
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 172 **TITLE:** Precalculus Trigonometry

CONTACT HOURS: 3 **CREDIT HOURS:** 3

CCL DESCRIPTION: This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

PREREQUISITE(S): MAT 171

COREQUISITE(S): MAT 172A

TEXTBOOK: Sullivan & Sullivan, Algebra and Trigonometry Enhanced with Graphing Utilities, 5th Edition, ISBN 978-0-13-600492-9

DELIVERY METHOD: Traditional with Web Support

GRADING POLICY: Homework (20%) Chapter Tests (60%)
Final Examination (20%)

CONTENT OUTLINE:

- 6.1 Composite Functions
- 6.2 One-to-One Functions
- 6.3 Exponential Functions
- 6.4 Logarithmic Functions
- 6.5 Properties of Logarithms
- 6.6 Logarithmic and Exponential Equations

- 7.1 Angles and Their Measure
- 7.2 Right Triangle Trigonometry
- 7.3 Computing the Values of Trigonometric Functions and Acute Angles
- 7.4 Trigonometric Functions of General Angles
- 7.5 Unit Circle Approach and Properties of the Trigonometric Functions
- 7.6 Graphs of the Sine and Cosine Functions
- 7.7 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
- 8.1 The Inverse Sine, Cosine, and Tangent Functions
- 8.2 The Inverse Trigonometric Functions (Continued)
- 8.3 Trigonometric Identities
- 8.4 Sum and Difference Formulas
- 8.5 Double-Angle and Half-Angle Formulas
- 8.6 Product-to-Sum and Sum-to-Product Formulas
- 8.7 Trigonometric Equations
- 8.8 Trigonometric Equations (Continued)
- 9.1 Applications Involving Right Triangles
- 9.2 The Law of Sines
- 9.3 The Law of Cosines
- 9.4 The Area of a Triangle
- 10.1 Polar Coordinates
- 10.2 Polar Equations and Graphs
- 10.3 The Complex Plane and DeMoivre's Theorem
- 10.4 Vectors
- 10.5 The Dot Product
- 11.1 Conics
- 11.2 The Parabola
- 11.3 The Ellipse
- 11.4 The Hyperbola

COMMENTS: Any policy concerning the possible acceptance of a late assignment or the possibility of a special arrangement that might be made with the student who missed a scheduled examination due to circumstances beyond his/her control is left to the discretion of the instructor.
