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| **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) |
| **Instructors-Coordinators** | Prof. A. Al-Suhaibani (2A43/2), Prof. Shehab Mourad (2A38), Prof M. Iqbal Khan (2A83) |
| **Textbook(s) and Other Required Material** | Codes, Text Books, Published Research Papers and Design Manuals relevant to the assigned Project Topic. |
| **SPECIFIC COURSE INFORMATION** | |
| **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 |
| **Required, Elective, or Selected Elective** | Required for a BSCE degree |
| **SPECIFIC GOALS FOR THE COURSE** | |
| **Course Learning Outcomes** | Students completing this course successfully will be able to  CLO 1 - Recognize the professional and ethical responsibility, key concepts used in management, business, public policy, public administration, leadership principles and licensure  CLO 2 - Identify the problem based on realistic needs and operation constraints  CLO 3 - Acquire the related background information, data, knowledge and experiences from credible sources  CLO 4 - Formulate the problem, covering methodology of integrating knowledge drawn from previous courses and information and address the realistic constraints  CLO 5 - Generate design alternatives, set methods for their evaluation (covering the design viability and evaluation criteria), and select the preferred alternative  CLO 6 - Develop an effective plan for the project using planning techniques to ensure proper project timing and budgeting  CLO 7 - Work effectively as a member of the project team  CLO 8 - Prepare the project report and present the results orally |
| **Student Outcomes** | SO 1 - An ability to apply knowledge of mathematics, science, and engineering  SO 3 - An ability to design a system, component, or process to meet desired needs with realistic constraints such as economic, environmental, social, ethical, health and safety, and sustainability  SO 4 - An ability to function on multi-disciplinary teams  SO 5 - An ability to identify, formulate, and solve engineering problems including the ability to evaluate and synthesize information and develop alternative solutions  SO 6 - An understanding of professional and ethical responsibility  SO 7 - An ability to articulate professional ideas clearly and prepare written materials, graphical communications and make oral presentations  SO 11 - An ability to use the techniques, skills and modern engineering tools necessary to civil engineering practice  SO 12 - An ability to understand and explain the key concepts used in management, business, public policy, public administration, leadership principles, and licensure |
| **Topics Covered** | 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 |
| **Grading System** | **Supervisor: 40%**  Based on Student’s Semester Work  (Motivation, Progress, Participation and Overall performance)  (Final Report (Report Organization and Main Body)  **Examination Committee: 60%**  **Mid-Term- 20%, Final – 40%)**  *Presentation Evaluation* (Style, Organization, Technical Content and Presentation Skills and Student’s competency)  *Report Evaluation* (Report Organization, Writing Quality, Main Body of the Report, Design Methodology, Results and Discussions, Capstone Aspect, Terminal Sections)  **Proposal/First lecture attendance (5%)** |