

MAT 116 Technical Mathematics

MAT 116 Course Objectives

Upon completion of this course, the student can:

1. Perform conversions using U. S. customary and SI (metric) measures.
2. Apply basic plane geometric principles of lines, angles, triangles and other polygons, circles and arcs, congruency and similarity.
3. Calculate surface area and volume of basic geometric solids.
4. Solve problems involving significant digits and accuracy and precision of numbers.
5. Solve problems involving ratio, proportion, direct, inverse and joint variation.
6. Perform conversions between coordinate systems.
7. Apply fundamentals of trigonometric functions and co-functions to right triangles.
8. Apply the law of sines and the law of cosines to oblique triangles.
9. Solve problems involving compound angles.
10. Identify the vector concept, the components of vectors and add vectors.
11. Use a scientific calculator.
12. Solve application problems involving the above competencies.

MAT 116 Course Outline

- I. Measurement
 - A. Precision
 - B. Accuracy
 - C. Significant Digits
 - D. Conversion US customary – Metric
- II. Variation
 - A. Ratio
 - B. Proportion
 - C. Direct Variation
 - D. Inverse Variation
 - E. Joint Variation
- III. Geometry
 - A. Lines
 - B. Angles
 - C. Triangles and Other Polygons
 - D. Circles and Arcs
 - E. Congruency and Similarity
 - F. Solids – Surface and Volume
- IV. Trigonometry
 - A. Trigonometric Functions for Right Triangles
 - B. Law of Sines
 - C. Law of Cosines
 - D. Compound Angles
 - E. Conversions between Coordinate Systems
 - F. Vector Concepts, Components and Addition