Department of Civil Engineering
College of Engineering
King Saud University

CE 496 Graduation Project - 1

Credit and Contact hours	2 / 2 (Lectures), 0 (Tutorials), 0 (Laboratory)
Required, or Elective	Required for a BSCE degree
Course Description	This is the first phase of the capstone design project that is a continual project over two semesters, and involves number of students working as one team tackling different aspects of the civil engineering works. This phase introduces knowledge of ethical responsibilities, public policies, administration, leadership, and contemporary issues related to Civil Engineering practice. It also includes project selection, data collection, identification of real-life constraints (e.g. economy, environmental, global, and contemporary issues), generation of possible design alternatives considering client needs, selection of the preferred alternative, and preparation of a work plan for implementing and completing the project. All work conducted during the semester must be compiled in a final report and orally presented to the examining committee.
Prerequisites or Co-requisites	All Engineering General Courses, All Civil Engineering Core Courses
Course Learning Outcomes	Students completing this course successfully will be able to

Course Learning Outcomes	***Related Student Outcomes (SO)***
CLO 1 - Identify real-life engineering complex problem addressing various civil engineering specialties	**SO1**
CLO 2 - Formulate the problem, covering methodology of integrating knowledge drawn from previous courses and information	**SO1**
CLO 3 – Recognize alternative designs method/s covering the design viability and evaluation criteria and select the preferred alternative	**SO2**
CLO 4 - Recognize ethical and professional responsibilities in context of global, economic, environmental and societal situations	**SO4**
CLO 5 - Work effectively as a member of the project team providing conducive environment and good leadership	**SO5**

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<tr><td>CLO 6 - Establish goals and plan tasks to accomplish objectives for the project using planning techniques to ensure proper project timing and budgeting</td><td>SO5</td></tr>
<tr><td>CLO 7 - Prepare technical report and present the results orally to the audience</td><td>SO3</td></tr>
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<tr><td>Student Outcomes</td><td>SO1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics [ABET 1].
SO2: 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 [ABET 2].
SO3: An ability to communicate effectively with a range of audiences [ABET 3].
SO4: 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 [ABET 4].
SO5: 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 [ABET 5].</td></tr>
<tr><td>Topics Covered</td><td>In this course, the student is introduced to knowledge of professional and ethical responsibilities, public policies, administration, leadership, and contemporary issues related to Civil Engineering practice. The student tasks, also, include project selection, data collection, identification of real-life constraints (e.g. economy, environmental, global, and contemporary issues), generation of possible design alternatives considering client needs, and preparation of a work plan for implementing and completing the project. All work conducted during the semester must be compiled in a final report</td></tr>
<tr><td>Textbook(s) and Other Required Material</td><td>Codes, Text Books, Published Research Papers and Design Manuals relevant to the assigned Project Topic.</td></tr>
<tr><td>Instructors-Coordinators</td><td>All CE faculty with the coordination with the Capstone Design Project Committee</td></tr>
<tr><td>Grading System</td><td>Project work evaluated by the supervisor and co-supervisor 50%
Midterm (Presentation) 20%
Final Exam (Report + Presentation) 30%</td></tr>
<tr><td>Date of Review</td><td>November, 2020</td></tr>
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