and labels to authenticate our identities to others and ourselves? (250-500 words)
- ISE 195A Paper 1: An article from the designated Industrial Engineer magazine that focuses on identities being shaped by culture and societal influences. After reading the article, the student will summarize and add personal connections and experiences to the article. (500 words).

S-LO2: Describe historical, social, political, and economic processes producing diversity, equality, and structured inequalities in the U.S.;

- Engr 195A Reflection paper 2: “Secrets of Silicon Valley” reflection paper (250 words).
- ISE 195A Reflection Paper 2: Using the case studies provided in ENGR195A/B, describe how your project fits into the historical, social, political, and economic processes producing diversity, equality, and structured inequalities in the U.S. (500-750 words)

S-LO3: Describe social actions which have led to greater equality and social justice in the U.S. (i.e. religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age); and

- ENGR 195A Reflection paper 1: Describe social actions within the borders of the United States that have led to greater equality and social justice in your life (i.e., religious, gender, ethnic, racial, class, sexual orientation, disability, and/or age). Discuss how your current or past projects have or will contribute to social justice in the United States (750-1250 words).
- Engr 195A Reflection Paper 2: In his essay, Dyson gives some historical examples of technological innovations that he claims have increased social justice. Considering the technological innovations in your discipline, please describe another example and indicate how it has increased social justice in the U.S. (250-500 words)
- ISE 195A Reflection paper 1: Social entrepreneurs use entrepreneurial methods to create social ventures that provide solutions to social issues. Social entrepreneurs work to create social change by generating profit along with creating social capital in creative and innovative ways. Research a social entrepreneurship project in your local area. In this reflection paper, indicate how this project has led to greater equality and social justice in the U.S. (250-500 words)

S-LO4: Recognize and appreciate constructive interactions between people from different cultural, racial, and ethnic groups within the U.S.

- Engr 195A Website Analysis: Organization Website Analysis Environmental and social justice issues are addressed at many different levels and in different ways by groups and organizations. This assignment addresses the broad GE learning objective of “recognizing and appreciating constructive interactions between people from different cultural, racial, and ethnic groups in the U.S.” and the specific course learning objective to “Identify, compare, and contrast how local community organizations, groups, and agencies address social issues relevant to the environment and quality of life in the Santa Clara Valley. (750 words).
ISE 195A privacy essay: Consider a negative side effect of technology: reduction of privacy online. Read the following articles and answer the questions in paragraph form. Your essay must cite your sources and be at least 500 words.

Articles
- Case Study on Online Privacy, http://www.scu.edu/ethics-center/privacy/case/
- The Case of the Sole Remaining Supplier, http://www.scu.edu/ethics/dialogue/candc/cases/supplier.html

Essay Instructions: Research the privacy guidelines for an organization in your community? Either visit one of these groups' websites or visit the group in person and describe the interactions between this group and the larger community.

Course Requirements

Students will be formed into teams during the first class session. Each student team will select two topics for study, one from each Topic Group on the attached page. The Group 1 Topic selected by each student team will be the focus of the first four weeks of the class, the second topic (Group 2 Topic) will be studied the next four weeks. The focus of the final 7 weeks will be spent conducting a data collection and analysis project.

Student teams will prepare and present an oral report to the class about each of their first two topics. The Group 1 topic presentations will be on February 21st, with others as shown on the attached schedule.

Student teams will meet weekly with the instructor to review progress pertaining to the current selected Topic or project. Specific weekly reports are required, addressing the agendas as indicated on the attached schedule. All team members must be present at each weekly report session, and at each scheduled presentation.

Students will be required to attend at least five of the weekly “Symposia on Leading Technologies” presentations (Thursdays – 12:00 – 1:00 pm: Locations to be announced) and present a Class Symposium Voucher for attendance, co-signed by a 195A classmate, at the next regularly scheduled team meeting with the professor. Extra attendance will be counted for extra credit up to 5% of the Individual component of the course grade (not to exceed 55% of the total grade).

Grading Information

**Individual Component: 55%**
- Symposium attendance 10%
- Area S Oral and written reports 25%
- Weekly status 10%
- Final Oral presentation 10%

**Team Component: 45%**
- Weekly status 15%
- Oral Reports 15%
- Final project 15%

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per
week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

**Grading Percentage Breakdown**

- 94% and above A
- 93% - 90% A-
- 89% - 87% B+
- 86% - 84% B
- 83% - 80% B-
- 79% - 77% C+
- 76% - 74% C
- 73% - 70% C-
- 69% - 67% D+
- 66% - 64% D
- 63% - 60% D-
- below 60% F

**Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at [http://info.sjsu.edu/static/catalog/policies.html](http://info.sjsu.edu/static/catalog/policies.html). Add/drop deadlines can be found on the current academic calendar web page located at [http://www.sjsu.edu/calendars/](http://www.sjsu.edu/calendars/).

The Late Drop Policy is available at [http://www.sjsu.edu/aars/policies/latedrops/policy/](http://www.sjsu.edu/aars/policies/latedrops/policy/). Students should be aware of the current deadlines and penalties for dropping classes. Information about the latest changes and news is available at the Advising Hub at [http://www.sjsu.edu/advising/](http://www.sjsu.edu/advising/)

**University Policies**

**Academic integrity**

Students should know that the University’s Academic Integrity Policy is available at [http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf](http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf). Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University’s integrity policy, require 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. The website for Student Conduct and Ethical Development is available at [http://www.sa.sjsu.edu/judicial_affairs/index.html](http://www.sa.sjsu.edu/judicial_affairs/index.html).

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy F06-1 requires approval of instructors.

**Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive
97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

**Additional Policies or information required by the department, or college**

**Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

**SJSU Writing Center**

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center website is located at http://www.sjsu.edu/writingcenter/about/staff/.

**Technology Resources**

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

**Tentative Course Calendar** Subject to change with fair notice

<table>
<thead>
<tr>
<th>Week</th>
<th>Class Plan</th>
<th>HW #</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intro: course plan; choose Article 1</td>
<td>HW 1</td>
<td>IE Magazine Individual Analysis (Article 1)</td>
</tr>
<tr>
<td>2</td>
<td>IE Article small group discussion; relate to Area S questions list</td>
<td>HW 2</td>
<td>Summarize Area S questions from group discussion</td>
</tr>
<tr>
<td>3</td>
<td>Intro: Engineering Code of Ethics; choose Article 2 and groups for presentation</td>
<td>HW 3</td>
<td>IE Magazine Individual Analysis (Article 2) with focus on ethical issues (to be used for group meeting)</td>
</tr>
<tr>
<td>4</td>
<td>Review ethics cases; group meeting to discuss Article 2 presentation</td>
<td>HW 4</td>
<td>Draft presentation (focus on IE topics, Area S questions and ethics)</td>
</tr>
<tr>
<td>Week</td>
<td>Task Description</td>
<td>HW</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Draft presentation; group meeting</td>
<td>HW 5</td>
<td>Finalize presentation of Article 2</td>
</tr>
<tr>
<td>6</td>
<td>Group presentations; teamwork evaluation surveys</td>
<td>HW 6</td>
<td>Individual ethics case-study analysis</td>
</tr>
<tr>
<td>7</td>
<td>Choose data analysis project and group; discussion of ethics case in new group; schedule first site visit</td>
<td>HW 7</td>
<td>First site visit with report; start running list of answers to Area S questions</td>
</tr>
<tr>
<td>8</td>
<td>Report initial findings of project (area of focus, goals, timeline)</td>
<td>Weekly Update</td>
<td>Begin project update for weekly meetings</td>
</tr>
<tr>
<td>9</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings</td>
</tr>
<tr>
<td>10</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings, ISE 195A privacy essay</td>
</tr>
<tr>
<td>11</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings</td>
</tr>
<tr>
<td>12</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings</td>
</tr>
<tr>
<td>13</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings</td>
</tr>
<tr>
<td>14</td>
<td>Weekly meeting update</td>
<td>Weekly Update</td>
<td>Site meetings, ISE 195A Reflection paper 1</td>
</tr>
<tr>
<td>15</td>
<td>Draft presentation review</td>
<td>Weekly Update</td>
<td>Site meetings</td>
</tr>
<tr>
<td>16</td>
<td>Final group presentations</td>
<td>Weekly Update</td>
<td>Final report due, ISE 195A Reflection Paper 2</td>
</tr>
</tbody>
</table>