MATH 151 Course Outline as of Fall 2017

CATALOG INFORMATION

Dept and Nbr: MATH 151 Title: ELEMENTARY ALGEBRA
Full Title: Elementary Algebra
Last Reviewed: 4/8/2013

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	5.00	Lecture Scheduled	5.00	17.5	Lecture Scheduled	87.50
Minimum	5.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 175.00 Total Student Learning Hours: 262.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
This course is a beginning algebra course, including equations and inequalities in one variable, integer exponents, polynomials, equations and inequalities in two variables, rational expressions, radicals and rational exponents, quadratic equations, and the graphs of parabolas. Not open to those who have taken MATH 150B with a grade of "C" or better.

Prerequisites/Corequisites:
Course Completion of CSKLS 372 or higher (VE) OR Course Completion of DRD 382

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: This course is a beginning algebra course, including equations and inequalities in one variable, integer exponents, polynomials, equations and inequalities in two variables, rational expressions, radicals and rational exponents, quadratic equations, and the graphs of parabolas. Not open to those who have taken MATH 150B with a grade of "C" or better. (Grade Only)

Prerequisites/Corequisites: Course Completion of CSKLS 372 or higher (VE) OR Course Completion of DRD 382
Recommended:
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Solve linear equations and inequalities in a single variable.
2. Solve systems of equations by the following methods: graphing, substitution and addition.
3. Perform operations on and solve equations involving polynomial, rational and radical expressions.
4. Solve quadratic equations by the following methods: factoring, square root, completing the square, and the quadratic formula.
5. Graph linear and quadratic equations in two variables.
6. Use algebraic problem solving methods in a variety of applications.

Objectives:
Upon successful completion of the course, students will be able to:
1. Solve advanced linear equations and inequalities in one variable and related applications.
2. Evaluate and solve formulas.
3. Graph linear equations and inequalities in two variables, including the slope-intercept method, and find the equation of a line.
4. Define a polynomial and perform the operations of addition, subtraction, multiplication, division, and factoring of polynomials.
5. Apply the laws of exponents to algebraic expressions.
6. Solve systems of equations and inequalities in two variables and related applications.
7. Perform operations of addition, subtraction, multiplication, and division on radical expressions and simplify.
8. Solve radical equations and related applications.
9. Manipulate expressions involving rational exponents.
10. Perform operations of addition, subtraction, multiplication, and division on rational

expressions, and simplify rational expressions and complex fractions.
11. Solve rational equations and related applications.
12. Solve quadratic equations by completing the square and the quadratic formula.

Topics and Scope:

I. Linear equations and inequalities in one variable
- A. Linear equations
- B. Applications of linear equations
- C. Linear inequalities
- D. Formulas

II. Linear equations and inequalities in two variables
- A. Cartesian coordinate system
- B. Graphing linear equations, including the slope-intercept method
- C. Finding the equation of a line
- D. Graphing linear inequalities
- E. Systems of equations in two variables
  1. Solving by graphing
  2. Solving by elimination
  3. Solving by substitution
  4. Applications
- F. Systems of inequalities
- G. Introduction to function notation

III. Integer exponents and laws of exponents

IV. Polynomials
- A. Definition
- B. Operations
- C. Factoring
  1. Common factors
  2. Trinomials
  3. Difference of squares
  4. Sum and difference of cubes
  5. Grouping

V. Rational expressions
- A. Simplification
- B. Operations
- C. Complex fractions
- D. Rational equations
- E. Applications

VI. Radicals
- A. Square roots
- B. Simplification
- C. Sums and products of radicals
- D. Rationalizing denominators of square roots
- E. Higher-index radicals
- F. Pythagorean Theorem
- G. Radical equations
- H. Rational exponents
- I. Applications

VII. Quadratic equations
- A. Solution by factoring
- B. Completing the square

C. Quadratic formula
D. Applications

VIII. Graphing parabolic functions
A. Intercepts
B. Vertex

Assignment:

1. Weekly reading outside of class (0-50 pages)
2. Problem set assignments (10-30)
3. Mid-terms (2-5) and a final exam; quizzes (0-15)
4. Projects (for example, calculator explorations and activities) (0-2)

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Problem sets	Problem solving 5 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Exams: multiple choice, free response; quizzes	Exams 70 - 95%

Other: Includes any assessment tools that do not logically fit into the above categories.

Projects	Other Category 0 - 10%

Representative Textbooks and Materials:
Beginning Algebra (6th ed.). Martin-Gay, Elayn. Prentice-Hall: 2013.