

ACT 320B: CONSTRUCTION MATH CONCEPTS

New Course Proposal

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Originator

zbecker

Co-Contributor(s)

Name(s)

Bitanga, Bert

Justification / Rationale

Construction is one of the top employment opportunities in the Coachella Valley and with the new Title 24 requirements for Zero Net Energy construction, there is a need for a more educated construction workforce. This course is one of three modules of a non-credit overlay version of CM 020 Introduction to Construction Technology. Module 1 covers tools, equipment, safety and green concepts; Module 2 provides training and review of the basic math skills required for construction; Module 3 provides an awareness of career opportunities in the construction industry and the employability skills required to succeed in those careers. Providing this non-credit version allows those currently unemployed or underemployed to gain the skills and knowledge required to obtain and succeed in construction jobs; providing the modules as a credit overlay allows students to qualify for credit by exam and move into a credit pathway to continue education.

Effective Term

Fall 2020

Credit Status

Noncredit

Subject

ACT - Applied Construction Technolog

Course Number

320B

Full Course Title

Construction Math Concepts

Short Title

CONST MATH

Discipline

Disciplines List

Construction Technology

Building Codes and Regulations (Inspecting of construction, building codes, contractor training)

Architecture

Carpentry

Construction Management

Plumbing

Electricity (Electrical power distribution)

Modality

Face-to-Face

100% Online

Catalog Description

This course provides students with basic construction math skills.

Schedule Description

Construction Math Skills.

Non-credit Hours

54

Lecture Units

0

Lecture Semester Hours

0

Lab Units

0

Lab Semester Hours

0

In-class Hours

27

Out-of-class Hours

27

Total Course Units

0

Total Semester Hours

54

Override Description

Noncredit courses do not have lecture and lab hours. The out of class hours were adjusted to meet the total hours of the equivalent credit course.

Required Text and Other Instructional Materials**Resource Type**

Book

Author

National Center for Construction Education and Research (NCCER)

Title

Core Curriculum: Introductory Craft Skills (Trainee Guide)

Edition

5th

Publisher

Pearson Education, Inc.

Year

2016

College Level

Yes

Flesch-Kincaid Level

11.8

ISBN #

9780134130989

Resource Type

Book

Author

Huth, Mark W.

Title

Residential Construction Academy: Basic Principles for Construction

Edition

4th

City

Clifton Park, NY

Publisher

CENGAGE Delmar Learning

Year

2016

College Level

Yes

Flesch-Kincaid Level

11.8

ISBN #

9781305088627

Class Size Maximum

30

Course Content

1. Overview of construction industry and closer examinations of individual trade expectations.
2. Introduction to basic construction arithmetic including addition, subtraction, multiplication and division of whole numbers, fractions and decimals.
3. Introduction to basic geometry shapes used in construction.
4. Metric conversions.
5. 3-4-5 rule.
6. Tape measures.

Course Objectives

	Objectives
Objective 1	Solve simple arithmetic functions including addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals.
Objective 2	Demonstrate fluency reading a tape measure.
Objective 3	Recognize and measure basic geometric shapes commonly used in the construction industry.
Objective 4	Demonstrate critical thinking skills and the ability to solve problems using those skills.

Student Learning Outcomes

Upon satisfactory completion of this course, students will be able to:	
Outcome 1	Demonstrate effective use of the arithmetic and geometry skills required for the construction industry.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Lecture	Presentation of topic in context.
Laboratory	Math problems related to the construction industry.

Discussion	Classroom and group discussions of the geometry and arithmetic used in the construction industry.
Participation	Class discussion and questions.
Activity	Hands on demonstrations of appropriate measurement and calculation.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Written homework	Homework assigned from text and worksheets.	Out of Class Only
Student participation/contribution	Participation in lab groups and classroom/online discussion. Labs may include in person or virtual site visits out-of-class.	In and Out of Class
Mid-term and final evaluations	Examinations covering key concepts introduced in the course.	In Class Only
Tests/Quizzes/Examinations	Weekly quizzes on topics covered in class and analysis of job sites. Quizzes completed out-of-class with in-class discussion of answers.	In and Out of Class
Other	Out-of-class hours will be accounted for electronically through the learning management system.	Out of Class Only

Assignments

Other In-class Assignments

1. Individual projects to analyze and evaluate application of arithmetic and geometry requirements for the construction industry.
2. Small group projects to analyze, review, diagnose and evaluate various methods of solution used on homework.
3. Construction arithmetic and geometry problems.

Other Out-of-class Assignments

1. Review questions
2. Arithmetic practice.
3. Completing daily assigned homework and complete pretests.
4. Reading textbook and supplementary assignments.
5. In person or virtual site visits.

Grade Methods

Pass/No Pass Only

Distance Education Checklist

Lab Courses

Instructional Materials and Resources

Effective Student/Faculty Contact

Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

Within Course Management System:

Timely feedback and return of student work as specified in the syllabus
 Discussion forums with substantive instructor participation
 Chat room/instant messaging
 Regular virtual office hours
 Online quizzes and examinations
 Weekly announcements

External to Course Management System:

Direct e-mail

Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.

Timely feedback and return of student work as specified in the syllabus.
Discussion forums with substantive instructor participation.
Online quizzes and examinations.
Weekly announcements.

Other Information**MIS Course Data****CIP Code**

46.0412 - Building/Construction Site Management/Manager.

TOP Code

095700 - Civil and Construction Management Technology

SAM Code

D - Possibly Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience

Not a Coop Course

Course Classification Status

Workforce Prep Enhanced Funding

Approved Special Class

Not special class

Noncredit Category

Workforce Preparation

Funding Agency Category

Not Applicable

Program Status

Program Applicable

Transfer Status

Not transferable

Allow Audit

No

Repeatability

Yes

Repeatability Limit

NC

Repeat Type

Noncredit

Justification

Noncredit courses are repeatable until the student has achieved the skills and knowledge required to meet the objectives and outcomes of the course.

Materials Fee

No

Additional Fees?

No

Approvals**Curriculum Committee Approval Date**

10/17/2019

Academic Senate Approval Date

10/24/2019

Board of Trustees Approval Date

11/13/2019

Chancellor's Office Approval Date

01/10/2020

Course Control Number

CCC000611515

Programs referencing this courseConstruction Technology Framing Carpentry Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=279/>)Construction Technology Introduction Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=280/>)Construction Technology Site Preparation and Layout Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=281/>)Construction Technology Finish Carpentry Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=287/>)Construction Technology Career Preparation Certificate of Completion (<http://catalog.collegeofthedesert.eduundefined?key=292/>)