

Course Code: MAT 131

Course Title: Applied Mathematics

Department: Mathematics

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 27.0301

Repeatability: 0

Credit Hours

Catalog Notation: 3-0-3; 4-0-4

Credit Hour Distribution:

Lecture: 4

Lab: 0

Clinical: 0

Total: 4

General Course Information

Catalog Description

Operations with whole numbers, fractions, decimals, and signed numbers; percents; measurement; scientific notation; calculators; equations; formulas; graphs; ratio and proportion; metric system; polynomials; plane and solid figures and their formulas; systems of equations; basic statistics; and right triangle trigonometry.

General Course Objectives

Students will learn the basic arithmetic, algebra, and trigonometry skills needed for career programs.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

Credit in MAT 059 or MAT 060 with a grade of C or higher, or placement

Methods of Evaluation

3-4 exams, 10-30 quizzes/assignments, and a cumulative final exam.

Instructional Materials and Additional Supplies

Elementary Technical Mathematics, 12th edition, by Ewen; Cengage 2019 978-1-3376-3058-0

Required: Sharp model EL-531 scientific calculator; \$17.

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

3 credit hour option

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Basic Concepts	1. Add, subtract, multiply, and divide positive integers and signed numbers, using exponents and the order of operations.	5	0	0
Fractions	1. Add, subtract, multiply, and divide fractions and fractional measurements. 2. Use formulas and compute in the English system.	3	0	0
Decimals	1. Add, subtract, multiply, and divide decimals. 2. Write numbers in scientific notation. 3. Find percents.	3	0	0
Metric System	1. Demonstrate familiarity with basic SI metric units and prefixes. 2. Convert within the metric system, and between metric and English systems.	4	0	0
Measurement	1. Find the accuracy and precision of a measurement. 2. Add, subtract, multiply, and divide measurements. 3. Find the relative error and tolerance of measurements.	3	0	0
Polynomials	1. Add, subtract, multiply, and divide polynomials. 2. Simplify algebraic expressions. 3. Remove parentheses. 4. Solve equations with parentheses.	4	0	0
Linear Equations and Formulas	1. Solve linear equations and formulas. 2. Substitute data into formulas.	7	0	0
Ratios and Proportion	1. Simplify ratios and solve proportions. 2. Use proportions to solve problems involving levers, scale drawing, pulleys, and gears.	2	0	0
Graphing Linear Equations and Systems of Linear Equations	1. Graph linear equations. 2. Solve pairs of linear equations by graphing, addition, and substitution methods.	5	0	0
Geometry	1. Measure angles. 2. Find area and perimeter of quadrilaterals and triangles.	2	0	0
Review and Tests	1. Earn at least a 70 percent on each of three, one-hour exams and the final exam.	7	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0

4 credit hour option**Meet requirements from previous credit hour group plus:**

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Geometry	1. Measure angles. 2. Find area and perimeter of quadrilaterals, triangles, and circles. 3. Find surface area and volume of prisms, cylinders, pyramids, cones, and spheres.	3	0	0
Right Triangle Trigonometry	1. Define trig ratios and use these ratios to solve right triangles with the aid of a calculator.	4	0	0
Statistics	1. Find the mean, mode, and median for grouped and un-grouped data. 2. Calculate the standard deviation and variance for data. 3. Read and interpret control charts and bar, line, and circle graphs.	6	0	0
Review and Tests	1. Earn at least a 70 percent on each of four, one-hour exams and the final exam.	2	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
60	0	0