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
- Construction Planning and Scheduling, Hinze, Jimmie W., Pearson/Prentice Hall, 2004.
- Scheduling Construction Projects, Weber, Sandra, Pearson/Prentice Hall, 2005.

a. other supplemental materials
- Construction Project Scheduling, Callahan, Quackenbush, and Rowings, McGraw-Hill Editors, 1992
- Project Management for Engineering and Construction, Oberlender, G. D., McGraw Hill Inc. 1993.
- Precedence and Arrow Networking Techniques for construction, Harris, R.I., John Wiley & Sons Inc., 1978.

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