School of Engineering
ABET course syllabus (Construction Management)

1. Course number and name
   941521: Construction Management

2. Credits and contact hours
   3 Credit Hours
   Mon., Wed.: 11:00-12:30; otherwise by e-mail (m.thneibat@ju.edu.jo) or Appointment

3. Instructor's name
   Instructor: Mujahed M. Thneibat, Assistant Professor of Civil Engineering

4. Text book, title, author, and year

   a. other supplemental materials
   • Construction Project Scheduling, Callahan, Quackenbush, and Rowings, McGraw-Hill Editors, 1992

5. Specific course information
   a. Description
      Planning, construction management concepts, Network-analysis using arrow techniques Network analysis using precedence technique, overlapping networks, project monitoring, project control, time-cost trade off, resource leveling, PERT.
   b. prerequisites or co-requisites
      Prerequisite: none
   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.
      • The student will be able to describe different scheduling techniques used for construction projects.
      • The student will be able to carry out a work breakdown structure for construction projects.
      • The student will be able to schedule construction projects using different techniques.
      • The student will be able to compute the early and late start dates, early and late finish dates, project duration, and floats.
      • Student will be able to perform time-cost trade-off.
      • Student will be able to demonstrate the use of resource levelling.
   b. Students' outcome
      Course addresses the following ABET student outcomes:
      • Student outcome (f): an understanding of professional and ethical responsibility.
      • Student outcome (k): an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

7. Brief list of topics to be covered
   • Introduction
- Importance of planning and scheduling
- Bar charts
- WBS
- Developing a Network Model
- Precedence Diagram
  - Logic pattern
  - Sequence step
  - Drawing
  - Critical path
  - Floats
  - Link relationships
  - Redundancy
- Establishing Activity Durations
  - Time interval
  - Weather and contingency
- Resource Allocation and Resource Levelling
- Time-Cost Adjustment
  - Activity time concept
  - Time-cost relationship
- Project Control
  - Level of control
  - Project monitoring
- Linear Scheduling
- PERT
- Scheduling Techniques
  - Arrow networks
  - Drawing the network