1. CEE 4510 – Engineering Management
   (also listed as ENGR 4510 – Engineering Management)

2. Course credit hours: 3
   Contact hours per week: 3
   Credit category: Engineering Topics (2 credits)
   Other (1 credit)

3. Course coordinator: Jessica Oswalt

4. Textbook: Managing Engineering and Technology, 7th edition, by Lucy C. Morse, William J. Schell, and Daniel L. Babcock, 2020.

   Supplemental materials:
   Approved management/leadership book or technical articles of student's choice

5. Course information:

2020 Catalog description	Management theory applied to engineering and technical organizations. Topics include management functions in an engineering context; engineering techniques and tools for management; project management; management/leadership of technical people and teams; and contemporary engineering management topics, e.g., rapid technological change and globalization.
Prerequisite(s)	Senior standing in an engineering discipline
Course type	Selected Elective

6. Course instructional outcomes:

Course Outcome No.	Course Outcome (CO)	ABET Student Outcome
CO1	Understand and explain the management functions of planning, organizing, leading, and controlling and be able to apply appropriate engineering techniques for those functions	4
CO2	Demonstrate an ability to apply project management techniques	5
CO3	Evaluate engineering/management/leadership strengths and weaknesses and develop a strategic plan	--
CO4	Demonstrate learning from a source beyond the textbook	7

ABET criterion 3 Student Outcomes addressed by this course:

SO No.	Student Outcome (SO)
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. Historical development of engineering management
    2. Achieving effectiveness as an engineer in management
    3. Leading technical people and teams
    4. Planning and forecasting
    5. Decision-making
    6. Organizing, including organizational structure and human aspects
    7. Establishing metrics and controlling technical organizations
    8. Planning, selecting, organizing, leading, and controlling projects
    9. Analyzing project risk; managing projects in an engineering-centric organization
    10. Preparing for globalization, cultural difference, and engineering management challenges for the future
    11. Preparing for lifelong learning; book reports

    Program criteria (curriculum) addressed by this course:
    1. Explain basic concepts in project management, business, public policy, and leadership

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

9. Date: 07/15/ 2020