

COURSE SYLLABUS

Course Title:	College Algebra	Date submitted:	Spring 2018 (AAC: 18-03)
Department:	Mathematics & Science		
Curriculum:	Mathematics		
Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	Course Code: (eg. ACC 101)	MAT*172	Prerequisites: C+ or better in Intermediate Algebra (MAT*137) OR C+ or better in Elementary Algebra/Intermediate Algebra Combined (MAT*139) OR C+ in Intermediate Algebra for Liberal Arts (MAT*137L) AND C- in Bridge to College Algebra (MAT*110), OR C- or better in Finite Mathematics (MAT*152) or appropriate placement test score
	Course Type:	L	
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio		
	Elective Type:	G/LAS/M	
	AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science		
	Credit Hours:	3	
	Developmental: (yes/no)	no	
	Contact Hours:	Lecture: 3 Clinical: 0 Lab: 0 Studio: 0 Other: 0 TOTAL: 3	
	Class Maximum:	30	
	Semesters Offered:	F/Sp	
		Corequisites:	none
		Other Requirements:	none
Catalog Course Description:	A credit course involving the higher-level topics in algebra needed for success in PreCalculus and, ultimately, the Calculus series. Topics to be included are the following: systems of equations, including two- and three-variable linear and nonlinear systems; graphing of higher-order functions using transformations, increasing/decreasing intervals, maxima/minima; inverse functions; graphing of nonlinear inequalities in one and two variables; conic sections; laws of logarithms, exponential and logarithmic functions, solving exponential and logarithmic equations; applications related to exponential and logarithmic functions; 4 operations on complex numbers; simplification of complex fractions; solving of polynomial and rational inequalities. The course will utilize the graphing calculator to a limited extent.		

<p>Topical Outline: List course content in outline format.</p>	<ol style="list-style-type: none"> 1. Brief Review and Expansion of Intermediate Algebra Fundamentals: Exponents and Radicals (including complex numbers), Rational Expressions (including Higher-Order Denominators and Simplification of Complex Fractions), Solving Linear and Quadratic Equations in One Variable (including use of Completing the Square Technique, Solving of Linear, Polynomial and Rational Inequalities in One and Two Variables, Applications of Linear and Quadratic Equations, Coordinate Geometry, Factoring 2. Functions: Notation and Use, including Transformations, Increasing/Decreasing Intervals, Maxima/Minima, Composite Functions, Inverse Functions, Applications 3. Exponential and Logarithmic Functions, including their Graphs, Laws of Logarithms, Solving Equations and Applications 4. Systems of Equations and Inequalities in Two and Three Variables and Applications 5. Conic Sections, including Graphs and Formulation of Equations given Parameters
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, the student will be able to do the following:</p> <p>COURSE:</p> <ol style="list-style-type: none"> 1. integrate algebraic techniques to solve polynomial, rational, radical, linear, absolute value, exponential and logarithmic equations efficiently and accurately 2. utilize function notation accurately, including that for inverse and composite functions 3. solve systems of equations and inequalities in one or more variables using appropriate and efficient techniques 4. apply the laws of logarithms and exponents to relevant graphs, applications and the solving of equations 5. graph higher-order functions using transformations, increasing/decreasing intervals, maxima/minima 6. graph and formulate the equations of conic sections given the appropriate parameters 7. utilize the graphing calculator judiciously and accurately <p>PROGRAM: <i>does not apply</i></p> <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>7. Quantitative Reasoning -Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions.</p> <p>Demonstrates: Interprets numerical information and applies sufficient laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.</p> <p>Does Not Demonstrate: Misinterprets numerical information or insufficiently applies laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>Assessment will be based on the following criteria: Tests, Quizzes, Written projects/assignments, Departmental final exam (optional)</p>
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required: large amounts of board space, individual desks for students, overhead projection system</p> <p>Desired: storage facilities for the graphic calculator equipment</p>
<p>Textbook(s)</p>	<p><u>Precalculus</u> , 5th edition by Stewart, Redlin and Watson</p>