

Course Outline

COURSE: CARP 203 **DIVISION:** 50 **ALSO LISTED AS:**

TERM EFFECTIVE: Fall 2016 **Inactive Course**

SHORT TITLE: CONSTRUCTION MATH-DRAWINGS

LONG TITLE: Construction Math and Introduction to Working Drawings

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
2	1	Lecture:	30	30
		Lab:	6	6
		Other:	0	0
		Total:	36	36

COURSE DESCRIPTION:

This course covers mathematics applications to the construction trade with specific focus on mathematical processes in carpentry. Topics include an introduction to elements of working drawings used in the construction process.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: C - Credit - Degree Non Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

03 - Lecture/Laboratory

04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

1. The student will mathematically construct and calculate numbers taken from blueprints and buildings.

Measure: Written Homework, Quizzes,

PLO: 2

ILO: 3, 7

GE-LO:

Year assessed or anticipated year of assessment: 2012-13

2. The student will organize and evaluate measurements and symbols from orthographic projections and three-dimensional views of an object.

Measure: Quizzes, Exams

PLO: 2

ILO: 3, 7

GE-LO:

Year assessed or anticipated year of assessment: 2012-13

PROGRAM LEARNING OUTCOMES:

1. Demonstrate journey level skills, including those skills necessary to build all concrete infrastructures that comprise the California transportation system.

2. Locate on the blueprints and in the specifications, the information needed to construct various types of structures and assemble its various components.

3. Perform horizontal layout and vertical layout of wood framed wall components. Install interior and exterior trims and moldings. Construct various types of roofs and stairs.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Inactive Course: 11/28/2016

Out-of class assignments: For each topic, the student will read chapters and do homework assignments at the end of those chapters.

7.0 lec/0.5 lab

CONTENT

A. Measurement

1. Linear measurement

2. Area measurement

3. Volumetric measurement

4. Accuracy

B. Tape measures

SLO: The student will accurately measure and layout objects with a tape measure.

Assignments: Read the chapters covered in the lecture and do the homework exercises at the end of the chapters. Answer the study guide questions on the assigned subject. Accurately measure and layout objects with a tape measure.

7.0 lec/0.5 lab

C. Basic mathematics

1. Fractions

a. Common fractions

b. Mixed numbers

c. Decimal fractions

2. Conversions

a. English measure to decimal measure

b. Decimal measure to English measure

c. Area units

d. Volume units

12/5/2016

3. Perimeter
 - a. Rectangles
 - b. Circles
 - c. Triangles
4. Area
 - a. Rectangles
 - b. Circles
 - c. Triangles
5. Volume
 - a. Rectangular solids
 - b. Cylinders
 - c. Ramps and wedges
6. Hypotenuse of a right triangle
7. Diagonal of a rectangle

SLO: The student will mathematically construct and calculate numbers taken from blueprints and buildings.

D. Stair mathematics

SLO: The student will organize and prepare measurements taken from stairs.

Assignments: Read the chapters covered in the lecture and do the homework exercises at the end of the chapters. Answer the study guide questions on the assigned subject. Mathematically manipulate numbers taken from blueprints or field measurements.

7.0 lec/0.5 lab

- E. Construction Drawings
1. Plans and specifications
 2. Visualization
 - a. Pictorial drawings
 - b. Orthographic drawings
 - c. Drawings used in blueprints
 3. Scale
 4. Line conventions
 5. Symbols and abbreviations
 6. Dimensions

SLO: The student will organize and evaluate measurements and symbols in drawings.

F. Orthographic projections and three-dimensional views of an object.

SLO: The student will organize and evaluate measurements and symbols from orthographic projections and three-dimensional views of an object.

G. Architect's scale

SLO: The student will select and use items from an architect's scale.

Assignments: Read the chapters covered in the lecture and do the homework exercises at the end of the chapters. Answer the study guide questions on the assigned subject.

Use an architect's scale and identify architectural conventions, symbols, and abbreviations.

7.0 lec/0.5 lab

- H. Material estimation
1. Concrete calculations
 2. Sheathing calculations
 3. Uniformly spaced structural components calculations

SLO: The student will prepare and estimate the amount of concrete and number of framing members needed for a project.

Assignments: Read the chapters covered in the lecture and do the homework exercises at the end of the chapters. Answer the study guide questions on the assigned subject. Estimate the materials required to

cover a wall, floor, or roof. Estimate the number of framing members required to build a wall, floor, or roof. Calculate the amount of concrete required for a wall, floor or roof slab, ramp, and column.

2.0

Final exam

METHODS OF INSTRUCTION:

- A. Lecture and discussion
- B. Visual aids
- C. Demonstrations
- D. Group hands-on exercise
- E. Individual hands-on exercise
- F. One-on-one hands-on instruction

METHODS OF EVALUATION:

The types of writing assignments required:

Written homework

Reading reports

Lab reports

Essay exams

The problem-solving assignments required:

Homework problems

Field work

Lab reports

Quizzes

Exams

The types of skill demonstrations required:

Class performance

Field work

Performance exams

The types of objective examinations used in the course:

Multiple choice

True/false

Matching items

Completion

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 10% - 50%

Problem-solving demonstrations: 10% - 40%

Skill demonstrations: 10% - 40%

Objective examinations: 10% - 30%

Other methods of evaluation: 0% - 0%

REPRESENTATIVE TEXTBOOKS:

Required:

CTCNC. Construction Math. Or other appropriate college level text.

Reading level of text, Grade: 8 Verified by: publisher/dvt

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: A

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000500336

Sports/Physical Education Course: N

Taxonomy of Program: 095210