

Tech 190B – Senior Project II
Course Syllabus and Outline, Spring, 2017

General Course Information

Instructor:	Ali M. Zargar, Ph.D.
Class Time:	Tuesday 3:15 – 4:05 PM
Lecture Room:	IS 120
Lab	IS 119; Thu. 12:00 – 5:55 PM
Office Hours:	Mon.: 11:00 – 12:00 & Tue.: 12:00 1:00
Office Room:	IS 102
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	(assignments are not accepted by FAX)
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Catalog Description

Second half of a one-year team project carried out under faculty supervision construction, testing, and evaluation of the design from Tech 190A culminating in demonstrations and written and oral presentations to faculty and peers.

Lecture/Seminar 1 hour, Laboratory 6 hours, 3 units.

Prerequisite: Tech 190A (with a grade of C or better)

Course Description

The Senior Project Course sequence in Industrial Technology (Tech 196A/B) is designed to offer students an interdisciplinary experience leading to an Industrial Technology degree. Students need to successfully complete both Tech 196A and Tech 196B to satisfy the senior project requirement for their major.

Course Goals

The overall goals for the course sequence are to:

1. Provide senior students a capstone experience in design to meet an identified need or problem, from concept to fabrication and validation of the final product.
2. Familiarize students with general industry practices, such as planning, budgeting, part procurement, fabrication, assembly, and functional tests.
3. Develop students' creative abilities in solving open-ended design problems.
4. Develop students' engineering judgment as well as their confidence in making and accepting responsibility for design decisions.
5. Develop students' oral and written communication skills necessary to describe the assumptions, methods, and results of applied engineering analysis, synthesis, and decision making associated with their design.
6. Make students aware of the importance of teamwork in the design of products and provide them with an opportunity to develop team and leadership skills.
7. Develop students' understanding of professional practices, engineering ethics, as well as global and societal issues.

Student Learning Outcomes

By the end of the course, a student should be able to:

[from Design Skills (ABET outcome B, C, E, K)]

1. Analyze, design, and implement a system, device or component based on a set of established requirements.
2. Develop a complete set of functional specifications the design solution must meet.
3. Generate solution concepts and select the most promising design concept using structured methodologies
4. Develop design models and/or drawings for prototype and final design components
5. Procure, fabricate, and assemble prototype and final design hardware
6. Evaluate, test, and analyze prototype and final design components and systems
7. Identify future modifications and improvements that could be made to the design based on test data
8. Write a project report and create presentations

Communication Skills (ABET outcome G)

9. Write high quality design reports (i.e., using correct language and terminology, correct technical information, and professionally prepared graphs and tables).
10. Give clear, informative, technically correct oral presentations using professionally prepared visual aids

Team Skills (ABET outcome D)

11. Use various communication methods and skills to communicate with their teammates and classmates to conduct their practice-oriented senior projects.

Ethical Issues (ABET outcome F)

12. Identify workplace and professional situations which can lead to ethical dilemmas.
13. Demonstrate understanding of and the ability to apply professional codes of conduct.

Global and Societal Issues (ABET outcome F)

14. List several examples of global and societal issues related to their project, and articulate a problem statement *or* position statement for each.
15. Identify possible solutions to these global and societal problems, as well as any limitations of such strategies.
16. Evaluate and describe accurately the environmental impact of your product.
17. Evaluate and describe accurately any environmental and economic tradeoffs of your product.

Course Requirements

1. In order to receive a passing grade, a student must
 - a. Demonstrate attention to punctuality and sensitivity to time requirements
 - b. Complete all project tasks and meet all of the milestones
 - c. Attend weekly meetings with project advisor.
 - d. Complete all deliverables by the due dates specified by the instructor
 - e. Deliver an individual professional plan on time.
 - f. Participate in the final project presentation.
 - g. Take exit exam on time.
2. At the end of the semester, each student (or team) is required to
 - a. Deliver a final project report
 - b. Demonstrate prototypes and other artifacts during the final presentation

Required Textbook:
No Required Textbook

Other Readings:
Class lecture notes can be found on Canvas

Assignments and Grading Policy cannot require SLVS attendance

Project Plan Execution and Deliverables	40%
Final project written report	20%
Project presentation	10%
Individual professional plan	10%
Individual retrospective report	5%
Class assignments	15%

(Include specified Silicon Valley Leaders Symposia)

A+ : > 94	A : 90 - 94	A- : 85 – 89
B+ : 80 – 84	B : 75 - 79	B- : 70 – 74
C+ : 65 - 69	C : 60 - 64	C- : 55 – 59
D+ : 50 – 54	D : 45 - 49	D- : 40 – 44
F : < 40	(0.5 - 0.9) = 1	(0.1 - 0.4) = 0

Canvas

A canvas course website is used to distribute class materials, schedule class activities, and host on-line discussion. This website is moderated by the instructor.

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.

University Policies

Academic integrity statement (from the Office of Student Conduct and Ethical Development):

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://sa.sjsu.edu/student_conduct.

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 [Disability Resource Center](http://www.drc.sjsu.edu/) (DRC) at <http://www.drc.sjsu.edu/> to establish a record of their disability.

Course Schedule

Please note: The following schedule is tentative. A new version will be posted on Canvas by February 7, 2017.

Week	Date	Topics, Readings, Assignments, Deadlines
R	1/26/17	Attend Lab (IS 119); Orientation, Review of your projects, and Planning
T	1/31/17	First Lecture (IS 120)
R	2/02/17	Attend Lab. Submit a timeline, a schedule of your project activities. Identify the milestones.
3	2/07	Meet with project advisor.
4	2/20	Meet with project advisor.
5	2/27	Attend Silicon Valley Leaders Symposium from Noon to 1:00pm Discussion: Project Teamwork at 1:00pm-2:00pm
6	3/5	Meet with project advisor
7	3/12	Submit individual professional plan to the department (1:00 to 4:00 p.m.) Attend Silicon Valley Leaders Symposium from Noon to 1:00pm
8	3/19	Meet with project advisor
9	3/26	Spring Break
10	4/2	Attend Silicon Valley Leaders Symposium from Noon to 1:00pm Attend Class. Project milestone check. (1:00pm – 1:30 pm).
11	4/9	Discussion: Life-Long-Learning with Class Exercises
12	4/16	Attend Silicon Valley Leaders Symposium from Noon to 1:00pm
13	4/23	Discussion: Project Presentation with Case Studies at 12:00(Noon) Meet with project advisor
14	4/30	Discussion: Professional Ethics with Class Exercises Attend Silicon Valley Leaders Symposium from Noon to 1:00pm Meet with project advisor
15	5/7	Submit final project to project advisor Your Final Project Presentation (each team 20 min.)
16	5/14	Tech 190B Exit Interview (1:00pm-2:30pm); Submit advisor-signed final report and individual retrospective report to the department (9:00 am – 12:00 pm.)
Final Exam	TBA	Tech 190B - Present project at Project Exposition.