
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 121 **TITLE:** Algebra/Trigonometry I

CONTACT HOURS: 4 **CREDIT HOURS:** 3

CCL DESCRIPTION: This course provides an integrated approach to technology and the skills required to manipulate, display and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation and solving of algebraic functions, complex numbers, right triangle trigonometry, systems of equations and applications of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and to analyze results and communicate them effectively.

PREREQUISITE(S): MAT 070, MAT 080, or MAT 090

COREQUISITE(S): None

TEXTBOOK: John C. Peterson, *Technical Mathematics*, Third Edition,
ISBN: 0-7668-6188-0.

DELIVERY METHOD: Traditional

GRADING POLICY: Chapter Tests – 60%; Quizzes – 20%, Mid-Term I – 10%, Mid-Term II – 10%

CONTENT OUTLINE:

- 1.1 Some Sets and Basic Laws of Numbers
- 1.2 Basic Operations with Real Numbers
- 1.3 Exponents and Roots
- 1.4 Significant Digits and Rounding Off
- 1.5 Scientific and Engineering Notation

- 2.1 Addition and Subtraction
- 2.2 Multiplication
- 2.3 Division
- 2.4 Solving Equations
- 2.5 Applications of Equations
- 4.1 Relations and Functions
- 4.2 Operations on Functions; Composite Functions
- 4.3 Rectangular Coordinates
- 4.4 Graphs
- 4.5 Calculator Graphs and Solving Equations Graphically
- 5.1 Angles, Angle Measure, and Trigonometric Functions
- 5.2 Values of Trigonometric Functions
- 5.3 The Right Triangle
- 5.4 Trigonometric Functions of Any Angle
- 5.5 Applications of Trigonometry
- 6.1 Linear Equations
- 6.2 Graphical and Algebraic Methods for Solving Two Linear Equations in Two Variables
- 6.3 Algebraic Methods for Solving Three Linear Equations in Three Variables
- 6.4 Determinants and Cramer's Rule
- 14.1 Imaginary and Complex Numbers
- 14.2 Operations with Complex Numbers
- 14.3 Graphing Complex Numbers; Polar Form of a Complex Numbers
- 14.4 Exponential Form of a Complex Number
- 14.5 Operations in Polar Form; DeMoivre's Formula
- 14.6 Complex Numbers in AC Circuits

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.
