ENGR 499Q
Senior Design

Term YYYY

Instructor: **Name**

Office Address	TBA
Phone Number	TBA
Email address	TBA

Class Times: **As assigned**

Description: (Prereq: ENGR 399Q or permission of the instructor) In this second of the two-course capstone sequence, students incorporate appropriate engineering standards and multiple constraints into their developing project. Students apply the engineering design approach to produce solutions that meet specific client needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. This major design experience serves to integrate the knowledge and skills that students have developed in earlier course work through the completion of an original project. Students will be required to utilize project management principles throughout the experience and develop a detailed report to be presented both orally in a public forum and in written form.

Outcomes: After completion of ENGR 499, students will be able to:

(1) integrate the knowledge and skills that students have developed in earlier course work;
(2) utilize project management principles in the satisfaction of a client statement requiring a new design aspect;
(3) realize a prototype of a design aspect (system, component, or process); and
(4) develop a detailed report to be presented both orally in a public forum and in written form.

Further, as an experiential learning course, students will:

(1) demonstrate the knowledge and skills obtained through participation in experiential learning activities that are relevant/pertinent to their academic programs and/or career goals, and
(2) demonstrate a high level of comprehension and skill in connecting theory with practice which is correlated to their level of participation in experiential learning activities.

ABET Outcomes: This course support achievement of the following ABET outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Assignments:

Engineering Notebook: Students will maintain an engineering notebook that documents the day-to-day activity on the project, experimental/theoretical/modeling procedures, results and analysis in the moment. The supervising faculty member will dictate the format for notebook entries, with a grading procedure established before the beginning of the project.

Written Report: Students will complete a written report on the process and results of their project. This report will be graded based on the Written Report Rubric established by the department.

Weekly Meetings: Students will orally present at bi-weekly meetings on their progress.

Oral Report and Prototype Demonstration: Students will orally present the results of their project and demonstrate the function of their prototype in a public forum.

Client Satisfaction: Students will receive a modest portion of the overall course grade from the project's external client, if appropriate to the project.

Other: The faculty member supervising the student may require other assignments. These assignments and the grading procedure should be made clear before the start of the course. If there are no other assignments, then weighting for this category will be distributed to the other categories in a manner determined by the supervising faculty member.

Grading:

Grades will be assigned based on performance on assignments, any kept technical notebooks, an oral report, and a written report. Written and oral reports are graded on a 4-point scale. The notebook and other assignments will be graded on a scale determined by the supervising faculty member and discussed with the student at the start of the course. Because common rubrics are being used for most categories, the student should recognize that a faculty member other than the supervising faculty member could grade assignments, or that multiple faculty members could grade assignments with the final result being an average.

Engineering Notebook:	15%
Written Report:	20%
Weekly meetings report:	10%
Oral Report:	15%
Computational model:	15%
Prototype demonstration:	20%
Client satisfaction:	5%

Grading Scale:

A	89.5% and above
B+	84.5% — 89.4%
B	79.5% — 84.4%
C+	74.5% — 79.4%
C	69.5% — 74.4%
D+	64.5% — 69.4%
D	59.5% — 64.4%

F 59.4% and below

Attendance: STUD-SENA-332: Unexcused Absence Penalties – an instructor is permitted to impose a penalty, including assigning the grade of F, for unexcused absences in excess of 25 percent of the regularly scheduled weekly mentor meetings.

STUD-SENA-332 also lists the valid circumstances for an excused absence, notably:

- Incapacitating illness
- Official representation of the University (excuses for official representation of the University should be obtained from the official supervising the activity)
- Death of a close relative, and
- Religious holidays

Honesty: **Coastal Carolina University's Statement of Community Expectations:**
Coastal Carolina University is an academic community that expects the highest standards of honesty, integrity and personal responsibility. Members of this community are accountable for their actions and reporting the inappropriate action of others and are committed to creating an atmosphere of mutual respect and trust.

Contingencies: If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.

Communication: I will try to respond to emails within one business day. Please use your @coastal.edu email.

ADA statement: Coastal Carolina University is committed to equitable access and inclusion of individuals with disabilities in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Individuals seeking reasonable accommodations should contact Accessibility & Disability Services (843-349-2503 or https://www.coastal.edu/disabilityservices/).

Revisions: This syllabus describes the course as best it can. The instructor reserves the right to make changes in its content. If changes must be made to it during the semester, students will be immediately notified.