COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Elementary & Intermediate Algebra Combined	**Date submitted:**	11/29/18 (AAC: 18-73)
Department:	STEAM		
Curriculum:	Mathematics		

Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

Course Code: (eg. ACC 101)	MAT*139
Course Type:	L

A: Clinical B: Lab D: Distance Learning
I: Individual/Independent L: Lecture N: Internship
M: Seminar P: Practicum U: Studio
X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio

Elective Type:	G/LA/M

AH: Art History E: English FA: Fine Arts G: General HI: History HU: Humanities LA: Liberal Arts FL: Foreign Language M: Math S: Science SS: Social Science

Credit Hours:	4
Developmental: (yes/no)	no
Contact Hours: Lecture:	3
Clinical:	0
Lab:	1
Studio	0
Other:	0
TOTAL:	4
Class Maximum:	24
Semesters Offered:	F/Sp/Su

Prerequisites:

Pre-Algebra & Elementary Algebra (MAT*085), Introductory Algebra (MAT*094), Elementary Algebra Foundations (MAT*095) or appropriate placement test or SAT score

Corequisites:

None

Other Requirements:

None

Catalog Course Description:

Combines the content of Elementary Algebra Foundations (MAT*095) with Intermediate Algebra (MAT* 137) in one semester. It also serves as a prerequisite for most other first level credit Math courses, including College Algebra (MAT*172), Elementary Statistics with Computer Applications (MAT*165), Number Systems (MAT*141), Finite Mathematics (MAT*152), and Math for the Liberal Arts (MAT*146). All of the topics covered in both MAT*095 and MAT*137 will be covered in this class. A student may only receive credit for one of the following courses: Intermediate Algebra (MAT*137), Intermediate Algebra for Liberal Arts (MAT*137L), or Elementary & Intermediate Algebra Combined (MAT*139).

Topical Outline: List course content in outline format.

1. Solving linear equations and inequalities in one variable, solving related formulas and application problems
2. Graphing linear equations and inequalities in two variables; formulating equations of lines in two variables; related applications
3. Using function notation, evaluating functions and using functions to model linear relationships
4. Rules of integer Exponents; Operations on polynomials
5. Solving systems of two linear Equations in two unknowns and related applications
6. Factoring and solving quadratic equations by factoring
7. four operation on rational expressions, solving rational equations, graphing rational functions, related applications

8. Four operation on radical expressions, solving radical equations , graphing radical functions, related applications
9. Complex numbers
10. Solving quadratic equations, graphing quadratic functions, related applications
11. Graphing exponential functions, related applications

Outcomes:
Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.

Upon successful completion of this course, the student will be able to do the following:

Linear Functions

1) Provide multiple representations (e.g., words, symbols, graphs, tables) of linear functions by hand and/or using technology
2) Determine identifying characteristics of linear functions
3) Model and solve real world applications with linear functions (e.g., car depreciation) and systems of linear equations

Quadratic Functions and/or Expressions

1) Provide multiple representations of quadratic functions or expressions by hand and/or using technology
2) Determine identifying characteristics of quadratic functions or expressions (e.g., factors)
3) Evaluate, simplify, and perform operations on quadratic functions or expressions
4) Solve quadratic equations algebraically (e.g., factoring, completing the square, and quadratic formula with rational solutions) and/or graphically
5) Solve real world applications involving quadratic equations and functions

Exponential Functions and/or Expressions

1) Provide multiple representations (e.g., tables, graphs, symbols) of exponential functions or expressions by hand and/or using technology
2) Determine identifying characteristics of exponential functions or expressions
3) Evaluate, simplify, and perform operations on exponential functions or expressions
4) Identify exponential functions within real world applications
5) Solve simple exponential equations algebraically and/or graphically (optional)

Rational Functions and/or Expressions

1) Provide multiple representations of rational functions or expressions by hand and/or using technology
2) Determine identifying characteristics of rational functions or expressions
3) Evaluate, simplify, and perform operations on rational functions or expressions
4) Solve rational equations algebraically and/or graphically
5) Solve real world applications involving rational functions

Radical Functions and/or Expressions

1) Provide multiple representations of radical functions or expressions by hand and/or using technology, with primary emphasis on square root
2) Determine identifying characteristics of radical functions or expressions
3) Evaluate, simplify, and perform operations on radical functions or expressions
4) Solve radical equations algebraically and/or graphically
5) Solve real world applications involving radical functions
6) Identify imaginary numbers

PROGRAM: *does not apply*

GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)*

7. Quantitative Reasoning - uses numerical information, laws of logic, and mathematics to solve problems

Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** 1. quizzes 2. tests 3. labs 4. classroom assessments 5. departmental final exam
Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course	**Required:** Lab classroom for1 hour per week and a supplemental instructor, large amounts of board space, individual desks, access to MyMathLab **Desired:** None
Textbook(s)	Elementary and Intermediate Algebra: Graphs and Models by Bittinger, Ellenbogen, and Johnson, current edition