

**SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES**

Mathematics

Revision Date: 07-01-26

I. CATALOG DESCRIPTION

Course Number: MATH1105
Course Title: Integrated Intermediate Algebra
Prerequisite(s): A grade of “D” or higher in MATH0950, a grade of “B” or higher in MATH0953, or appropriate score on math placement test
Catalog Description: Study of 2nd year algebra at a college level with emphasis on: Techniques for simplifying algebraic expressions, solving algebraic equations and inequalities, functions and their properties and graphs, complex numbers, quadratic equations and inequalities, graphs of quadratic functions, and systems of equations and inequalities. Support will be provided through Beginning Algebra topics that are taught, developed and applied in greater depth throughout this course. These topics will be presented as just-in-time support aligned with materials from the standard Intermediate Algebra curriculum.
Credit Hours: 4
Class Hours: 60
Lab Hours: 0
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Provide students focused instruction and review of previous coursework pertinent to current Math 1100 Intermediate Algebra course content.
- B. Introduce real and complex numbers and their properties.
- C. Teach students to solve absolute value, algebraic, polynomial, rational, radical, and quadratic equations.
- D. Teach students to solve linear, absolute value, and polynomial inequalities.
- E. Teach students to perform operations on algebraic, rational, and radical expressions to simplify.
- F. Introduce functions, functional notation, and interpretation of functions and their graphs.
- G. Teach students to graph linear equations, linear inequalities, elementary functions, and quadratic functions.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Solve linear equations and inequalities in one variable
 - 2. Solve an equation for a particular variable
 - 3. Complete operations of polynomials
 - 4. Factor polynomials
 - 5. Simplify radicals containing perfect squares
 - 6. Write an integer in factored form using prime factorization
 - 7. Simplify expressions involving real and complex numbers
 - 8. Solve absolute value, algebraic, polynomial, rational, and radical equations
 - 9. Solve linear, absolute value, and polynomial inequalities
 - 10. Graph linear and absolute value inequalities
 - 11. Perform operations on algebraic, rational, and radical expressions to simplify
 - 12. Graph elementary functions, find the domain and range of elementary functions, find values using functional notation, and interpret the graph of a function as related to applications

13. Use problem solving skills to model and solve applications involving rational equations and quadratic equations.
- B.** General Education Learning Outcomes
1. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Apply mathematical and scientific methods to solve problems for an array of contexts and everyday situations
Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve problems

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

- A. Solving linear equations and inequalities in one variable
- B. Solving an equation for a particular variable
- C. Adding, subtracting, multiplying and dividing polynomials
- D. Factoring polynomials, and solving polynomial equations by factoring
- E. Finding least common denominator to add and subtract rational expressions
- F. Simplifying rational expressions and solving rational equations with applications
- G. Functions and their graphs with applications
- H. Solving absolute value equations and inequalities
- I. Finding prime factorization and simplifying perfect squares
- J. Simplifying radical expressions and expressions with rational exponents
- K. Solving radical equations and equations with rational exponents
- L. Simplifying expressions involving complex numbers
- M. Solving quadratic equations
- N. Graphing linear equations, quadratic and elementary functions

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 1. Sullivan, *Elementary & Intermediate Algebra*, Current edition, Pearson. (*Note that your book will be available through MyMathLab Inclusive Access. Your instructor will provide you with instructions on how this will work.*)
- B. Required Resources:
 1. Scientific Calculator
 2. Supplemental Handouts as supplied by instructor
- C. Optional Resources:
 1. Sullivan, *Elementary & Intermediate Algebra* 4th edition Loose-leaf book

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. Lecture
 2. Small Group Work
 3. Guided Practice
 4. Interactive elements/methods

VII. METHODS OF EVALUATION

- A. Methods of evaluation typically include a combination of the following:
 1. Homework
 2. Worksheets
 3. Notebook
 4. Quizzes

- 5. Exams
- 6. Comprehensive Final Exam
- C. **SCC STANDARD GRADING SCALE POLICY:**

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

- A. Refer to instructor's course information for specific course requirements