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**  
   
   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; bidding and contracting; planning and scheduling, network diagrams, scheduling computations, resource management, computer applications; cost estimating; construction safety.
   
   b. **prerequisites or co-requisites**  
      ENGR 235: Surveying
   
   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 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.
Template for ABET course syllabi (new format)

- 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.

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):
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