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: G. Tarakji, Professor of Civil Engineering
   
   Course coordinator: Ghassan Tarakji, Professor of Civil Engineering

4. **Text book, title, author, and year**
   

5. **Specific course information**
   
   **s. brief description of the content of the course (catalog description)**
   
   Construction engineering and management; professional practice and ethics; bidding and contracting; planning and scheduling, network diagrams, scheduling computations, resource management, computer applications; cost estimating; construction safety.

   **t. prerequisites or co-requisites**
   
   ENGR 235: Surveying

6. **Specific goals for the course**
   
   **m. 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 an understanding of the contractual relationships in construction.
   - 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 network diagrams as used in CPM and PERT.
• 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 safety issues in construction projects and familiarity with construction safety programs.

n. 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):

B3: Engr. Tools, software, instrumentation

C3: Professional ethics

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