

Course Outline

COURSE: MATH 233B **DIVISION:** 10 **ALSO LISTED AS:** MATH 233

TERM EFFECTIVE: Fall 2018 **Inactive Course**

SHORT TITLE: SECOND HALF INT ALG

LONG TITLE: Second Half of Intermediate Algebra

Units	Number of Weeks		Contact Hours/Week		Total Contact Hours
2.5	18	Lecture:	4	Lecture:	72
		Lab:	0	Lab:	0
		Other:	0	Other:	0
		Total:	4	Total:	72

COURSE DESCRIPTION:

This course will start with a review factoring polynomials, and then cover the following topics with an emphasis on applications and problem solving strategies: solving polynomial equations by factoring; adding, subtracting, multiplying, dividing and simplifying rational expressions and solving rational equations; adding, subtracting, multiplying, dividing and simplifying roots, radicals and complex numbers and solving radical equations; working with composition of functions and inverse functions, working with exponential and logarithmic functions, equations and expressions; employing various methods of solving quadratic equations and inequalities; and graphing quadratic functions. **PREREQUISITE:** Completion of MATH 233A with a grade of 'C' or better.

PREREQUISITES:

Completion of MATH 233A, as UG, with a grade of C or better.

OR

Completion of MATH 240, as UG, with a grade of C or better.

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

STUDENT LEARNING OUTCOMES:

1. Analyze a variety of problems involving contemporary applications of linear, quadratic, exponential, logarithmic, and rational functions, and determine and implement an appropriate method of solution for these problems.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: B3

2. Graph quadratic, logarithmic, and exponential functions, and identify and describe attributes of the graph such as x- and y-intercepts, domain, range, max and min.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: B3

3. Analyze the graph of a given function, identify the function as linear, quadratic, logarithmic, exponential or other, and utilize the graph in solving applied problems.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: B3

4. Differentiate between an expression or equation; identify the equation or expression as linear, quadratic, rational, radical, exponential or logarithmic; and determine and implement an appropriate strategy to simplify if it is an expression or solve if it is an equation.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: B3

5. Set up and solve linear and non-linear inequalities both algebraically and graphically.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: Be

6. Demonstrate proficiency with a scientific calculator.

Measure: Quizzes, exams, projects, and/or homework assignments

ILO: 2, 1

GE-LO: B3

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Inactive Course: 03/26/2018

4 Hours

Content: Review of factoring, solving polynomial equations by factoring, problem solving strategies involving polynomial functions and equations. Homework will be assigned for this and all other topics throughout the semester.

Student Performance Objectives: Student will be able to factor a polynomial, solve by factoring and solve applications thereof.

4 Hours

Content: Introduction to rational expressions, simplifying rational expressions, and multiplying and dividing rational expressions.

Student Performance Objectives: Student will be able to simplify, multiply and divide rational expressions.

4 Hours

Content: Adding and subtraction rational expressions, simplifying complex expressions.

Student Performance Objectives: Student will be able to add and subtract rational expressions and simplify complex expressions.

4 Hours

Content: Solving rational equations, applications, variation problems.

Student Performance Objectives: Student will be able to solve rational equations, and set up and solve equations for various applications, including variation problems.

4 Hours

Content: Review of properties of exponents, introduction to roots, radicals, and rational exponents.

Student Performance Objectives: Student will be able to use properties of exponents to simplify an exponential expression, express a radical with rational exponents and vice versa.

4 Hours

Content: Simplifying radical expressions by converting to exponential form, multiplying radicals.

Student Performance Objectives: Student will be able to simplify radical expressions by converting to rational exponents and using properties of exponents to simplify.

4 Hours

Content: Dividing radical expressions, including rationalizing the denominator, adding and subtracting radical expressions.

Student Performance Objectives: Student will be able to rationalize the denominator of a radical expression and add/subtract radical expressions.

4 Hours

Content: Solving radical equations and adding, subtracting, multiplying, and dividing complex numbers.

Student Performance Objectives: Student will be able to solve radical expressions and add, subtract, multiply and divide complex numbers.

4 Hours

Content: Composite and inverse functions, graphing exponential and logarithmic functions.

Student Performance Objectives: Student will determine whether the inverse of a function exists, and if so, to find the inverse function and graph them both, including for exponential and logarithmic functions.

Student will also understand concepts of domain and range and symmetry with respect to inverse functions.

4 Hours

Content: Properties of logs, solving logarithmic and exponential functions.

Student Performance Objectives: Student will be able to use properties of logarithms to simplify logarithmic expressions, and solve logarithmic and exponential functions.

4 Hours

Content: Applications of logarithmic and exponential functions.

Student Performance Objectives: Student will be able to solve application problems such as investment, population growth and decay problems involving logs and exponential equations.

4 Hours

Content: Solving quadratic equations by completing the square and by the quadratic formula.

Student Performance Objectives: Student will be able to solve a quadratic equation by completing the square and using the quadratic formula.

4 Hours

Content: Applications of quadratic equations, graphing quadratic functions.

Student Performance Objectives: Student will be able to solve application problems and graph quadratic functions.

4 Hours

Content: Standard form of quadratic functions, quadratic and rational inequalities.

Student Performance Objectives: Student will be able to express a quadratic function in standard form, identify the vertex and sketch a graph. Students will also solve quadratic and rational inequalities.

4 Hours

Content: Review graphing, solving word problems, and solving and graphing linear inequalities from Math 233A for the final exam.

Student Performance Objectives: Student will be able to set up and solve a quadratic equation that will solve a word problem.

2 Hours

Comprehensive final exam

METHODS OF INSTRUCTION:

Lecture, demonstration, group work, discussion.

METHODS OF EVALUATION:

CATEGORY 1 - The types of writing assignments required:

Percent range of total grade: 0 % to 10 %

If this is a degree applicable course, but substantial writing assignments are not appropriate, indicate reason

Course is primarily computational

CATEGORY 2 -The problem-solving assignments required:

Percent range of total grade: 75 % to 95 %

Homework Problems

Quizzes

Exams

CATEGORY 3 -The types of skill demonstrations required:

Percent range of total grade: 0 % to 0 %

CATEGORY 4 - The types of objective examinations used in the course:

Percent range of total grade: 0 % to 15 %

Multiple Choice

True/False

Matching Items

REPRESENTATIVE TEXTBOOKS:

Required:

Angel, Allen, "Inter. Algebra for College Students, 7th edition", Pearson/Prentice Hall, 2008, or other appropriate college level textbook.

ISBN: 0-13-238357-8

Reading level of text: 11th grade Verified by: Ken Wagman

Other textbooks or materials to be purchased by the student: Scientific calculator

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

GAV B4, effective 201030

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: A

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000456135

Sports/Physical Education Course: N

Taxonomy of Program: 170100