NJIT New Jersey's Science & Technology University

School of Applied Engineering and Technology
Department of Engineering Technology
Construction Engineering Technology Program
Course Syllabi

Course Number and Name: CET 415, Construction Project Management

Credits and Contact Hours: Credits - 3; Contact Hours – 1.5 Hour Lectures, twice a week

Course Coordinator's Name: John A. Wiggins, P.E., Senior University Lecturer & Program Coordinator

Text Book and Supplemental Materials: Project Management for Construction, C. Hendrickson and T. Au., 1989, Prentice Hall Publishing, ISBN 0-13-2791266-0. The book is not available for purchase but is only available online at https://www.cmu.edu/cee/projects/PMbook/

Supplemental Materials: "Engineering News- Record", www.enr.com. Students are required to either purchase a subscription or have weekly access to the latest issue of Engineering News Record for their weekly assignment.

Specific Course Information

a. Brief Description of the content of the course

An introduction to construction management and administration methods and procedures including the design and construction process, project organizational structure, construction planning, contract administration, records and reports, financial management, risk analysis, manual and computerized GANTT and CPM scheduling, change orders and extra work, claims and disputes, cost accounting and document tracking.

b. Prerequisites or Co-requisites: Senior Standing in CET or CMT

c. Course Status: Required Course

Specific Goals for the Course

a. Specific Outcomes of Instruction

Upon completion of the course, each student will be able to:

1. Utilize design, construction and operations documents to administer a construction contract.
2. Apply sound management and technical principles in the operation of a construction project.
3. Perform economic analyses and cost estimates related to the design, construction and maintenance of systems in the construction industry; specifically, the use of estimating and scheduling software.
4. Select appropriate construction materials and practices in the management of a construction contract.
5. Apply principles of construction law and ethics in administering a construction contract.
6. Apply basic technical concepts to the solutions of construction problems involving construction scheduling and management using MS project and excel.

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b. Relation to Student Outcomes

Student Outcome (1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly defined engineering problems appropriate to the discipline;

Student Outcome (3) an ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;

Student Outcome (5) an ability to function effectively as a member as well as a leader on technical teams.

Program Criteria a. utilization of techniques that are appropriate to administer and evaluate construction contracts, documents, and codes;

Program Criteria b. estimation of costs, estimation of quantities, and evaluation of materials for construction projects;

Program Criteria c. utilization of measuring methods, hardware, and software that are appropriate for field, laboratory, and office processes related to construction;

Program Criteria d. application of fundamental computational methods and elementary analytical techniques in sub-disciplines related to construction engineering;

Program Criteria e. production and utilization of documents related to design, construction, and operations;

Program Criteria f. performance of economic analyses and cost estimates related to design, construction, and maintenance of systems associated with construction engineering;

Program Criteria g. selection of appropriate construction materials and practices; application of appropriate principles of construction management, law, and ethics;

Program Criteria i. performance of standard analysis and design in at least one sub-discipline related to construction engineering.

Brief list of topics covered

The Design, Bidding and Construction Process , Cost Estimating, Economic Evaluation of Facility and Equipment Investments, Finance for the Industry, Construction Planning, Scheduling, Quality Control and Safety during Construction, Cost Control, Monitoring and Accounting