

MTH 102 : APPLIED TECHNICAL MATHEMATICS

Transcript title

Applied Technical Mathematics

Credits

4

Grading mode

Standard letter grades

Total contact hours

40

Lecture hours

40

Prerequisites

MTH 060 or higher or minimum placement Math Level 10.

Course Description

Presents algebraic, geometric, and trigonometric concepts in a practical and applied workplace problem-solving context. Includes mathematical operations with real numbers, measurement, ratios, proportions, percentages, dimensional analysis, order of operations, solving equations numerically and symbolically, right triangle trigonometry, area, perimeter, surface area, volume, and weights.

Course learning outcomes

1. Evaluate real number numerical expressions by hand and with the use of appropriate use of technology.
2. Solve linear, higher order, and literal equations.
3. Convert standard and metric units of measure in the calculation of length, area, volume, and weight.
4. Apply algebra, geometry, and trigonometry concepts to solve contextual workplace applications and projects.
5. Analyze context and data to determine appropriate mathematical process and problem-solving strategy.
6. Communicate problem-solving processes and solutions.

Content outline

1. Foundational Skills
 - a. Order of operations
 - b. Operations with real numbers
 - c. Measurement
 - d. Ratio, proportion, and percent
 - e. Dimensional analysis
2. Formulas and Equations
 - a. Solve linear equations
 - b. Solve higher order equations
 - c. Solve literal equations
 - d. Regression models
3. Geometry

- a. Pythagorean theorem
- b. Angles
- c. Right-angle trigonometry
- d. Area and perimeter
- e. Surface area
- f. Volume
- g. Weight (of a geometric solid with a constant density)

Required materials

A combination of low cost textbooks, instructor provided materials and a course pack will be used.

General education/Related instruction lists

- Computation