



# COLLEGE MATHEMATICS

## Course Syllabus



<b>Course No:</b>	Math 10	<b>Instructor:</b>	Prof. Leonid Romanyuk
<b>Semester:</b>	Fall 2009	<b>Phone:</b>	(510) 628-8024
<b>Units:</b>	3	<b>E-mail:</b>	lromanyuk@lincolnuca.edu
<b>Class hours:</b>	Wednesday 9:00 am – 11:45 am	<b>Office Hours:</b>	MTW 11:50-12:25
<b>Class Room:</b>	403	<b>Office Room:</b>	402

### COURSE DESCRIPTION:

Elementary algebra: fundamental algebraic concepts and operations, number bases, linear equations and inequalities, functions, graphing. Intermediate algebra: study of algebra including exponents and radicals, polynomials, geometric series, rational expressions, quadratic equations, and logarithms. (3 units)

### LEARNING OBJECTIVES:

The students will review the basic concepts and techniques of elementary and intermediate algebra, get complete coverage of the function and graph concepts, and learn how to apply them. The goal is to introduce students to problem solving and mathematical modeling using algebra and to build a solid foundation in the principles of mathematical thinking.

### INSTRUCTIONAL METHODS:

Lecture method is used in combination with the practical use of a calculator, business software, and the Internet resources to solve application problems. The emphasis will be on learning by doing. Every student must participate in an intensive classroom activity. Reading, writing, and problem solving assignments will be made weekly throughout the course.

### REQUIRED MATERIALS:

**TEXTBOOK:** **College Algebra**, by Michael Sullivan, 8th Edition, Prentice Hall, 2008, ISBN-10: 0132402866

**TOOLS:** A scientific or graphical calculator and Microsoft Excel software

**OPTIONAL:** Student Solutions Manual for College Algebra - Standalone, by Michael Sullivan, Prentice Hall, 2008, ISBN-10: 0321621050

Publisher's Web site student resources <http://vig.prenhall.com/>

## REQUIREMENTS:

All students are required to attend the class. Continuous assessment is emphasized. Written or oral quizzes will be given every week. Students must complete all assignments and take all quizzes, mid-term exam and final exam ON THE DATES DUE. Talking in class, using cell phones, coming late, leaving the room at times other than at break time is not allowed. Plagiarism/cheating will result in the grade "F" and a report to the administration.

## TESTING:

Classroom activities	every week	10%
Quizzes	every week	10%
Assignments	every week	30%
Mid-term exam	10/14/09	20%
Final exam	as scheduled	30%

There will be no make-up for a missed quiz or participation in a classroom activity. No make-up exams will be given unless you have the instructor's prior approval obtained in person before the exam date, with the exception of an extreme emergency. Late assignments will get no credit or reduced credit. *Students will not be allowed to use computers or cellular phones during tests.*

## GRADING:

Less than 50% total is an "F"; 75% total is "C+". Other grades will be calculated "on the curve" from the scores above.

## COURSE SCHEDULE:

Date	Topics	Chapters
8/26/09	Real Numbers. Algebra Essentials. Geometry Essentials. Polynomials. Factoring Polynomials. Rational Expressions. $n$ th Roots; Rational Exponents.	Ch. R
9/02/09	Linear Equations. Quadratic Equations. Radical Equations; Equations Quadratic in Form; Factorable Equations. Solving Inequalities. Equations and Inequalities Involving Absolute Value.	Ch. 1
9/09/09	The Distance and Midpoint Formulas. Graphs of Equations in Two Variables; Intercepts; Symmetry. Lines. Circles. Variation.	Ch. 2
9/16/09	Functions. The Graph of a Function. Properties of Functions. Library of Functions; Piecewise-defined Functions.	Ch. 3
9/23/09	Graphing Techniques: Transformations. Mathematical Models: Building Functions. Linear Functions and Their Properties. Building Linear Functions from Data.	Ch. 3 - 4

9/30/09	Quadratic Functions and Their Properties. Quadratic Models. Inequalities Involving Quadratic Functions.	Ch. 4
10/07/09	Polynomial Functions and Models. Properties of Rational Functions. The Graph of a Rational Function. Polynomial and Rational Inequalities.	Ch.5
10/14/09	Review. <b>MIDTERM EXAM</b>	Ch. R, 1 - 5
10/21/09	Composite Functions. One-to-One Functions; Inverse Functions. Exponential Functions. Exponential Equations.	Ch.6
10/28/09	Logarithmic Functions. Properties of Logarithms. Logarithmic Equations.	Ch.6
10/07/09	Compound Interest. Exponential Growth and Decay Models; Newton's Law; Logistic Growth and Decay Models. Building Exponential, Logarithmic, and Logistic Functions from Data.	Ch.6
11/04/09	Systems of Linear Equations: Substitution and Elimination. Systems of Nonlinear Equations. Systems of Inequalities.	Ch. 8
11/11/09	Veteran's Day (Holiday)	
11/18/09	Sequences. Arithmetic Sequences. Geometric Sequences; Geometric Series.	Ch. 9
11/25/09	<b>Thanksgiving recess</b>	
12/02/09	Counting and Probability	Ch. 10
12/09/09	Review	Ch. 1 – 10.
12/16/09	<b>COMPREHENSIVE FINAL EXAM</b>	

### **MODIFICATION OF THE SYLLABUS:**

**This syllabus was updated on August 5, 2009.** The instructor reserves the right to modify this syllabus at any time during the semester. An announcement of any changes will be made in a classroom.