COURSE OUTLINE: MTH106 - TRADES MATHEMATICS

Prepared: Mathematics Department
Approved: Karen Hudson, Dean, Community Services and Interdisciplinary Studies

Course Code: Title	MTH106: TRADES MATHEMATICS
Program Number: Name	
Department:	MATHEMATICS
Academic Year:	2024-2025
Course Description:	This course for Construction Techniques program begins with a review of fundamental concepts including arithmetic operations. Some theoretical concepts and topics in proportion and variation, measurement, geometry, and trigonometry will be covered. These concepts and topics will be reinforced by the use of practical problems to make the current topic relevant to the students needs. Aspects of business math pertaining to the construction field will be introduced.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	MTH142, MTH145
Essential Employability Skills (EES) addressed in this course:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 10 Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Books and Required Resources:	See instructor for materials Calculator-SharpEL-520XTB (available in the bookstore)

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Solve arithmetic problems of whole numbers, fractions and decimals without the use of a calculator as they apply to the trades.	1.1 Perform addition, subtraction, multiplication and division of whole numbers without the use of a calculator. 1.2 Recite and be able to create the multiplication times table without the use of a calculator. 1.3 Perform arithmetic using order of operations.

	1.4 Perform addition, subtraction, multiplication and division of fractions. 1.5 Perform addition, subtraction, multiplication and division of decimal numbers.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Create ratios, proportions and percentages and solve problems using a calculator as they apply to the trades.	2.1 Create ratios and proportions. 2.2 Perform special applications of ratios and proportions. 2.3 Solve trades related problems using ratios and proportions. 2.4 Create percentages. 2.5 Solve trades related problems using percentages.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Use ratios and conversion rates to do measurements and measurement conversions on trade-related problems.	3.1 Apply ratios and conversion rates as they relate to conversions. 3.2 Work with various units of measurement such as Imperial/English/British, US customary, and the 3.3 SI Metric units. 3.4 Solve practical measurement conversion problems between various units of measure.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Solve for unknowns and algebraic equations.	4.1 Perform arithmetic on signed numbers. 4.2 Work with exponents and square roots. 4.3 Add and subtract algebraic expressions. 4.4 Multiply and divide algebraic expressions. 4.5 Use scientific notation. 4.6 Solve word problems and algebraic expressions.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Solve practical trade problems related to area, perimeter, volumes of various geometric shapes, and solids.	Determine area, perimeter and volume of various geometric shapes and solids. 5.1 Perform angle measurement. 5.2 Work with polygons, triangles, hexagons, irregular polygons, circles, prisms, pyramids, cylinders, spheres, and cones. 5.3 Work with angles and triangles.
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Use trigonometry to solve practical trade related problems.	6.1 Use trigonometric ratios to solve trade related problems. 6.2 Solve right triangles. 6.3 Work with oblique triangles.
Course Outcome 7	**Learning Objectives for Course Outcome 7**
7. Create graphs and perform other related statistical information as they relate to the trades industry.	7.1 Read and create graphs. 7.2 Use statistical tools, techniques and methods to perform data analysis.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	30%

	Tests and Quizzes | 70%
Date:	August 15, 2024
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.