Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. CRPT____ COURSE NUMBER:____ 1170_____

NUMBER OF CREDITS: 3

COURSE TITLE: Applied Carpentry Calculations and Estimating

CATALOG DESCRIPTION: This course covers the mathematical skills necessary for estimating materials, performing necessary calculations and conversions necessary for interior and exterior work. Application on linear, square and cubic measurements and their relationship to the construction trades process will be studied.

AUDIENCE: Construction Trades Students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: A score of at least a 56 on the Arithmetic portion of the Accuplacer

LENGTH OF COURSE: Semester – 48 hours

THIS COURSE IS USUALLY OFFERED:
Every other year □ fall x□ spring □ summer □ undetermined □

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. The develop a level of mathematical thinking for construction trades
   b. To develop a basic understanding of mathematical concepts
   c. To solve basic problems using concepts of measurements, basic algebra, and basic geometry.

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
a. Developing and using problem solving skills and strategies.
b. Focus on improving critical thinking skills.

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Interactive problem solving
   b. Relating and applying real world concepts to the construction field.

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Working with others in small groups.

TOPICS TO BE COVERED:
1. Concepts of estimating
2. Geometric quantities, figures and relationships
3. Calculate quantities of items needed for interior and exterior projects
4. Demonstrate use of arithmetic and algebraic equations to perform essential job site functions.
5. Analyze construction documents to be calculated.

COURSE LEARNING OUTCOMES (GENERAL):
   a. Perform basic arithmetic operations
   b. Identify the principles of estimating.
   c. Explore and interpret plan specifications to determine calculations required.
   d. Convert measurement units.
   e. Covert decimal/scientific notation numbers.
   f. Simplify equations
   g. Round-off approximate values accurately.
   h. Multiply, subtract, and solve algebraic equations
   i. Determine the appropriate mathematic method for each estimating job.
   j. Calculated quantities of items based on algebraic functions.
   k. Calculate total cost for a project.
   l. Solve for angles and degrees.
   m. Calculate labor and input costs and needs.
   n. Calculate conversions based on plan specifications.
   o. Calculate wall framing components and materials required.
   p. Estimate and calculate roof framing components and dimensions.
   q. Model real-world problems the measurement of angles, calculating degrees, and using algebraic functions.
   r. Solve simple fraction equations.
   s. Solve and apply linear equations.

STUDENT LEARNING OUTCOMES (SPECIFIC):
Solve equations to perform necessary estimating functions and job site calculations.
Work with US and metric units of measurement.
Apply problem-solving strategies to real-life scenarios.
Solve problems related to geometric, algebraic and arithmetic functions. Solve triangles using right-angle trigonometry in relation to interior and exterior projects.

LEARNING/TEACHING TECHNIQUES used in the course are:
- Collaborative Learning
- Problem Solving
- Student Presentations
- Interactive Lectures
- Creative Projects
- Individual Coaching
- Lecture
- Films/Videos/Slides
- Demonstrations
- Other (describe below)
- Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
- Reading
- Tests
- Individual Projects
- Oral Presentations
- Worksheets
- Collaborative Projects
- Textbook Problems
- Papers
- Portfolio
- Group Problems
- Term Paper
- Other (describe below)

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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Revised 10/1/16