
ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE
MATHEMATICS DEPARTMENT
COMMON SYLLABUS DIRECTORY

PREFIX: MAT **NUMBER:** 161 **TITLE:** College Algebra

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

CCL DESCRIPTION: This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on applications involving equations and inequalities; polynomial, rational, exponential and logarithmic functions; graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science and mathematics for the Associate in Arts Degree.*

PREREQUISITE(S): MAT 080 or MAT 090

COREQUISITE(S): MAT 161A College Algebra Lab

TEXTBOOK: Blitzer, College Algebra, Prentice Hall, 5th Edition, ISBN 978-0-321-55983-8

DELIVERY METHOD: Both Traditional with Web Support and Online are available.

GRADING POLICY: Traditional Delivery: Homework (20%)
Chapter Tests (60%) Final Examination (20%)
Online Delivery: Homework (15%) Chapter Tests (35%)
Midterm Examination (20%) Final Examination (30%)

CONTENT OUTLINE:

- 1.1 Graphs and Graphing Utilities
- 1.2 Linear and Rational Equations
- 1.3 Models and Applications
- 1.4 Complex Numbers

- 1.5 Quadratic Equations
- 1.6 Other Types of Equations
- 1.7 Linear Equations and Absolute Value Equations
- 2.1 Basics of Functions and Their Graphs
- 2.2 More on Functions and Their Graphs
- 2.3 Linear Functions and Slope
- 2.4 More on Slope
- 2.5 Transformations of Functions
- 2.6 Combinations and Compositions of Functions
- 2.7 Inverse Functions
- 2.8 Distance and Midpoint Formulas; Circles
- 3.1 Quadratic Functions
- 3.2 Polynomial Functions and Their Graphs
- 3.3 Dividing Polynomials; Remainder and Factor Theorems
- 3.4 Zeros of Polynomial Functions
- 3.5 Rational Functions and Their Graphs
- 3.6 Polynomial and Rational Inequalities
- 3.7 Modeling Using Variation
- 4.1 Exponential Functions
- 4.2 Logarithmic Functions
- 4.3 Properties of Logarithms
- 4.4 Exponential and Logarithmic Equations
- 4.5 Modeling with Exponential and Logarithmic Functions

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.
