



## COURSE OUTLINE

<b>Course Number</b> BCT 236	<b>Course Title</b> Construction Project Administration and Management	<b>Credits</b> 3
<b>Hours:</b> lecture/Lab/Other 3/0	<b>Co- or Pre-requisite</b> BCT 232 Construction Estimating BCT234 Construction Contracts and Specifications	<b>Implementation</b> sem/year Spring 2014

### Catalog description (20014-2015 Catalog)

#### **Construction Project Administration and Management**

Introduction to the principles of construction project administration and management, Including the design/construction process, contract documents, organization of the construction firm, subcontractor relationships, records and reports, construction safety, and quality control. Bar chart and critical path method scheduling are covered. Introduction to several commonly-used computer applications for construction administration and management. 3/0

**Is course New, Revised, or Modified?    new**

**Required texts/other materials:**

**Revision date: Fall 2021      Course coordinator: James Maccariella, maccarij@mccc.edu**

**Information resources:**

**Other learning resources**

## **COURSE DESCRIPTION**

Introduction to the principles of construction project administration and management, Including the design/ construction process, contract documents, organization of the construction firm, subcontractor relationships, records and reports, cost control methods and procedures, schedule control, construction safety, and quality control. Bar chart and critical path method scheduling are covered. Introduction to several commonly-used computer applications for construction administration and management. 3/0

## **I. GENERAL OBJECTIVES**

- Interpret construction documents for conformity with construction codes and regulations
- prepare construction project schedules showing the logical sequence of activities and time duration, and establish a project plan in order to monitor progress and update schedules
- identify and execute construction safety standards including the ability to interpret OSHA construction standards, establish safety and health procedures on the job site, and enforce safety procedures.
- demonstrate knowledge of the science of materials and methods of construction as they apply to the Construction Specifications Institute (CSI) Divisions.
- identify established surveying procedures for identifying distance and elevations from known points and layout the project in accordance with construction document drawings, and site information.
- demonstrate knowledge of overall field administration, evaluating vendors and subcontractors, processing payment applications, maintaining field records , change orders, subcontract agreements, shop drawings, daily job and construction reports.

### **UNIT I: Project Planning and Safety Management**

*The student will be able to...*

- Identify the importance of pre-planning and its correlation with a company's bottom line.
- Outline and Discuss the pre-planning process. and planning tools.
- Demonstrate team building techniques within the pre-planning process.
- identify and execute construction safety standards including the ability to interpret OSHA construction standards, establish safety and health procedures on the job site, and enforce safety procedures.
- Identify techniques for integrating safety into the overall construction process.
- Describe how an unsafe jobsite impacts a company's bottom line and jeopardizes future projects.
- Define legal terms pertaining to safety: imminent danger, exclusive remedy, gross negligence, substantial certainty and others.
- Discuss ways to build a culture of zero accidents.

### **UNIT II: Construction Productivity and Critical Path Method (CPM) Scheduling**

*The student will be able to...*

- Identify reasons for low job site productivity.
- Discuss the impact of low job site productivity on the project contractor, craftsman, project owner and designer.
- Identify practices to ensure each worker is part of the overall project team.
- Analyze models to measure, predict and improve job site productivity.
- Identify environmental factors that impact productivity.
- Describe how to apply short interval schedules and job schedules to increase field productivity.
- Develop a work plan to increase field productivity.
- Identify ways to plan and schedule work more efficiently using Critical Path Method (CPM) scheduling.
- Analyze modern scheduling techniques including the CPM schedule, bar charts, computer printouts and plots.
- Identify how to use the CPM schedule as a tool for avoiding or documenting future claims.
- Discuss the importance of regular updates to the CPM schedule.

### **UNIT III: Subcontractor & Vendor Management**

*The student will be able to...*

- Discuss information required to evaluate and select subcontractor and vendor services and material and equipment purchases.
- Demonstrate how to prepare documents for the purchase of the services mentioned above.
- Describe how these documents aid in maintaining a project within budget, on schedule and with reduced claim potential.
- Identify effective techniques for dealing with new subcontractors vs. experienced subcontractors.

### **UNIT IV: Claims Management; Legal Issues & Contract Clauses**

*The student will be able to...*

- Illustrate techniques for completing projects with a minimum amount of disputes using effective document control.
- Examine specifications and contract language.
- Identify a process for managing change orders.
- Describe the difference between arbitration, mediation, litigation and alternative dispute resolution.
- Identify actions, or lack thereof, that can have far-reaching legal consequences for the project manager, their company and many others.
- Identify specific areas where caution is necessary in order to avoid legal problems.

### **UNIT V: Cost Control and Project Recordkeeping**

*The student will be able to...*

- Identify the project manager's role in cost control.
- Discuss the importance of tracking job costs.
- Examine sample report forms used throughout the project in order to demonstrate the need for meaningful cost budgets.
- Illustrate cost analysis through the use of examples.
- Explain how good cost control practices and forecast probable final project cost.
- Examine the various types of project records that must be generated, tracked and stored to increase project efficiency and prevent legal issues.
- Analyze the project manager's role in ensuring that project records are being properly maintained to avoid future conflicts and support claims.
- Discuss capabilities of various software packages to assist with the recordkeeping process.

### **UNIT VI: Human Resource; Time Management and Decision Making**

*The student will be able to...*

- Identify an effective performance review model.
- Learn how to use performance reviews as positive communication and benchmarking tools.
- Discuss human resource issues that can have implications for project managers, employees and their companies.
- Develop an understanding of how to manage time effectively.
- Demonstrate how personal behavior affects time management.
- Examine time management techniques that can be used on the job.
- Identify tools and approaches for creative problem solving and decision making.
- Discuss how to use decision making techniques in current challenges through classroom exercises.
- Develop basic negotiation skills for problem solving and issue resolution.

## **UNIT VII: Leadership Styles & Communications and Construction Ethics**

*The student will be able to...*

- Identify how each personality trait leads to effective leadership in problem solving, communications and teamwork.
- Describe the correlation between communication skills, personal leadership strategies and high performing teams.
- Illustrate techniques for effective oral and written communications.
- Distinguish between listening and hearing.
- Identify strategies to conduct effective meetings.
- Recognize a deeper understanding and role of ethical practices in the construction industry.
- Assess ethical situations that arise in normal construction business operations.
- Recognize the importance and consequences of one's actions when making ethical decisions.

## **II. EVALUATION**

Each assignment or project will be evaluated on completeness, appearance, compliance, and effort displayed. Compliance with directions and effort shown by good work turned in when due and evidence of research will lead to the better grades.

Tests will be given which will cover material, terms, definitions, and items presented in lecture or assigned from the texts or accompanying literature.

- **Assignments:** All assignments will be graded on an A to F basis. Late assignments will be subject to grade reductions of one letter grade per class session. Assignments not turned in will be recorded as a zero grade.
- **Quizzes:** Quizzes may be given at any time during the class. They may be written or performance based, and students may or may not be given prior notice. Quizzes missed because of student absence may not be made up and will be recorded as a zero.
- **Final Grade Calculation:** Your final grade will be calculated by averaging all of your grades and weighing them as indicated above.
- **Final Examination or project:** The to require a comprehensive final examination. the final examination will comprise twenty-five percent (25%) of the final grade for the course.

## **V. Academic Integrity Statement:**

Students are expected to comply with the college-wide requirements for academic integrity. Mercer County Community College is committed to Academic Integrity—the honest, fair, and continuing pursuit of knowledge, free from fraud or deception. This implies that students are expected to be responsible for their own work. Presenting another individual's work as one's own and receiving excessive help from another individual will qualify as a violation of Academic Integrity. The entire policy on Academic Integrity is located in the Student handbook and is found on the college website ([http://www.mccc.edu/admissions\\_policies\\_integrity.shtml](http://www.mccc.edu/admissions_policies_integrity.shtml)).

## **VI. Special Needs Students Statement**

Any student in this class who has special needs because of a disability is entitled to receive accommodations. Eligible students at Mercer County Community College are assured services under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. If you believe you are eligible for services, please contact Arlene Stinson, the Director of Academic Support Services. Ms. Stinson's office is LB221, and she can be reached at (609) 570-3525.