COURSE SYLLABUS

Course Title:	Intermediate Algebra		Date submitted:	11/8/18 (AAC: 18-71)
Department:	STEAM			
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*137

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/LA/M

AH: Art History E: English   FA: Fine Arts G: General   HI: History
HU: Humanities   LA: Liberal Arts   FL: Foreign Language   M: Math   S: Science   SS: Social Science

Contact Hours:		
Credit Hours:	3	
Developmental: (yes/no)	No	
Lecture:	3	
Clinical:	0	
Lab:	0	
Studio:	0	
Other:	0	
TOTAL:	3	
Class Maximum:	30	
Semesters Offered:	F/Sp/Su	

Prerequisites:

C- or better in Pre-Algebra & Elementary Algebra (MAT*085), Introductory Algebra (MAT*094), or Elementary Algebra Foundations (MAT*095) or appropriate placement test or SAT score

Corequisites:

Other Requirements:

Catalog Course Description:

A credit course serving as a prerequisite for most other first level credit Math courses, including College Algebra, Elementary Statistics with Computer Applications, Number Systems, Finite Mathematics and Math for the Liberal Arts. This course is a further study of algebra and mathematical modeling of functions and relations represented by tables, graphs, words, and symbols. Polynomial functions and expressions with special attention to linear, quadratic, exponential, rational, and radical functions are studied. There is an emphasis on applications for all topics. A student may only receive credit for one of the following courses: Intermediate Algebra (MAT*137), Intermediate Algebra for Liberal Arts (MAT*137L), or Elementary & Intermediate Algebra Combined (MAT*139).

Topical Outline:
List course content in outline format.

1. Factoring and solving quadratic equations by factoring
2. four operation on rational expressions, solving rational equations, graphing rational functions, related applications
3. Four operation on radical expressions, solving radical equations , graphing radical functions, related applications
4. Complex numbers
5. Solving quadratic equations, graphing quadratic functions, related applications
6. Graphing exponential functions, related applications

Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.	**Upon successful completion of this course, the student will be able to do the following:** **Linear Functions** 1) Provide multiple representations (e.g., words, symbols, graphs, tables) of linear functions by hand and/or using technology 2) Determine identifying characteristics of linear functions 3) Model and solve real world applications with linear functions (e.g., car depreciation) and systems of linear equations **Quadratic Functions and/or Expressions** 1) Provide multiple representations of quadratic functions or expressions by hand and/or using technology 2) Determine identifying characteristics of quadratic functions or expressions (e.g., factors) 3) Evaluate, simplify, and perform operations on quadratic functions or expressions 4) Solve quadratic equations algebraically (e.g., factoring, completing the square, and quadratic formula with rational solutions) and/or graphically 5) Solve real world applications involving quadratic equations and functions **Exponential Functions and/or Expressions** 1) Provide multiple representations (e.g., tables, graphs, symbols) of exponential functions or expressions by hand and/or using technology 2) Determine identifying characteristics of exponential functions or expressions 3) Evaluate, simplify, and perform operations on exponential functions or expressions 4) Identify exponential functions within real world applications **Rational Functions and/or Expressions** 1) Provide multiple representations of rational functions or expressions by hand and/or using technology 2) Determine identifying characteristics of rational functions or expressions 3) Evaluate, simplify, and perform operations on rational functions or expressions 4) Solve rational equations algebraically and/or graphically 5) Solve real world applications involving rational functions **Radical Functions and/or Expressions** 1) Provide multiple representations of radical functions or expressions by hand and/or using technology, with primary emphasis on square root 2) Determine identifying characteristics of radical functions or expressions 3) Evaluate, simplify, and perform operations on radical functions or expressions 4) Solve radical equations algebraically and/or graphically 5) Solve real world applications involving radical functions 6) Identify imaginary numbers
	PROGRAM: *does not apply*
	GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)* **7. <u>Quantitative Reasoning</u> -** uses numerical information, laws of logic, and mathematics to solve problems
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** Quizzes Tests Other teacher-generated classroom assessments Departmental Final Exam

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.
	Required: large amounts of board space
	
	        Individual desks
	
	        Access to MyMathLab
	
	Desired:

Textbook(s)	<u>Elementary and Intermediate Algebra: Graphs and Models</u> by Bittinger, Ellenbogen, and Johnson, current edition