Today's Date: 06/27/2010 Course ID: MATH V03

Ventura College

COURSE OUTLINE OF RECORD

I. Course Information (Printed catalog data elements)

A. Discipline:
Mathematics

B. Course ID:
MATH V03

C. Course Title: Intermediate Algebra

D. Units: 5.00

E. Hours:

Lecture/wk: 5.00
Total Semester Contact Hours (based on 16 week semester): 87.50

F. Prerequisite(s):
MATH V01 or MATH V01A-E or MATH V88A-E or 1 year of high school beginning algebra with grade of C or better

G. Corequisite(s):
None

H. Recommended preparation:
None

I. Description:
This course covers equations and inequalities, systems of equations using matrices, exponents and radicals, complex numbers, functions and graphs, quadratic equations, conic sections,exponential and logarthmic functions. Students receiving credit in MATH V03 will not receive credit in MATH V03A-V03E.

J. Transfer Status:
Non Transferable

II. Course Objectives

Upon successful completion of this course, the student will be able to demonstrate the following measurable skills and abilities:

Solve linear equations involving absolute values
Solve and graph compound inequalities
Solve systems of equations in three variables by matrix row reduction
Solve word problems involving systems of equations
Graph systems of inequalities in two variables
Simplification of expressions involving positive, negative and fractional exponents
Perform mathematical operations on radical expressions
Solve radical equations
Perform algebraic operations on complex numbers

Solve quadratic equations and equations reducible to quadratic form
Graph solutions to quadratic inequalities
Solve word problems involving quadratic equations
Graph quadratic functions and conic sections
Introduction to functions: definitions, domain and range, algebra of functions, composite functions, inverse functions
Solve logarithmic equations and exponential equations
Solve word problems involving logarithmic and exponential equations

III. **Course Content**

A. Linear Equations and Inequalities
1. Compound inequalities, their graphs, and their solutions in interval and set notation
2. Absolute value equations and inequalities
3. Word problems using inequalities

B. Systems of Equations
1. Review systems in two variables by addition and substitution methods
2. Systems in three variables using matrix row reduction
3. Solve word problems using systems of equations
4. Graphical solutions to systems of inequalities in two variables

C. Radicals and Exponents
1. Simplification of expressions involving positive, negative and fractional exponents
2. Perform mathematical operations on radicals, and conversion to and from fractional exponents
3. Radical equations
4. Complex numbers and algebraic operations on complex numbers

D. Quadratic Equations
1. Methods of solution : factoring, Square Root Property, completing the square, quadratic formula
2. Equations reducible to quadratic form
3. Graphing quadratic functions and conic sections
4. Solve word problems involving quadratic equations
5. Quadratic inequalities
6. Nonlinear systems of equations (optional)

E. Functions and Relations
1. Definitions, domain and range
2. The algebra of functions
3. Composite functions
4. Inverse functions

F. Exponential and Logarithmic Functions
1. Properties of logarithms
2. Common logarithms and natural logarithms (effective use of calculator recommended)
3. Exponential and logarithmic equations
4. Solve word problems involving logarithmic and exponential equations

IV. **Assignments**

A. **Representative In-class Assignments** that develop critical thinking (required for degree applicable courses) may include, but are not limited to:

	Write composition(s) and/or report(s) and/or essay(s)	Write research paper(s) and/or term paper(s)	Solve computational and/or symbolic problems	Conduct and experiment or survey	Engage in analytical discussions	Prepare oral presentations	Develop skills in performance/activities	Create and analyze projects	Other (specify below)
Student Activities:									

		and/or other paper(s)							
Critical Thinking Skills	**Student Activities involved in each skill**								
Evaluating			X		X				
Appraising and assessing			X		X				
Justifying			X		X				
Synthesizing			X		X				
Developing and formulating			X		X				
Analyzing			X		X				
Solving problems			X		X				
Applying principals			X		X				
Comprehending concepts			X		X				
Identifying knowledge			X		X				
Other (describe): Comments:									

B. **Representative Out-of-class Assignments**

Reading: Read from 3 to 5 sections of the text for each week of class
Writing: Homework may include writing definitions, explanations of procedures, and justification of steps
Problem solving: Approximately 2-3 hours of home work for each hour of lecture will be assigned.

V. **Representative Instructional Modes -**

Lecture
Collaborative Group Work
Demonstrations
Distance Education

VI. **Evaluation Methods -** Substantively related to the course objectives.

A. **Writing.**
the course is primarily computational in nature;

B. **Problem Solving.** Computational or non-computational problem-solving demonstrations, including:
exam(s)
quiz(zes)
homework problem(s)

C. **Skills demonstrations.** Including:
performance exam(s)

VII. **Textbooks**

List representative textbooks, manuals, and other instructional materials/publications, including those materials to be put in the Library/LRC(Learning Resources Center).

Author(s)	Title(s)	Publisher(s)	Date(s)
Martin-Gay	Intermediate Algebra	Pearson	2008

Other appropriate publications/instructional materials such as representative recommended readings, repertoire, non-print media (eg.,websites, audio/visual recordings), and software.

Other
Other Appropriate Publications:
Discipline-specific websites: Yes