



Division: Science/Mathematics **Area:** Mathematics
Course Number: MATH 121 **Course Name:** Technical Mathematics I
Prerequisite: MATH 090 or qualifying score on ACT of COMPASS test
Corequisite: NONE
Hours Required: **Class:** 60 **Lab:** 0 **Credits:** 4 (four)

Course Description/Purpose

This course provides basic mathematics preparation for students in technology programs. It emphasizes fundamental operations of algebra and the solution of linear equations relating to technical applications. The course also includes binary and hexadecimal numbers, estimation, scientific and engineering notation, engineering calculation form, proportion and variation, measurement systems and conversion methods, precision, accuracy and error. The purpose of this course is to acquaint students with the type of mathematics that is used in the technical area.

Major Units

- Real Numbers
- Binary and Hexadecimal Numbers
- Estimation
- Engineering Notation
- Solving Equations
- Form for Engineering Calculation
- Solving Applied Problems
- Fractional Equations
- Percent, Proportion and Variation
- Calculator Operations
- Measurements
- Formula Rearrangement

Educational/Course Outcomes

Student learning will be assessed by a variety of methods, including, but not limited to, quizzes and tests, journals, essays, papers, projects, laboratory/clinical exercises and examinations, presentations, simulations, portfolios, homework assignments, and instructor observations.

Cognitive Each student will be expected to *Identify/Recognize*. . .

- scientific notation and engineering notation;
- the binary number system;
- the hexadecimal number system.

Performance Each student will be expected to *Demonstrate/Practice*. . .

- prepare written solutions to applied problems using appropriate engineering form, notation, units and precision;

Performance Each student will be expected to *Demonstrate/Practice*. . . (continued)

- solve applied problems using given formulas;
- solve applied word problems involving percents, ratios, proportions and variations;
- rearrange formulas to solve for any specified variable;
- estimate answers to arithmetic operations without performing extensive pencil and paper calculations or using a calculator;
- convert a given measurement to another specified equivalent using conversion factors;
- interpret numbers in decimal, binary and hexadecimal forms.