

Course Outline of Record

1. Course Code: CM-005
2.
 - a. Long Course Title: Construction Planning
 - b. Short Course Title: CONSTRUCT PLANNING
3.
 - a. Catalog Course Description:

This course covers the concepts used in planning, scheduling and control of construction projects. Use of graphic charts and the Critical Path Method (CPM) are featured. Also covered are Program Evaluation and Review Techniques (PERT), time assignment and computation, diagramming practices, monitoring, and updating.
 - b. Class Schedule Course Description:

This course reviews construction planning, controlling and scheduling utilizing the Critical Path Method (CPM); and covers Program Evaluation and Review Techniques (PERT) for student understanding and application of the most current technologies in construction.
 - c. Semester Cycle (if applicable): Fall Semester
 - d. Name of Approved Program(s):
 - CONSTRUCTION MANAGEMENT AS Degree for Employment Preparation
4. Total Units: 3.00 Total Semester Hrs: 54.00
 Lecture Units: 3 Semester Lecture Hrs: 54.00
 Lab Units: 0 Semester Lab Hrs: 0
 Class Size Maximum: 28 Allow Audit: No
 Repeatability No Repeats Allowed
 Justification 0
5. Prerequisite or Corequisite Courses or Advisories:

Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm I-A)

 Advisory: MATH 060 and
 Advisory: RDG 061
6. Textbooks, Required Reading or Software: *(List in APA or MLA format.)*
 - a. Baldwin, Andrew and Bordoli, David (2014). A Handbook for Construction Planning and Scheduling (Latest/e). Chichester, West Sussex Wiley and Sons. ISBN: 978-0-470-670
 College Level: Yes
 Flesch-Kincaid reading level: 12.2
7. Entrance Skills: *Before entering the course students must be able:*
 - a. Compute using the four basic operations of addition, subtraction, multiplication, and division on the Whole Numbers, Integers, and Rational Numbers.
 - MATH 060 - Compute using the four basic operations of addition, subtraction, multiplication, and division on the rational numbers in both fraction and decimal form.
 - MATH 060 - Apply the basic operations to solve application problems that involve whole numbers, integers, and rational numbers.
 - b. Know the use of rounding and estimation and use these skills to solve problems.
 - MATH 060 - Use rounding and estimation to solve problems involving rational numbers.
 - c. Use various reading strategies to prepare, read and comprehend expository text.
 - RDG 061 - Use SQ3R &/or SOAR along with outlining, note-taking, mapping summarizing and other strategies to prepare, read, & comprehend expository text.
 - d. Read a variety of texts fluently.

- RDG 061 - Read a variety of texts fluently.

e.

Write organized summaries & reactions that capture main idea and supporting details.

- RDG 061 - Write organized summaries & reactions that capture main idea and supporting details.

f.

Understand multiple word meanings, uses & synonyms

- RDG 061 - Understand multiple word meanings, uses & synonyms

8. Course Content and Scope:

Lecture:

- a. Course Overview
- b. History of Scheduling Systems and Recent Developments
- c. CPM and the Building Team
- d. Phases of CPM
- e. General Principles
 - i. Inputs,
 - ii. Outputs
- f. Use of CPM vs PERT as a Planning Tool
- g. Bart Charts
- h. Cash Requirement Predictions
- i. Resource Estimates
 - i. Start and Finish Dates
 - ii. Revisions
- j. Planning Phase
 - i. Arrow Diagrams
 - ii. Cost Estimates
 - iii. Resource Estimates
 - iv. Responsibility Code
- k. Scheduling Phase
 - i. Production analysis Crash Points
 - ii. Normal Points
- l. Control Monitor Phase
 - i. Construction Status Report
 - ii. Monitor Report
- m. Manual and Computer-Aided Calculations
- n. Multi-Schedule Production
 - i. Detail Production
 - ii. Scheduling Production
 - iii. Scheduling Problems
- o. Specifying CPM in Construction Documents
- p. Case Studies

Lab: *(if the "Lab Hours" is greater than zero this is required)*

9. Course Student Learning Outcomes:

1. Define and explain the function of the Critical Path Method (CPM) for use on construction projects.
2. Compare and contrast CPM and PERT for construction project planning.
3. Compare the roles of the Architect and the Contractor at the different stages of design and construction.

10. Course Objectives: *Upon completion of this course, students will be able to:*

CM 005-Construction Planning

- a. Define the basic principles of the Critical Path method (CPM)
- b. Explain the function of CPM for use on construction projects.
- c. Utilize graphic techniques to demonstrate the basic principles of CPM as applied to project planning and scheduling.
- d. Distinguish the difference between the use of CPM and PERT for construction project planning.

11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*

- a. Discussion
- b. Lecture

Other Methods:

Handouts relating to subject matter

12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*

In Class Hours: 54.00

Outside Class Hours: 108.00

a. In-class Assignments

a. Building Cost Estimates b. Manual & computer case studies

b. Out-of-class Assignments

a. Textbook Chapter questions b. Graphic Charts c. Building Cost Estimates d. Manual & computer case studies e. Chapter reading

13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*

- Written homework
- Mid-term and final evaluations
- Student participation/contribution

14. Methods of Evaluating: Additional Assessment Information:

15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*

PO - Career and Technical Education

Apply critical thinking skills to research, evaluate, analyze, and synthesize information.

IO - Scientific Inquiry

Collect and analyze data. Skills of data collection include an understanding of the notion of hypothesis testing and specific methods of inquiry such as experimentation and systematic observation.

Analyze quantitative and qualitative information to make decisions, judgments, and pose questions.

IO - Critical Thinking and Communication

Apply principles of logic to problem solve and reason with a fair and open mind.

16. Comparable Transfer Course

University System	Campus	Course Number	Course Title	Catalog Year
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17. Special Materials and/or Equipment Required of Students:

18. Materials Fees: Required Material?

Material or Item	Cost Per Unit	Total Cost
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19. Provide Reasons for the Substantial Modifications or New Course:

Change the advisory and entrance skills to Reading 061, addition of one SLO, and periodic review.

- 20. a. Cross-Listed Course *(Enter Course Code):* N/A
- b. Replacement Course *(Enter original Course Code):* N/A

21. Grading Method (*choose one*): Letter Grade Only

22. MIS Course Data Elements

- a. Course Control Number [CB00]: CCC000131940
- b. T.O.P. Code [CB03]: 95700.00 - Civil and Construction Ma
- c. Credit Status [CB04]: D - Credit - Degree Applicable
- d. Course Transfer Status [CB05]: B = Transfer CSU
- e. Basic Skills Status [CB08]: 2N = Not basic skills course
- f. Vocational Status [CB09]: Advanced Occupational
- g. Course Classification [CB11]: Y - Credit Course
- h. Special Class Status [CB13]: N - Not Special
- i. Course CAN Code [CB14]: N/A
- j. Course Prior to College Level [CB21]: Y = Not Applicable
- k. Course Noncredit Category [CB22]: Y - Not Applicable
- l. Funding Agency Category [CB23]: Y = Not Applicable
- m. Program Status [CB24]: 1 = Program Applicable

Name of Approved Program (*if program-applicable*): CONSTRUCTION MANAGEMENT

Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.)

23. Enrollment - Estimate Enrollment

First Year: 28

Third Year: 28

24. Resources - Faculty - Discipline and Other Qualifications:

- a. Sufficient Faculty Resources: Yes
- b. If No, list number of FTE needed to offer this course: N/A

25. Additional Equipment and/or Supplies Needed and Source of Funding.

N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. (*Explain:*)

N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES

Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Donbert M. Bitanga Origination Date 11/06/17