1. CEE 4950 – Senior Design Project

2. Course credit hours: 3
   Contact hours per week: 6
   Credit category: Engineering Topics (Significant Design)

3. Course coordinator: Steven Click

4. Textbook: N/A

   Supplemental materials: N/A; variety of codes and standards, as applicable

5. Course information:

2020 Catalog description	Comprehensive design project of civil engineering projects using a team approach.
Prerequisite(s)	Consent of instructor
Course type	Required

6. Course instructional outcomes:

Course Outcome No.	Course Outcome (CO)	ABET Student Outcome
CO1	Apply engineering knowledge to determine a viable solution to a realistic engineering project	1, 2, 4
CO2	Find and use resources beyond those covered in engineering classes to support my work on a realistic engineering project	7
CO3	Work cooperatively in a team environment to complete a realistic engineering project	5
CO4	Prepare a formal technical report which presents both methodology and solution to a realistic engineering project	3
CO5	Prepare materials for and give an oral report which presents both methodology and solution to a realistic engineering project	3

ABET criterion 3 Student Outcomes addressed by this course:

SO No.	Student Outcome (SO)
3.1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
3.2	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
3.3	An ability to communicate effectively with a range of audiences
3.4	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

3.5	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
3.7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

7. Course topics:
    1. Course introduction
    2. How to prepare a technical report
    3. How to prepare and give a technical presentation
    4. Management and leadership in engineering
    5. Interim and final presentations
    6. Project working time

8. Program criteria (curriculum) addressed by this course:
    1. Apply knowledge of mathematics through differential equations, calculus-based physics, chemistry, and at least one additional area of basic science
    2. Analyze and solve problems in at least four technical areas appropriate to civil engineering
    3. Design a system, component, or process in at least two civil engineering contexts
    4. Include principles of sustainability in design
    5. Explain basic concepts in project management, business, public policy, and leadership

9. Additional topics, assignments, or requirements for dual-level (4000/5000) course:
   N/A

10. Date: 07/14/2020