SSE '00

Chaminade University of Honolulu

Course:	MA 103 60 College Algebra
Session:	Summer Session (July 05 - September, 2000)
Course Location:	Pearl Harbor Education Center
Class Dates/Time:	Tuesday and Thursday, 1905 - 2110
Course Description:	Algebra knowledge and skills needed for college studies: Sets and real numbers; exponents and polynomials, rational and radical expressions, equations and inequalities with applications, including equations containing rational and radical expressions, systems of equations, beginning analytic geometry and functions, exponential and logarithmic functions, and as time allows, the Sigma notation, the Binomial theorem and progressions.
Instructor/Phone:	Ivan Ormsbee, tele# *668-8993*, e-mail *ink_pen@aloha.net*
Prerequisites:	According to the result of placement examination which is equivalent to the contents of high school Algebra 1 or MA 102 with a grade C or better. Not open to students having credits in MA 110, 210, or higher numbered math course.
Required text:	Algebra for College Student (5th edition) by R. David Gustafson and Peter D. Frisk ISBN 0-534-35944-2
Homework:	There will be homework assigned on the material covered during each session due the following session.
Exams:	Exams are **closed** book.

Grading

Attendance	40 pts.	Grade 540 - 600	A
Homework	80 pts.	480 - 539	B
Midterm	160 pts.	420 - 479	C
Final Exam	320 pts.	360 - 419	D
TOTAL POINTS	600 pts	0 - 359	F

Course Outline:

The schedule may be adjusted by the instructor, as deemed appropriate in the best interests of the class.

There will be a BRIEF REVIEW of the topics covered in Math 102, and some of those topics will be presented again in more depth. New topics will be covered thoroughly.

Chapter 1 Basic Concepts
- **1.1** The Real Number System
- **1.2** Arithmetic and Properties of Real Numbers
- **1.3** Exponents
- **1.4** Scientific Notation
- **1.5** Solving Equations.

Chapter 2 Graphs, Equation of Lines, and Functions
- **2.1** Rectangular Coordinate System
- **2.2** Graphing Linear Equations
- **2.3** Slope of a Nonvertical Line
- **2.4** Writing Equations of Lines
- **2.5** Introduction to Functions
- **2.6** Graphs of Other Functions.

Chapter 3 Systems of Equations
- **3.1** Solution by Graphing
- **3.2** Solution by Elimination
- **3.3** Solutions of Three Equations in Three Variables
- **3.4** Solution by Matrices
- **3.5** Solution by Determinants

Chapter 4 Inequalities
- **4.1** Linear Inequalities
- **4.2** Equations and Inequalities with Absolute Values
- **4.3** Linear Inequalities in Two Variables
- **4.4** Systems of Inequalities
- **4.5** Linear Programming

Chapter 5 Polynomials and Polynomial Functions
- **5.1** Polynomials and Polynomial Functions
- **5.2** Adding and Subtracting Polynomials
- **5.3** Multiplying Polynomials
- **5.4** The Greatest Common Factor and Factoring by Grouping
- **5.5** The Difference of Two Squares; the Sum and Difference Two Cubes
- **5.6** Factoring Trinomials
- **5.7** Summary of Factoring Techniques
- **5.8** Solving Equations by Factoring
- *** This chapter is primarily a review. Problem Sets are more challenging.

Chapter 6 Rational Expressions

6.1 Rational Functions and Simplifying Rational Expressions
6.2 Proportion and Variation
6.3 Multiplying and Dividing Rational Expressions
6.4 Adding and Subtracting Rational Expressions
6.6 Equations Containing Rational Expressions
6.7 Dividing Polynomials

Chapter 7 Rational Exponents and Radicals

7.1 Radical Expressions
7.2 Applications of Radicals
7.3 Radical Equations
7.4 Rational Exponents
7.5 Simplifying and Combining Radical Expressions
7.6 Multiplying and Dividing Radical Expressions

Chapter 8 Quadratic Functions and Inequalities

8.1 Completing the Square and the Quadratic Formula
8.2 Graphs of Quadratic Functions
8.3 Complex Numbers
8.4 The Discriminant and Equations That Can Be Written in Quadratic Form
8.5 Quadratic and Other Nonlinear Inequalities

Chapter 9 More Functions and Operations of Functions

9.1 Symmetry and Stretchings of Graphs
9.2 Piecewise-Defined Functions and the Greatest Integer Function
9.3 More Rational Functions
9.4 Partial Fractions
9.5 Algebra and Composition of Functions
9.6 Inverses of Functions

Chapter 10 Exponential and Logarithmic Functions

10.1 Exponential Functions
10.2 Base -e Exponential Functions
10.3 Logarithmic Functions
10.4 Base-e Logarithms
10.5 Properties of Logarithmic Equations
10.6 Exponential and Logarithmic Equations

Chapter 13 Natural Number Functions and Probability

13.1 The Binomial Theorem
13.2 Sequences, Series, and Summation Notation
13.3 Arithmetic Sequences

Other topics will be assigned as time permits.

Course Objectives:

1. To give the student a firm foundation in the fundamentals of Algebra
2. To prepare the student for entry into MA110 PreCalculus
3. Emphases are: Skills in manipulating algebraic expressions (polynomials, rational expressions, radical expressions), in solving equations and inequalities, understanding basic concepts of functions, including exponential and logarithmic functions.

Important Dates

Session 01	06 JUL	
Session 02	11 JUL	
Session 03	13 JUL	
Session 04	18 JUL	
Session 05	20 JUL	
Session 06	25 JUL	
Session 07	27 JUL	
Session 08	01 AUG	
Session 09	03 AUG	
Session 10	08 AUG	
Session 11	10 AUG	**Midterm**
Session 12	15 AUG	
Session 13	17 AUG	
Session 14	22 AUG	
Session 15	24 AUG	
Session 16	29 AUG	
Session 17	31 AUG	
Session 18	05 SEP	
Session 19	07 SEP	
Session 20	12 SEP	**FINAL EXAM**