San José State University
College of Engineering /Computer Engineering Department
CMPE 195A – Senior Design Project I, Fall, 2014

Instructor: Keith C. Perry
Office Location: ENGR 265
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Email: keith.perry@sjsu.edu
Office Hours: TBA
Class Days/Time: TBA
Class Location: TBA
Prerequisites: For CMPE Majors: CMPE 125; CMPE 127; CMPE 130; CMPE 131;
ISE 130; ENGR 100W; all with a C or better; and major form on file.
For SE Majors: CMPE 131, ISE 130 or MATH 161A (all with a C- or
better), CS 100W or ENGR 100W (with a grade of C or better); and
major form on file.
Corequisite: ENGR 195A

Course Description
Comprehensive plan and preliminary design of a group computer/software engineering project;
integration of knowledge in science, technologies and team processes; group written report and
oral presentation; global and social issues in engineering; individual professional development
plans.

Course Description
This course is the first course in a two-semester sequence in which each student will work in a
group of 2 – 5 on a specific design project in Computer/Software 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 members have created linked activities in
your senior project course that allows you to apply these concepts to your engineering discipline.

Student Learning Objectives
By the end of the course, a student should gain the followings:
1. Have an ability to conduct and manage a computer hardware/software senior project using
   basic project planning and management techniques. (d)
2. Have an ability to analyze, design, and document a computer hardware/software
   component/system based on the given requirements and constraints. (a, c)
3. Have an ability to identify and understand the contemporary issues of a special computer
   hardware/software subject and related societal and environment impacts. (j)
4. Have an ability to use and select different solutions to solve problems. (e)
5. Have an ability to use various communication methods and skills to communicate with their
   teammates to conduct their practice-oriented senior projects in computer engineering. (g)
6. Be able to discuss engineering ethics and related professional codes of conduct. (f)
7. Have an ability to function as a good team player in a multi-disciplinary team. (d)
8. Be able to understand the importance and ways to life-long learning. (i)
9. Be able to understand the impact of a given computer engineering solutions in a global, economic, environmental, and societal context. (h)
10. 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).
- CMPE 195A Testimony 1: Based upon your response to ENGR 195A Testimony 1, consider your identity as a future engineer. How is your identity as a computer or software engineer shaped by cultural and societal influences within contexts of equality and inequality? Taking a subset of this as an example, your response might include a discussion of the equalities or inequalities based on your gender and age within the societal influences of the computer/software engineering industry that will affect your future identity as an engineer (250-500 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)
- CMPE 195A Reflection paper 2: Using the case studies provided in ENGR195A, 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)
- CMPE 195A Reflection paper 1: Describe how social actions that leverage social networking sites such as Facebook and Twitter have led to greater equality and social justice in the US. (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)

- **CMPE 195A essay:** Identify and discuss examples of constructive interactions that have resulted from social networking discussions between people from different culture, racial, and ethnic groups within the U.S. Your essay must cite your sources and include a reference section that follows the APA 6.0 or IEEE standard. (500 words)

**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

(d) An ability to function on multi-disciplinary teams

(e) An ability to identify, formulate, and solve engineering problems

(f) An understanding of professional and ethical responsibility

(g) An ability to communicate effectively

(h) The broad education necessary to understand the impact of engineering solutions in a global and societal context

(i) A recognition of the need for, and an ability to engage in life-long learning

(j) A knowledge of contemporary issues

(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

**Project Advisor Responsibilities**

- Assists the students to develop a sound project abstract
- Meets with students regularly to
  - Mentor the technical challenge of the project,
  - Monitor the progress of the project
  - Ensure the quality of the project reports
- Participates in Project committee meetings to
  - Review and approve project abstract
  - Review and approve project report
• Assess the performance of each student and provide input to final grade
• Attend students project presentations

Student Responsibilities as Individuals
A student will receive a passing grade only if the student and his/her team satisfy all following requirements.
• Complete a Prerequisite Agreement and Honesty Pledge along with the student’s transcript
• Actively access and follow all postings on Canvas class site.
• Complete all individual deliverables as described in the Course Schedule section and Canvas including, but not limited to
  o A life-long learning report
  o A contemporary issue report
  o An engineering ethics assignment
  o All of the General Education Area S & V integration assignments
• Demonstrate attention to punctuality and sensitivity to time requirements in all matters
• Attend, review, and be able to discuss material presented during the Silicon Valley Leaders Symposium Sessions.
• Attend and participate in an exit interview

Student Responsibilities as part of a Project Team
• Engage with his/her project team.
• Secure a committed project advisor and actively interact and seek assistance from the project advisor.
• Deliver the latest syllabus to the project advisor.
• Attend weekly meetings with the project advisor
• Participate in project reviews and presentations.
• Complete all team-oriented deliverables as described in the Course Schedule section and Canvas.
• Attend and participate in the Project Exposition
• Deliver a
  o Project abstract
  o Project plan (both draft and final version – CMPE 195A report)

Approval of Project Abstract
• By the second class meeting, a team submits a project abstract and a proof of project advisor’s approval to Canvas drop box.
• By the third class meeting, the instructor notifies each team whether the project abstract is acceptable.
• A team with an unacceptable project abstract must resubmit the project abstract and a proof of project advisor’s approval to Canvas in one week.
• The instructor notifies each team whether the revised project abstract is acceptable.
• A team with 2 unacceptable project abstracts will cause all team members to receive a failing grade of this course.
As with many engineering projects, a written deliverable needs to achieve a minimum level of quality to be acceptable at all. For this course the minimum level is defined as Writing Proficiency Exam (WPE) level 4 or better. Failure to achieve the minimum threshold results in an F in the class.

**Required Textbook and Readings:**
- No Required Textbook
- EthicsGame Ethics Lens Inventory $22.50 (includes SJSU discount of 20%)

**Other Readings/videos**
- The Purdue Online Writing Lab: [http://owl.english.purdue.edu/](http://owl.english.purdue.edu/)
- APA 6.0
  - [http://www.youtube.com/results?search_query=apa+format+word+2007&aq=1](http://www.youtube.com/results?search_query=apa+format+word+2007&aq=1)
  - [http://www.calstatela.edu/library/guides/3apa.pdf](http://www.calstatela.edu/library/guides/3apa.pdf)
- -Table of Contents, etc.
  - [http://www.youtube.com/watch?v=OkyisWIE3kQ](http://www.youtube.com/watch?v=OkyisWIE3kQ)

**Recommended References**

Additional course material will also be made available on Canvas.

**SJSU Senate Policy S12-3**
This new policy requires the university to be compliant with the Federal Regulation of the definition of the credit hour:
“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.”

**Classroom Protocol**
Attend classes on time and turn-off your cell phone.

**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](http://www.regent.edu/admin/stusrv/writingcenter/files/APA%206th%20Edition%20Quickview.pdf) section at URL:
http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at URL: http://www.sjsu.edu/calendars/.

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/.

Assignments and Grading Policy

- A letter grade
- Grades will be based on (1) the technical challenge of your project, (2) the progress of your project, (3) the quality of you reports, and (4) the participation in class discussions and presentations

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Project abstract</td>
<td>10%</td>
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<tr>
<td>Final project report</td>
<td>30%</td>
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<tr>
<td>Project presentation</td>
<td>10%</td>
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<tr>
<td>College seminars attendance</td>
<td>10%</td>
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<tr>
<td>Life-Long-Learning Assignment(s) (one quiz and one report)</td>
<td>5%</td>
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<tr>
<td>Contemporary Issues, Environment and Social Awareness Report</td>
<td>5%</td>
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<tr>
<td>Engineering Ethics Assignment(s) (one homework and one quiz)</td>
<td>5%</td>
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<tr>
<td>Testimony 1</td>
<td>5%</td>
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<tr>
<td>Reflection Paper 1 &amp; 2</td>
<td>10%</td>
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<tr>
<td>Essay</td>
<td>10%</td>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>A+ : &gt; 94</td>
<td></td>
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<tr>
<td>A : 90 – 93.99</td>
<td></td>
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<tr>
<td>A- : 85 – 89.99</td>
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<tr>
<td>B+ : 80 – 84.99</td>
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<tr>
<td>B : 75 – 79.99</td>
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<tr>
<td>B- : 70 – 74.99</td>
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<td>C+ : 65 – 69.99</td>
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<tr>
<td>C : 60 – 64.99</td>
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<td>C- : 55 – 59.99</td>
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<td>D+ : 50 – 54.99</td>
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<td>D : 45 – 49.99</td>
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<tr>
<td>D- : 40 – 44.99</td>
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<tr>
<td>F : &lt; 40</td>
<td>(0.5 - 0.9) = 1</td>
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<tr>
<td></td>
<td>(0.1 - 0.4) = 0</td>
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</table>

The following are important requirements for the class.

Project Registration

Each student must register their project for CMPE 195A at https://ssl.cmpe.sjsu.edu/sjsu/Courses/supervisorregistrationform.php

This must be completed by the date listed in the schedule below. Failure to do so may cause you to fail the course.

Class Online Management

This course will use Canvas for receiving assignments and project information,
Collaborative Work

Some of the work in the class is done in groups. The names of all contributors on any project component that is submitted and that is the result of collaborative efforts must identify precisely who contributed what.

Policy on Exams and Tests

- There are no makeup assignments, reports, in-class tests and exams.

Report Due Dates

Late reports are not acceptable. In this case, the grade of any late reports will be assigned a “zero” mark.

Report Advisor Signatures

It is the student’s responsibility to secure the required advisor’s signature on-time. The grade of a report without the advisor’s signature will be assigned a “zero” mark.

University Policies

Academic integrity

Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University’s Academic Integrity Policy requires 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 policy on academic integrity can be found at http://www.sjsu.edu/studentconduct/.

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 your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy S07-2 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 newly announced Accessible Education Center (the AEC was formerly called the DRC) at http://www.drc.sjsu.edu/. The AEC features distinct yet interconnected programs, services, and accommodations aimed at the strategic removal of barriers that inhibit students with disabilities’ full physical and curricular access, co-curricular engagement and learning, and effective communication. The new name reflects the University’s continued commitment to increasing accessibility and inclusivity on campus.

Student 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.

Peer Connections

The Learning Assistance Resource Center (LARC) and the Peer Mentor Program have merged to become Peer Connections. They are located in Room 600 in the Student Services Center (The 10th Street Garage located on the corner of 10th and San Fernando). It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The Peer Connections website is located at http://peerconnections.sjsu.edu/

SJSU Writing Center (Optional)

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/
## Course Schedule
This may be adjusted as the course progresses with fair notice via Canvas. Check Canvas for latest version and assignment/project due dates.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics and Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TBD</td>
<td>Lecture at 12:00 pm. Sign prerequisite agreement and submit with transcript to the department. Meet with potential advisor(s).</td>
</tr>
<tr>
<td>2</td>
<td>TBD</td>
<td>Lecture at 12:00 pm. Project selection and advisor finalized</td>
</tr>
<tr>
<td>3</td>
<td>TBD</td>
<td>Meet with your project advisor CMPE 195A Paper 1 (5 year Professional Career Plan.)</td>
</tr>
<tr>
<td>4</td>
<td>TBD</td>
<td>Obtain signed approval on your project abstract from your advisor Register project online Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm</td>
</tr>
<tr>
<td>5</td>
<td>TBD</td>
<td>Submit advisor-signed project abstract. Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm Lecture at 1:00 pm. Project Teamwork &amp; Project Abstract Presentations</td>
</tr>
<tr>
<td>6</td>
<td>TBD</td>
<td>Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm Lecture at 1:00 pm: Product Life Cycle and Project Quality Management</td>
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<tr>
<td>7</td>
<td>TBD</td>
<td>Meet with project advisor Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm CMPE 195A Testimony 1</td>
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<tr>
<td>8</td>
<td>TBD</td>
<td>Meet with project advisor Lecture at 12:00 pm: Project milestone check</td>
</tr>
<tr>
<td>9</td>
<td>TBD</td>
<td>Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm CMPE 195A essay: Constructive Social Media Interactions</td>
</tr>
<tr>
<td>10</td>
<td>TBD</td>
<td>Meet with project advisor Submit Task List and Activity Timeline Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm</td>
</tr>
<tr>
<td>11</td>
<td>TBD</td>
<td>Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm Lecture at 1:00 pm: Life-Long-Learning with Class Exercises</td>
</tr>
<tr>
<td>12</td>
<td>TBD</td>
<td>Meet with your project advisor Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm Lecture at 1:00 pm: Professional Ethics with Class Exercises CMPE 195A Reflection paper 1</td>
</tr>
<tr>
<td>13</td>
<td>TBD</td>
<td>Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm</td>
</tr>
<tr>
<td>14</td>
<td>TBD</td>
<td>Attend Silicon Valley Leaders Symposium from 12:00 to 1:00 pm Upload project report to Canvas and email to advisor. Meet with advisor to review it.</td>
</tr>
<tr>
<td>15</td>
<td>TBD</td>
<td>Project Presentations CMPE 195A Reflection paper 2</td>
</tr>
<tr>
<td>16</td>
<td>TBD</td>
<td>Upload final project to Canvas that has been electronically signed by your advisor.</td>
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<tr>
<td></td>
<td>TBD</td>
<td>Attend Project Exposition in the ballroom at the new Student Center between 1:00 and 4:00. <a href="http://bit.ly/sjsu-cmpe-project-expo">http://bit.ly/sjsu-cmpe-project-expo</a></td>
</tr>
</tbody>
</table>