

Course Outline of Record

1. Course Code: ACT-020
2.
  - a. Long Course Title: Introduction to Construction Technology
  - b. Short Course Title: INTRO TO CONST TECH
3.
  - a. Catalog Course Description:
 

This course provides students with in-depth analysis of the organization and structure of the construction industry and the many career choices the industry offers. The course emphasizes green construction practices, job-site safety, practical knowledge of tool and equipment use, basic construction math, basic rigging techniques, and communication as well as employ ability skills. Guest speakers and site visits provide the students a wide view of the expectations of entry-level work, wages, benefits, and work place culture. (Equivalent to CM-020.)
  - b. Class Schedule Course Description:
 

This course emphasizes green construction practices, jobsite safety, practical knowledge of tool and equipment use, basic construction math, basic rigging techniques, and communication as well as employability skills.
  - c. Semester Cycle (if applicable): N/A
  - d. Name of Approved Program(s):
    - CONSTRUCTION MANAGEMENT AS Degree for Employment Preparation
4. Total Units: 3.00      Total Semester Hrs: 90.00  
 Lecture Units: 2      Semester Lecture Hrs: 36.00  
 Lab Units: 1      Semester Lab Hrs: 54.00  
 Class Size Maximum: 20      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: RDG 061 and  
 Advisory: MATH 060
6. Textbooks, Required Reading or Software: (List in APA or MLA format.)
  - a. National Center for Construction Education and Research (NCCER) (2016). Core Curriculum: Introductory Craft Skills (Trainee Guide) (5th/e). Pearson Education, Inc.. ISBN: 9780134130989  
 College Level: Yes  
 Flesch-Kincaid reading level: 11.8
  - b. National Center for Construction Education and Research (NCCER) (2016). Your Role in the Green Environment (Trainee Guide) (3rd/e). Upper Saddle River, NJ Pearson Education, Inc.. ISBN: -  
 College Level: Yes  
 Flesch-Kincaid reading level: 11.8
  - c. Huth, Mark W. (2016). Residential Construction Academy: Basic Principles for Construction (4th/e). Clifton Park, NY CENGAGE Delmar Learning. ISBN: 9781305088627  
 College Level: Yes  
 Flesch-Kincaid reading level: 11.8
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

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rational numbers.

b. Apply the order of operations to simplify expressions involving several operations.

- MATH 060 - Apply the order of operations to simplify expressions involving several operations using rational numbers.

c. Comprehend the concept of a fraction as a part of a whole.

- MATH 060 - Apply methods of conversion between percents, decimals, and fractions.

d. Know the concept of a ratio and use ratios to solve proportion problems.

- MATH 060 - Use the concept of ratio to determine the solution to a proportion problem.

e. Comprehend percents and convert between percents, decimals, and fractions.

- MATH 060 - Apply methods of conversion between percents, decimals, and fractions.

f. Recognize and convert between units of measurements in both the American and metric system, especially units of length, volume, and weight.

- MATH 060 - Recognize and convert between units of measurements in the American and metric systems.

g. Use basic concepts and formulas from geometry, including perimeter, area, and volume.

- MATH 060 - Use concepts and formulas from geometry.

h.

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.

i.

Read a variety of texts fluently.

- RDG 061 - Read a variety of texts fluently.

j.

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

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

k.

Understand multiple word meanings, uses & synonyms

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

## 8. Course Content and Scope:

### Lecture:

1. Overview of construction industry and closer examinations of individual trade expectations.
2. Construction safety – hazard recognition and OSHA regulations.
3. Overview of green construction practices.
4. Introduction to basic construction math.
5. Hand and power tool identification and proper use.
6. Overview of basic rigging.
7. Communication skills
8. Employability skills

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

- a. Site visits
- b. Safety demonstration
- c. Hand tool usage and demonstration
- d. Power tool usage and demonstration
- e. Basic rigging demonstration
- f. Mock-up interviews

## 9. Course Student Learning Outcomes:

1. Explain the purpose of Occupational Safety and Health Administration (OSHA) and their regulations for the construction

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industry.

2. Use hand and power tools commonly found in the construction workplace.
3. Recognize alternative construction practices to reduce the impact of construction on the environment.
4. Develop interrelationship and leadership skills in a team scenario.

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

- a. Discuss the apprenticeship requirements and responsibilities for a variety of construction trades.
- b. List the various career paths in the construction industry.
- c. Discuss common safety hazards on construction sites.
- d. Explain the purpose of Occupational Safety and Health Administration (OSHA) and their regulations for the construction industry.
- e. Identify various hand tools used in the construction industry.
- f. Utilize various hand tools.
- g. Identify various power tools used in the construction industry.
- h. Utilize various power tools.
- i. Discuss green construction practices.
- j. Discuss green building rating system.
- k. Understand the impact of construction to the environment.
- l. Discuss alternative construction practices to reduce the impact of construction to the environment.
- m. Solve simple arithmetic functions including addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals.
- n. Demonstrate fluency reading a tape measure.
- o. Recognize and measure basic geometric shapes commonly used in the construction industry.
- p. Identify and describe the use of slings and common rigging hardware.
- q. Describe basic inspection techniques and rejection criteria used for slings and hardware.
- r. Describe basic hitch configurations and their proper connections.
- s. Describe basic load-handling safety practices.
- t. Demonstrate proper use of American National Standards Institute (ANSI) hand signals.
- u. Demonstrate the ability to interpret information and instructions presented in both written and verbal form.
- v. Demonstrate the ability to communicate effectively in on-the-job situations using written and verbal skills.
- w. Demonstrate critical thinking skills and the ability to solve problems using those skills.
- x. Demonstrate effective relationship skills with teammates and supervisors, the ability to work on a team, and appropriate leadership skills.
- y. Understand workplace issues such as sexual harassment, stress, and substance abuse.

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

- a. Discussion
- b. Laboratory
- c. Lecture
- d. Participation

Other Methods:

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

In Class Hours: 90.00

Outside Class Hours: 72.00

a. In-class Assignments

- |   |
|---|
| 1. Individual projects<br>2. Small group projects |
|---|

b. Out-of-class Assignments

- |                     |
|---------------------|
| 1. Review questions |
|---------------------|

- 2. Vocabulary terms
- 3. Short response papers

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

- Written homework
- True/false/multiple choice examinations  
Weekly quizzes
- 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 execute daily duties in their area of employment.
- Display the skills and aptitude necessary to pass certification exams in their field.
- Exhibit effective written, oral communication and interpersonal skills.

IO - Personal and Professional Development

- Develop realistic goals.
- Demonstrate an understanding of ethical issues to make sound judgments and decisions.

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:

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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.

20. a. Cross-Listed Course (*Enter Course Code*): CM-020  
 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]: CCC000513173
- 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]: Clearly 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

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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: 16

Third Year: 20

## 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 11/17/17