Big Bend
COMMUNITY COLLEGE

MASTER COURSE OUTLINE
Prepared By: H Summers/D Berry-Guerin   Date: December 2017

COURSE TITLE
Applied Math for Workforce Programs III

GENERAL COURSE INFORMATION

Dept.: MAP	Course Num: 121	(Formerly:)
CIP Code: 27.9998	Intent Code:	Program Code: 892
Credits: 1-5		
Total Contact Hrs Per Qtr.: 11-55		
Lecture Hrs: 11-55	Lab Hrs:	Other Hrs:
Distribution Designation:		

COURSE DESCRIPTION (as it will appear in the catalog)
This course is designed to prepare students for precalculus and finite math. It includes the study of inequalities, applications of systems, rational expressions, functions, radicals, rational exponents, radical equations, complex numbers, quadratic equations and their application. Students will complete exercises and problems providing practice in workforce program-specific applications. Credit cannot be earned in both MAP 121 and MATH 099.

PREREQUISITES
MAP 119 or MATH 098 or placement into MATH 099

TEXTBOOK GUIDELINES
Appropriate text chosen by math faculty.

COURSE LEARNING OUTCOMES
Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.
1. Simplifies expressions containing algebraic fractions
2. Solves algebraic equations containing quadratics, radicals, or rational exponents
3. Uses properties of exponents and radicals to simplify expressions
4. Converts advanced word problems to algebraic sentences when solving application problems
5. Performs function algebra and composition of functions given expressions in function notation
6. Simplifies expressions which contain complex numbers
7. Graphs solutions of linear inequalities and compound linear inequalities.
8. Uses properties of absolute values to solve linear equations and inequalities.

INSTITUTIONAL OUTCOMES
IO2   **Quantitative Reasoning**: Students will be able to reason mathematically using methods appropriate to the profession

COURSE CONTENT OUTLINE
MODULE/CREDIT 1: Compound Inequalities
*   Inequalities

- Compound Inequalities
- Absolute Value Equations
- Absolute Value Inequalities

MODULE/CREDIT 2: Systems of Equations
- Systems
- Systems with Three Variables
- Applications of Systems-Value
- Applications of Systems-Mixture with Final Amount
- Applications of Systems-Mixture

MODULE/CREDIT 3: Radicals
- Simplify Radicals
- Add, Subtract, and Multiply Radicals
- Rationalize Denominators
- Rational Exponents
- Radical of Mixed Index
- Complex Numbers
- Complete the Square
- Quadratic Formula

MODULE/CREDIT 4: College Algebra Topics
- Multiply and Divide Rational Expressions
- Add and Subtract Rational Expressions
- Compound Fractions
- Rational Equations
- Equations with Radicals
- Equations with Exponents
- Rectangle Problems
- Work Problems
- Distance and Revenue Problems

MODULE/CREDIT 5: Functions
- Evaluate Functions
- Operations on Functions
- Inverse Functions
- Graphs of Quadratic Functions

DEPARTMENTAL GUIDELINES *(optional)*
This course has been designed as an application-based Intermediate Algebra II (MATH 099) course.
By completing this course, students will have met the computation general education requirement for a workforce program certificate/degree OR students may continue to MATH147 or MATH&141 depending on planned transfer major requirements. Students may not earn credit for both MAP 121 and MATH 099.

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DIVISION CHAIR APPROVAL   **DATE**