San José State University
Department of Electrical Engineering
EE 198B, Senior Design Project II, All Sections, fall 2016

Instructor: David Wahlgren Parent
Office Location: ENGR 355
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Email: david.parent@sjsu.edu
Office Hours: https://booknow.appointment-plus.com/363qlt82/
Class Days/Time: F
Classroom:
Prerequisites: Senior in good Standing, 198A with a C or better

Course Description:
Implementation of group design projects initiated in EE 198A. Group oral and written reports. Integrate global and social issues in engineering. GE Area: V when taken as part of the EE Major sequence

Prerequisite: EE 198A (with grade of "C" or better), Senior EE student in good standing. Passage of the Writing Skills Test (WST) or ENGL/LLD 100A with a "C or better" (C- not accepted), completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Corequisite: ENGR 195B

Misc/Lab: Lab 9 hours.

Note: Meets GE Areas S and V when course is taken in combination with: EE 198A, ENGR 195A and ENGR 195B

Implementation of group design projects initiated in EE 198A. Group oral and written reports.

Student Learning Objectives

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

1. Design a system, device or component (c,k)
2. Fabricate a system, device or component (c,k)
3. Test a system, device or component (c,k)
4. Work in a team. (d)
5. Research an Electrical Engineering topic (i,j)
6. Write individual engineering reports (g)
7. Write final Engineering Team reports(g)
8. Orally present Engineering ideas and results(g)

Student Learning Objectives for Area V of SJSU Studies (Advanced GE)

- GELO 1: Students shall be able to compare systematically the ideas, values, images, cultural artifacts, economic structures, technological developments, or attitudes of people from more than one culture outside the U.S.
  - ENGR 195B Essay 3: Write an essay that compares the ideas, values, technological developments, and/or attitudes of people from at least two different countries outside the US. Your essay must focus on renewable energy and one of your countries in your essay must be from your article (see details on individual assignment) (1000 words).
  - EE 198B Reflection paper 1: Assume that your project is about to turn into a successful company. Using the studies provided in ENGR195A/B as a background, write about how to take into account at least two aspects (for example ideas, values, images, cultural artifacts, economic structures, or technological developments) while evaluating your decision to manufacture your product in two other countries. (750 words)

- GELO 2: Students shall be able to identify the historical context of ideas and cultural traditions outside the U.S. and how they have influenced American culture.
  - ENGR 195B Essay 1: Choose one of the following technological developments that were discussed in the web tutorial: the mechanical clock, gunpowder, the Great or Jersey wheel, printing, or the compass. Write an essay that addresses the following topics. When you respond to these topics, you should be specific and cite specific details either from the web tutorial or your own research. You should cite specific events and/or cultures as you answer these questions. (500 words).
    - Discuss the history of the technology from its early beginnings to the Renaissance. Please discuss at least three different events in the history of the mechanical clock.
    - Describe one force (e.g., historical, cultural, social, economic, political) that affected the development of the technology?
    - How did the development and use of the technology affect Europe in the Middle Ages?
    - Overall, how did the technology affect the United States?
  - EE 198B Essay 1. Consider a technology invented outside of the U.S. in your discipline. (a) Describe the cultural and social factors that led to this technology’s “invention.” (b) Describe how this invention has evolved and influenced the culture of the U.S. (500 words)

- GELO 3: Students shall be able to explain how a culture outside the U.S. has changed in response to internal and external pressures.
  - ENGR 195B Essay 2: Imagine you are part as part of a group of Engineers to Guatemala at the request of Habitat for Humanity. You have been hired to come up with a plan that will alleviate or at least mitigate the effects of Hurricane Stan on the
Mayan communities in the Highlands. When thinking about your plan, you must consider all angles of the problem (for example, language barriers, culture, disease, landforms, seasonal weather, transportation, building materials, distrust and fear, etc.) (1000 words)

Grading:
- If you do not finish your project you will be graded according to how much of the proposal you fulfilled. Grades will only be given for not following the presentation rules.
- 10% Midterm Report. This will be a poster presentation of the project and teamwork status of your group to be given during the engineering open house. (Evaluated by the coordinator.)
- 25% Written Report. Your proposal will be judged by your project advisor and one other EE faculty.
- 25% Oral Presentation. Your presentation will be judged by your project advisor and one other EE faculty.
- 20% Advisor Evaluation.
- 20% Area V (Must get C or better in these assignments to satisfy Area V GE requirements.)

Course Content Learning Outcomes
- The students are able to apply knowledge and skills acquired in earlier coursework to identify, formulate, and propose a sound solution to an engineering problem (c,k)
- The students have an understanding of ethics, social implication of engineering, and the need for life-long-learning (i,f)
- The students can function in teams and can communicate effectively. (g)

Topics:
- Team work and life-long learning
- Communication skills

ABET outcomes
The letters in parentheses in the course learning objectives refer to ABET criterion 3 outcomes satisfied by the course. These are listed below as a reference:
- (a) An ability to apply knowledge of mathematics, science, and engineering
- (b) An ability to design and conduct experiments, as well as to analyze and interpret data
- (c) An ability to design a system, component, or process to meet desired needs
An ability to function on multi-disciplinary teams
An ability to identify, formulate, and solve engineering problems
An understanding of professional and ethical responsibility
An ability to communicate effectively
The broad education necessary to understand the impact of engineering solutions in a global and societal context
A recognition of the need for, and an ability to engage in life-long learning
A knowledge of contemporary issues
An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
Specialization in one or more technical specialties that meet the needs of companies
Knowledge of probability and statistics, including applications to electrical engineering
Knowledge of advanced mathematics, including differential and integral equations, linear algebra, complex variables, and discrete mathematics
Basic sciences, computer science, and engineering sciences necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components

Required Texts/Readings

Textbook
NA

Other Readings

Classroom Protocol

Cell Phones:
Students will turn their cell phones off or put them on vibrate mode while in class. They will not answer their phones in class. Students whose phones disrupt the course and do not stop when requested by the instructor will be referred to the Judicial Affairs Officer of the University.

Computer Use:
In the classroom, students are allowed to use computers only for class-related activities. These include activities such as taking notes on the lecture underway,
following the lecture on Web-based PowerPoint slides that the instructor has posted, and finding Web sites to which the instructor directs students at the time of the lecture. Students who use their computers for other activities or who abuse the equipment in any way, at a minimum, will be asked to leave the class and will lose participation points for the day, and, at a maximum, will be referred to the Judicial Affairs Officer of the University for disrupting the course. (Such referral can lead to suspension from the University.) Students are urged to report to their instructors computer use that they regard as inappropriate (i.e., used for activities that are not class related).

**Academic Honesty:**
Faculty will make every reasonable effort to foster honest academic conduct in their courses. They will secure examinations and their answers so that students cannot have prior access to them and proctor examinations to prevent students from copying or exchanging information. They will be on the alert for plagiarism. Faculty will provide additional information, ideally on the green sheet, about other unacceptable procedures in class work and examinations. Students who are caught cheating will be reported to the Judicial Affairs Officer of the University, as prescribed by Academic Senate Policy S04-12. “You are responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at [http://www2.sjsu.edu/ senate/S04-12.pdf](http://www2.sjsu.edu/ senate/S04-12.pdf)

• Expectations about classroom behavior; see Academic Senate Policy S90-5 on Student Rights and Responsibilities.

• As appropriate to your particular class, a definition of plagiarism, such as that found on Judicial Affairs website at [http://www2.sjsu.edu/senate/plagarismpolicies.htm](http://www2.sjsu.edu/senate/plagarismpolicies.htm)

• “If you would like to include in your paper any material you have submitted, or plan to submit, for another class, please note that SJSU’s Academic Integrity policy

**Dropping and Adding**
Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available at [http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-298.html](http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-298.html). Information about late drop is available at [http://www.sjsu.edu/sac/advising/latedrops/policy/](http://www.sjsu.edu/sac/advising/latedrops/policy/). Students should be aware of the current deadlines and penalties for adding and dropping classes.

**Grading Percentage Breakdown**

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>94% and above</td>
<td>A</td>
</tr>
<tr>
<td>93% - 90%</td>
<td>A-</td>
</tr>
</tbody>
</table>
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. 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.

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.

Course Schedule

Table 1 Course Schedule (Subject to change with fair notice as announced by instructor in class)
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>EE198B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/26/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>2</td>
<td>9/2/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>3</td>
<td>9/9/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>4</td>
<td>9/16/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>5</td>
<td>9/23/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>6</td>
<td>9/30/2016</td>
<td>Area V</td>
</tr>
<tr>
<td>7</td>
<td>10/7/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>8</td>
<td>10/14/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>9</td>
<td>10/21/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>10</td>
<td>10/28/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>11</td>
<td>11/4/2016</td>
<td>Area V</td>
</tr>
<tr>
<td>12</td>
<td>11/11/2016</td>
<td>No Class: Holiday</td>
</tr>
<tr>
<td>13</td>
<td>11/18/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>14</td>
<td>11/25/2016</td>
<td>No Class: Holiday</td>
</tr>
<tr>
<td>15</td>
<td>12/2/2016</td>
<td>Meet with group's Advisor</td>
</tr>
<tr>
<td>16</td>
<td>12/9/2016</td>
<td>Oral Presentations (Area V)</td>
</tr>
</tbody>
</table>