COLLEGE OF THE MARSHALL ISLANDS

COURSE OUTLINE

CIP No. 33.0101

MATH 096
Alpha Number

Intermediate Algebra
Course Title

Course Description
This course strengthens students' understanding of algebraic concepts and problem solving. Topics include an introduction to statistical analysis, systems of equations, rational exponents and radical expressions and equations, rational expressions and equations, Quadratic Equations & Inequalities, and Functions.

Course prepared by:
Developmental Education
March 2010

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<th>Total Hours</th>
<th>Credits</th>
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Purpose of Course:
Degree Requirement
Degree Elective
Certification
Developmental X
Other

Prerequisite(s)
MATH 086 (Introductory Algebra) or Placement Test

Signature, Curriculum & Assessment Committee Chairperson 1-4-2012

Signature, Dean of Academic Affairs 1-4-2012

Signature, Vice President for Academic and Student Affairs 1/5/12

Last date reviewed or revised: __________________________
I. Math 096
   Alpha Number

II. Course Objectives

General Outcomes
Upon completion of this course, the student will:

1. Manipulate and Simplify Algebraic Expressions (DEV 1)
2. Solve Algebraic Equations (DEV 1)
3. Recognize Equivalent Expressions (DEV 1)
4. Compare Graphical and Algebraic Representations of Algebraic Equations (DEV 1)
5. Solve intermediate algebra word problem applications with emphasis on understanding the problem through key words, making a plan to solve, executing the plan, and analyzing the solution. (DEV 1)
6. Use basic statistics to collect, organize, display, and analyze data (DEV 1)

Student Learning Outcomes

Upon completion of this course, the student will be able to:

1. Manipulate and Simplify Algebraic Expressions
   a. Simplify expressions containing rational exponents, radicals, and rational polynomials
   b. Factor Quadratic Expressions
   c. Manipulate and simplify complex number expressions
   d. Conceptualize, analyze, and evaluate functions

2. Solve Algebraic Equations
   c. Solve systems of linear equations using substitution and addition methods
   f. Solve Exponential, Radical, Rational, and Absolute Value Equations
   g. Solve Quadratic Equations & Inequalities, using the quadratic formula where necessary

3. Recognize Equivalent Expressions
   a. Rewrite and substitute equivalent expressions in order to simplify and solve equations
   b. Create equivalent expressions from existing equivalences

4. Compare Graphical and Algebraic Representations of Algebraic Equations
   a. Graph the solutions of systems of linear equations & inequalities and compare with algebraically-derived solutions
   b. Graph and analyze quadratic equations and inequalities
   c. Graph and analyze basic functions by creating a table of x & y values

5. Solve intermediate algebra word problem applications with emphasis on understanding the problem through key words, making a plan to solve, executing the plan, and analyzing the solution.
   a. Translate English expressions into algebraic expressions using key words
   b. Represent the unknown and given information that relates to the unknown
   c. Construct algebraic representations of the problem
   d. Test the reasonableness and accuracy of a solution

6. Use basic statistics to collect, organize, display, and analyze data
III. Course Content

This course strengthens students' understanding of algebraic concepts and problem solving.

1. Review Real Numbers and Introductory Algebraic Expressions
2. Systems of Equations & Inequalities
3. Factoring By Parts, Special Products, and Two-Step Factoring
4. Rational Expressions & Equations
5. Rational Exponents & Radical Expressions and Equations
6. Quadratic Equations & Inequalities
7. Introduction to statistical analysis
8. Functions & Their Graphs (including Absolute Values)

IV. Methods of Instruction

1. Lecture
2. Demonstrations
3. Small Group Activities
4. Class Activities

V. Equipment and Materials

1. Overhead projector
2. Scientific calculators
3. Laptop and projector

VI. Suggested Methods of Evaluation

1. Homework
2. Class participation
3. In-class activities
4. Projects
5. Quizzes
6. Exams
7. Final Exam

Letter Grades will be assigned as A, B+, B, C+, C, or NP.