MATH 150 Course Outline as of Summer 2019

CATALOG INFORMATION

Dept and Nbr: MATH 150 Title: ELEMENTARY ALGEBRA
Full Title: Elementary Algebra
Last Reviewed: 10/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	4.00	17.5	Lecture Scheduled	70.00
Minimum	4.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 140.00 Total Student Learning Hours: 210.00

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:
Beginning algebra topics, including equations and inequalities in one variable, integer exponents, polynomials, equations and inequalities in two variables, rational expressions, radicals and rational exponents, and quadratic equations.

Prerequisites/Corequisites:
CSKLS 373 or CSKLS 372 or AB705 placement into Math Tier 1 or higher

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Beginning algebra topics, including equations and inequalities in one variable, integer exponents, polynomials, equations and inequalities in two variables, rational expressions, radicals and rational exponents, and quadratic equations. (Grade Only)
Prerequisites/Corequisites: CSKLS 373 or CSKLS 372 or AB705 placement into <a

href='https://assessment.santarosa.edu/understanding-your-math-placement' class='NormalSiteLink' target='_New'>Math Tier 1 or higher
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

Approval and Dates

Version:	01	Course Created/Approved:	10/22/2018
Version Created:	9/14/2018	Course Last Modified:	11/14/2023
Submitter:	Ivana Gorgievska	Course last full review:	10/22/2018
Version Status:	Approved New Course (First Version)	Prereq Created/Approved:	10/22/2018
Version Status Date:	10/22/2018	Semester Last Taught:	Summer 2022
Version Term Effective:	Summer 2019	Term Inactive:	Fall 2024

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Solve linear equations, linear inequalities in one variable, polynomial equations by factoring, radical equations, and systems of two linear equations.
2. Simplify and perform operations on expressions involving radicals, exponents, and polynomials.
3. Graph and formulate linear equations in two variables.
4. Identify and use appropriate algebraic methods to solve application problems.

Objectives:
At the conclusion of this course, the student should be able to:
1. Solve linear equations and inequalities in one variable.
2. Solve quadratic equations by factoring.
3. Evaluate and solve formulas.
4. Graph linear equations and inequalities in two variables, including the slope-intercept method.
5. Find the equation of a line given information about the line.

6. Define a polynomial, and perform the operations of addition, subtraction, multiplication, division, and factoring of polynomials.
7. Use the laws of exponents and manipulate expressions involving rational exponents.
8. Solve linear systems of equations in two variables using the methods of substitution, addition, and graphing.
9. Simplify, add, subtract, multiply and divide radical expressions, and solve radical equations.
10. Simplify, add, subtract, multiply, and divide rational expressions.
11. Identify and use appropriate algebraic methods to solve application problems.

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 in two variables
- E. Systems of equations in two variables
  1. Solving by graphing
  2. Solving by elimination (addition)
  3. Solving by substitution
  4. Applications

III. Integer Exponents and Laws of Exponents

IV. Polynomials
- A. Definition
- B. Operations
- C. Factoring
  1. Common factors
  2. Grouping
  3. Trinomials
  4. Difference of squares
  5. Sum and difference of cubes
- D. Solving quadratic equations by factoring
- E. Applications

V. Introduction to Rational Expressions
- A. Simplification
- B. Operations

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

Assignment:

1. Reading outside of class (0-60 pages per week)
2. Problem sets (1-4 per week)
3. Quizzes (0-4 per week)
4. Projects (0-10)
5. Exams (2-6)
6. Final exam

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 and 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. 5th ed. Miller, Julie and O'Neill, Molly and Hyde, Nancy. McGraw Hill Publishing. 2018
Beginning Algebra. 7th ed. Martin-Gay, Elayn. Pearson Publishing. 2017

OTHER REQUIRED ELEMENTS

STUDENT PREPARATION

Matric Assessment Required:	M	Requires Math Assessment
Prerequisites-generate description:	U	User Generated Text
Advisories-generate description:	NA	No Advisory
Prereq-provisional:	N	NO
Prereq/coreq-registration check:	Y	Prerequisite Rules Exist
Requires instructor signature:	N	Instructor's Signature Not Required

BASIC INFORMATION, HOURS/UNITS & REPEATABILITY

Method of instruction:	02	Lecture
Area department:	MATH	Mathematics
Division:	73	Science, Technology, Engineering & Mathematics
Special topic course:	N	Not a Special Topic Course
Program status:	2	Not Certificate/Major Applicable
Repeatability:	00	Two Repeats if Grade was D, F, NC, or NP
Repeat group id:		MATH 150B AND MATH 151

SCHEDULING

Audit allowed:	N	Not Auditable
Open entry/exit:	N	Not Open Entry/Open Exit
Credit by exam:	N	Credit by examination not allowed
Budget code: Program:	0000	Unrestricted
Budget code: Activity:	1701	Mathematics-General

OTHER CODES

Discipline:	Mathematics	
Basic skills:	N	Not a Basic Skills Course
Level below transfer:	B	2 Levels Below the Transferable Level
CVU/CVC status:	N	Not Distance Ed
Distance Ed Approved:	N	
Emergency Distance Ed Approved:	Y	Fully Online Partially Online Online with flexible in-person activities
Credit for Prior Learning:	N	Agency Exam
	N	CBE
	N	Industry Credentials
	N	Portfolio
Non-credit category:	Y	Not Applicable, Credit Course
Classification:	Y	Liberal Arts and Sciences Courses
SAM classification:	E	Non-Occupational
TOP code:	1701.00	Mathematics, General
Work-based learning:	N	Does Not Include Work-Based Learning
DSPS course:	N	Not a DSPS Course
In-service:	N	Not an in-Service Course