MATH 151 Course Outline as of Fall 2006

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	6	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 standard 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:
Completion of MATH 150A or higher (VE) OR Course Completion of CSKLS 372 (or CSKL 372) OR Course Completion of CSKL 382

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: This course is a standard beginning algebra course. Not open to students who have taken MATH 150B with a grade of "C" or better. (Grade Only)
Prerequisites/Corequisites: Completion of MATH 150A or higher (VE) OR Course Completion of CSKLS 372 (or CSKL 372) OR Course Completion of CSKL 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:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon successful completion of the course, students will be able to:
1. Solve advanced linear equations and inequalities in one variable and their applications.
2. Evaluate and solve formulas.
3. Graph linear equations and inequalities in two variables, including the slope-intercept method and finding the equation of a line.
4. Solve systems of equations and inequalities in two variables and their applications.
5. Define a polynomial and perform the operations of addition, subtraction, multiplication, division and factoring of polynomials.
6. Apply the laws of exponents to algebraic expressions.
7. Simplify and perform operations with rational expressions and complex fractions.
8. Use integer exponents, determine square roots, simplify radicals and perform basic operations with radicals, including rationalizing the denominators.
9. Solve rational equations with applications.
10. Solve radical equations.

Topics and Scope:

Instructional methodology may include, but is not limited to: lecture, demonstrations, oral recitation, discussion, supervised practice, independent study, outside project or other assignments.

I. Linear Equations and Inequalities in One Variable
   A. Linear equations
   B. Applications of linear equations

- C. Linear inequalities

II. Linear Equations and Inequalities in Two Variables
- A. Cartesian coordinate system
- B. Graphing linear equations
  1. Slope-intercept method
  2. Finding the equation of a line
- C. Graphing linear inequalities
- D. Systems of equations in two variables
  1. Solving systems by graphing
  2. Solving systems by elimination
  3. Solving systems by substitution
  4. Applications
- E. Introduction to function notation

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

IV. Rational Expressions
- A. Simplification
- B. Operations
- C. Complex fractions
- D. Rational equations
- E. Applications

V. Exponents
- A. Natural number exponents
- B. Laws of exponents
- C. Integer exponents
- D. Rational exponents

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. Applications

VII. Quadratic Equations
- A. Solution by factoring
- B. Completing the square
- C. Quadratic formula
- D. Applications

VIII. Quadratic Equations in Two Variables
- A. Graphing $y = ax^2 + bx + c$
  1. Intercepts
  2. Vertex

Assignment:

1. Daily reading outside of class (approximately 0-50 pages per week).
2. Problem set assignments from required text(s)or supplementary materials chosen by the instructor.
3. Exams and quizzes.
4. Projects (for example, calculator explorations and activities).

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.

Homework problems	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.

Multiple choice, Free response exams, 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:
Text(s) required of each student will be selected by the department, a committee of the department, or the responsible instructor from the books currently available. Choices in the past have included:
Beginning Algebra (4th ed.). Martin-Gay, Elayn. Prentice-Hall: 2005.