SIE 498A First Semester Senior Capstone Engineering Design

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Office Hours:
> M, W, F: 9:00 a.m. to 11:00 a.m.
> or by appointment

COURSE DESCRIPTION
Teams of students will use material taught in the SIE curriculum to address a customer's needs and help a real-world client design or improve a system. Students will use a system design process, discover system requirements, identify project and technical risks, and develop a project plan and schedule. Students will communicate orally and in writing. A series of design reviews will monitor project goals, schedule, risk and progress. 498A should be taken in the student's second to last semester.

INSTRUCTIONAL OBJECTIVES
The objective of the Senior Design Project is to utilize the knowledge and skills gained from the Systems Engineering curriculum to address and solve a problem(s) of interest to industry. Students are expected to develop project opportunities and project sponsorship in coordination with their faculty mentor, prior to the beginning of the SIE 498A semester. These projects do not have to be for pay because there is academic credit received for the work performed. However, it is permissible to be paid if the industry sponsor has the resources and inclination to do so. The scope of the proposed project must be determined in consultation with the industry sponsor and the faculty mentor. The project must utilize and demonstrate knowledge, skills, and tools gained from classes in the Systems Engineering curriculum.

TEXTBOOK
There is not a required textbook for this course. The primary reference is:

International Council on Systems Engineering (2015). *Systems Engineering Handbook 4th Ed*.
> Hoboken, NJ: John Wiley & Sons Inc.

> ISBN: 9781118999400

PREREQUISITES
Senior Status

COURSE REQUIREMENTS

Students will work together in small teams on the project discussed above in, "Instructional Objectives;" all team members will receive the same grade for the overall project. There are six project deliverables: a written project proposal, a requirements verification review presentation, a preliminary design review report, a preliminary design review presentation, a critical design review report, and a critical design review presentation (example formats on D2L).

COURSE EVALUATION

☐ Written Proposal …………..……………………… 10%
☐ Requirements Verification Review Presentation.……..… 10%
☐ Preliminary Design Review Report …………..………. 15%
☐ Preliminary Design Review Presentation ………………. 15%
☐ Critical Design Review Report …………………………. 25%
☐ Critical Design Review Presentation ………...…………. 25%
☐ Final Grade: A (90~100), B (80~89), C (70~79), D (50~69), E (<50)

COURSE ACTIVITIES SCHEDULE

Project Proposal Report and RVR Presentation:	Not later than the end of the fifth week of the semester
Preliminary Design Review Report and Presentation:	Not later than the end of the tenth week of the semester
Critical Design Review Report and Presentation:	Not later than the end of the fifteenth week of the semester

ABSENCE AND CLASS PARTICIPATION POLICY

Students work towards course deliverables on time lines developed in consultation with the faculty mentor, project sponsor(s), and team members.

Required University Policy Statements are below:

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: http://catalog.arizona.edu/2015-16/policies/classatten.htm

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, http://policy.arizona.edu/human-resources/religious-accommodation-policy.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: http://uhap.web.arizona.edu/policy/appointed-personnel/7.04.02

CLASSROOM BEHAVIOR POLICY
Systems Engineering Senior Design is intended to replicate the professional engineering work environment as faithfully as possible in an academic setting; as such, behavior and personal conduct commensurate with expectations in the professional engineering work environment are expected of students at all times.

Required University Policy Statement below:

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (i.e. texting, chatting, reading a newspaper, making phone calls, web surfing, etc.). Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

THREATENING BEHAVIOR POLICY
Systems Engineering Senior Design is intended to replicate the professional engineering work environment as faithfully as possible in an academic setting; as such, behavior and personal conduct commensurate with expectations in the professional engineering work environment are expected of students at all times.

Required University Policy Statement below:

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to one's self. See: http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students.

ACCESSIBILITY AND ACCOMMODATIONS
Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For additional information on Disability Resources and reasonable accommodations, please visit http://drc.arizona.edu/. If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate. Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

CODE OF ACADEMIC INTEGRITY
Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See:

http://deanofstudents.arizona.edu/codeofacademicintegrity
http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity.

UA NONDISCRIMINATION AND ANTI-HARASSMENT POLICY
The University is committed to creating and maintaining an environment free of discrimination,
http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

ELECTIVE NAME AND PRONOUN USAGE
This course supports elective gender pronoun use and self-identification. As the course includes group work and discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect.

SUBJECT TO CHANGE STATEMENT
Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.