

Math 1111
College Algebra (3 hrs)
Mathematics Department
Valdosta State University

Required Text: College Algebra Essentials (6th Edition) by Blitzer and Robert F.; access code to MyMathLab also required. (Available through Day-1 in Blazeview.)

CALCULATOR: TI-83, TI-83+, TI-84, or TI-84+ *(REQUIRED)*

Course Description: Math 1111 is algebraic topics including polynomials, rational expressions, equations, inequalities, graphing, exponents and radicals, relations and functions through exponential and logarithmic functions.

Student Learning Outcomes:

Upon completion of this course, students will be able to:

1. Use the rules of algebra to simplify, evaluate, rationalize, perform operations with, and apply algebraic expressions that contain both real and imaginary numbers.
2. Determine the distance between two points in the coordinate plane and find the midpoint of the line segment joining the points. Recognize, write, and graph equations of circles.
3. Solve equations (including linear, polynomial, rational, radical, exponential, logarithmic, and absolute value) and use the solutions to draw reasonable conclusions about a situation being modeled.
4. Solve and graph inequalities, including linear, polynomial, rational, and absolute value.
5. Solve quadratic equations using a variety of methods, including factoring, completing the square, the quadratic formula, extracting roots, and technology.
6. Using information about a line (such as slope, intercepts, and points on the line) to write equations, sketch graphs, and determine whether lines are parallel or perpendicular.
7. Using appropriate notation and terminology, analyze relations and functions by determining the domain, range, functional values, inverse relationships, and composition of functions both algebraically and graphically.
8. Graph quadratic functions by determining their maximum or minimum values and intercepts.
9. Analyze and sketch graphs of polynomial, rational, exponential, and logarithmic functions including transformations.
10. Use properties of logarithms to evaluate, rewrite, expand, or condense logarithmic expressions.
11. Solve systems of equations using a variety of methods, including technology.

Topics & Course Outline: (Not including Testing & Review)

Chapter/Section	Topics	Suggested Days	
		50 min lectures	75 min lectures
P1/P2/P3/P4/P5/P6	Algebraic Expressions- OMIT: Theory of Sets-Union and Intersection , Exponents ¹ - Scientific Notation: Converting decimals to Scientific and Scientific to Decimals only , Radicals ¹ and Rational Exponents, Polynomials, Factoring, Rational Expressions	6 days	4 days
1.1/1.2/1.3/1.4/1.5/ 1.6/1.7	Graph of an Equation, Solving Linear Equations, Solving Rational Equations, Applications with Linear Equations, Complex Numbers, Quadratic Equations, Other Type of Equations, Linear Inequalities and Absolute Value Inequalities	9 days	6 days
2.1/2.2/2.3/2.4/2.5/ 2.6/2.7/2.8	Linear Equations in the Cartesian Plane, Definitions of function, domain and range, functional notation, Analyzing Functions and their Graphs, Transformation of Functions, Combinations of Functions, Inverse Functions, Distance and Midpoint Formulas, Equation of a Circle	6 days	4 days
3.1/3.2/3.5/3.6/3.7	Quadratic Functions, Polynomial Functions of higher degree than 2, Optional: 3.3-Division of Polynomials, Optional: 3.4-Zeros of Polynomials, Rational Functions and Asymptotes, Graphs of Rational Functions, Solving Polynomial Inequalities, Solving Rational Inequalities, Direct, Indirect, and Joint Variation	6 days	4 days
4.1/4.2/4.3/4.4/4.5 and 5.1	Exponential Functions ² , Logarithmic Functions ² , Properties of Logarithms, Exponential Equations, Logarithmic Equations, Applications of Exponential and Logarithmic Functions, Solving Linear Systems of Equations	9 days	6 days
Notes ¹ Fundamentals only ² Include emphasis on asymptotic behavior	Every instructor must include applications of the following type: Simple & Compound Interest Mixture Direct, Indirect, and Joint Variation Exponential Growth and Decay		

Departmental Final Exam

The departmental final exam is mandatory for all students and comprehensive. The final exam comprises 20-30% of the overall course grade.

SOI Statement: At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on Banner. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term).

Student Success Center:

The Student Success Center provides free tutoring in core curriculum courses, the top four of which are math, writing, Spanish, and biology/chemistry. It also offers time

management and study skills workshops. Call 229-333-7570 to make an appointment, or visit the website: www.valdosta.edu/ssc.

Title IX Statement:

Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Mr. Darius Thomas, Student Conduct Officer, 229.333.5941, dariuthomas@valdosta.edu.

Access Statement: Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farber Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.