
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 171A **TITLE:** Precalculus Algebra Lab

CONTACT HOURS: 2 **CREDIT HOURS:** 1

CCL DESCRIPTION: This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PREREQUISITE(S): MAT 080 or MAT 090

COREQUISITE(S): MAT 171

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

DELIVERY METHOD: On-Line

GRADING POLICY: (Online Quizzes – 50%; Online Labs – 50%)

CONTENT OUTLINE:

- Lab 1: Rectangular Coordinates; Graphing Utilities; Introduction to Graphing Equations
Solving Equations Using a Graphing Utility; Linear and Rational Equations
Quadratic Equations
- Lab 2: Complex Numbers; Quadratic Equations in the Complex Number System
Radical Equations; Equations in Quadratic Form; Absolute Value Equations;
Factorable Equations

- Lab 3: Problem Solving: Interest; Mixture; Uniform Motion; Constant Rate Jobs, Solving Inequalities
- Lab 4: Intercepts; Symmetry; Graphing Key Equations, Lines, Circles
- Lab 5: Variation, Functions
- Lab 6: The Graph of a Function, Properties of Functions
- Lab 7: Library of Functions, Piecewise-Defined Functions, Graphing Techniques: Transformations, Mathematical Models: Building Functions
- Lab 8: Linear Functions and their Properties, Linear Models, Building Linear Models from Data, Quadratic Functions and their Properties, Building Quadratic Functions from Verbal Descriptions and from Data
- Lab 9: Inequalities Involving Quadratic Functions, Polynomial Functions and Models
- Lab 10: Properties of Rational Functions, the Graph of a Rational Function, Polynomial and Rational Inequalities
- Lab 11: The Real Zeros of a Polynomial Function, Complex Zeros; the Fundamental Theorem of Algebra
- Lab 12: Plane Curves and Parametric Equations, Systems of Linear Equations: Substitution and Elimination
- Lab 13: Systems of Linear Equations: Matrices, Systems of Linear Equations: Determinants, Systems of Inequalities

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.
