1. Course number and name

   ENGR 429: Construction Management

2. Credits and contact hours

   3 credit hours; three 50-minute lecture sessions/week, or two 1-hr-15-minute lecture sessions/week, depending on semester

3. Instructor’s or course coordinator’s name

   Instructor: Sikandar Khatri, Instructor
   Course coordinator: Ghassan Tarakji, Professor of Civil Engineering

4. Text book, title, author, and year

   None

   a. other supplemental materials

   None

5. Specific course information

   a. brief description of the content of the course (catalog description)

   Construction engineering and management; professional practice and ethics; planning and scheduling, network diagrams, scheduling computations, resource management, computer applications; cost estimating; bidding and contracting

   b. prerequisites or co-requisites

   ENGR 235: Surveying
   ENGR 430: Soil Mechanics (may be taken concurrently).

   c. indicate whether a required, elective, or selected elective course in the program

   Required for Civil Engineering

6. Specific goals for the course

   a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.

      • The students will demonstrate an understanding of the characteristics of the construction industry and the challenges facing it.
      • The students will demonstrate familiarity with the environment of engineering professionalism, including licensing requirements and professional regulations.
      • The students will demonstrate familiarity with pertinent code(s) of ethics and an understanding of, and an appreciation for the ethical obligations of engineers.
      • The students will demonstrate an understanding of the safety issues in construction projects and familiarity with construction safety programs.
      • The students will demonstrate an understanding of network diagrams as used in CPM and PERT.
Template for ABET course syllabi (new format)

- The students will demonstrate the ability to perform scheduling computations, including activity start and finish times, floats, and determining the effect of activity crashing on project duration and cost.
- The students will demonstrate an understanding of scheduling software commonly used in the construction industry (e.g. PRIMAVERA), and the ability to use it in simple scheduling problems.
- The students will demonstrate the ability to perform quantity take-off, obtain unit prices, and estimate project costs.
- The students will demonstrate an understanding of the contractual relationships in construction.
- The student will research and analyze a specific area in the field of construction management, and document the work in a professional quality technical report.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
   Course addresses ABET Student Outcome(s): [k,f]

7. Brief list of topics to be covered
   - Overview of the construction industry
   - Contractual relationships in construction
   - Professional practice and ethics
   - Construction safety
   - Network diagrams (Arrow and Precedence)
   - Project planning and scheduling
   - Crashing
   - Time-scale networks
   - Resource management
   - Introduction to PERT
   - Computer applications in project scheduling
   - Estimating
   - Bidding and contracting