1. **Course Name:** CIVE.4850 Capstone Design

2. **Credits and Contact Hours:** 3 credit hours, 3 contact hours

3. **Instructor/Course Coordinator:** Paul DeStefano, Ph.D., P.E.

4. **Textbook:** None.
   a. **Other supplemental reference materials on reserve in UML library:**
      - International Building Code 2015
      - International Mechanical Code 2015
      - International Energy Code 2015
      - 2017 ASHRAE Handbook
      - ASHRAE Standard 90.1 (2016)
      - ASCE 7-10 Minimum Design Loads For Buildings and Other Structures
      - R.S. Means Construction Cost Data 2018
      - Massachusetts Building Code-780CMR

5. **Specific Course Information**
   a. **Catalog Description:**
      Introduction to the essentials of engineering design and a forum for practicing the design process. Integrates many elements of the curriculum through a comprehensive design project to professional standards. Project includes the use of open-ended design problems, feasibility and impact analysis, complete design process, consideration of alternative solutions, and cost estimation and scheduling. Students practice team effort, development of a system perspective, communication skills, reporting, and presentations.

   b. **Prerequisites or co-requisites:** Senior Status

   c. **Required course for BSCE degree**

6. **Specific Course Goals:**
   Upon completion of this course, a student should be able to:
   1. Prepare and submit interdisciplinary engineering planning and design documents for the selected civil engineering project/s in accordance with local, state, and federal regulations.
   2. Prepare and submit budget estimates for the selected civil engineering project/s.
   3. Prepare and present design progress to the owner/client in a formal setting.
   4. Evaluate existing conditions of a site and/or facility and determine project design criteria according to local, state, and federal regulations. Prepare and submit condition assessment reports and design criteria.
   5. Communicate effectively with team members and the owner/client throughout the design process to identify important design issues and corrective action.
   6. Conduct an effective quality review of documents prepared by other team members.
7. **Topics Covered:**
   a. Project Design Criteria
   b. Project Scheduling and Control
   c. Condition Assessment Reports
   d. Design Development Plans
   e. Technical Presentation Fundamentals
   f. Cost Estimating
   g. Project Specifications

**Relation of Course Goals to ABET Criterion 3.**

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*Prepared by: Paul DeStefano PhD, PE  Date: October 2018*