



**Douglas  
College**

## CURRICULUM GUIDELINES

<b>A.</b>	Division:	Instructional Division	Date: May 12, 2000	
<b>B.</b>	Department / Program Area	Mathematics Faculty of Science & Technology	New Course	Revision
			X	
			If Revision, Section(s) Revised: G, H, M, N, O, P, R	
			Date Last Revised:	November 1990
<b>C:</b>	Math 101	<b>D:</b>	Basic Algebra	<b>E:</b>
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	Subject & Course No.	Descriptive Title		Semester Credits
<b>F:</b>	<p>Calendar Description:</p> <p>This is a one semester course for those students who need to improve their knowledge of algebra. It includes factoring, laws of exponents, simplifying polynomial and rational expressions, and solving equations and inequalities. It introduces students to functions and relations and their graphs.</p>			
<b>G:</b>	<p>Allocation of Contact Hours to Type of Instruction / Learning Settings</p> <p>Primary Methods of Instructional Delivery and/or Learning Settings:</p> <p style="text-align: center;">Lecture</p> <p>Number of Contact Hours: (per week / semester for each descriptor)</p> <p style="text-align: center;">4 hours per week</p> <p>Number of Weeks per Semester:</p> <p style="text-align: center;">14</p>		<b>H:</b>	<p>Course Prerequisites:</p> <p>BC Principles of Math 11 with C or better or DVST 411 with C- or better or BC Applications of Math 12 with C or better and a score of 12 or better on the Math Assessment Test</p>
			<b>I:</b>	<p>Course Corequisites:</p> <p>None</p>
			<b>J:</b>	<p>Course for which this Course is a Prerequisite</p> <p>Math 110 and Math 115</p>
			<b>K:</b>	<p>Maximum Class Size:</p> <p>35</p>
<b>L:</b>	PLEASE INDICATE:			
		Non-Credit		
	X	College Credit Non-Transfer		
		College Credit Transfer:	Requested	Granted
	SEE BC TRANSFER GUIDE FOR TRANSFER DETAILS ( <a href="http://www.bccat.bc.ca">www.bccat.bc.ca</a> )			
<b>M:</b>	Course Objectives / Learning Outcomes			

At the end of this course, the successful student will have reviewed and strengthened their algebraic skills and have a level of algebraic proficiency which will allow them to continue their mathematical studies to an in-depth study of functions and their associated graphs (the precalculus course).

At the end of this course, the successful student should be able to:

- distinguish between different sets of real numbers
- read and use a variety of notations signifying sets/subsets of real numbers, including set builder, number line, inequalities and interval notation
- appreciate the connection between the set operations of intersection and union and the conditions of “and” and “or”
- understand the concept of a solution set
- correctly apply properties of commutativity, associativity, distribution, inequality, equality and absolute value, and use the laws of exponents in the course of simplifying expressions and solving inequalities and equations
- simplify linear, polynomial, absolute value, rational, and radical expressions
- solve linear, quadratic form, special polynomial, absolute value, rational, and radical equations and inequalities, check solution(s) and express solutions sets using a variety of notations
- solve quadratic and quadratic form equations by factoring, completing the square or (deriving and) using the quadratic formula
- factor polynomials and use grouping, common factors, difference of squares, sum and difference of cubes
- add, subtract, multiply and divide polynomials
- translate a problem given in English form into an associated algebraic form, communicate clearly the relationship between the model and the original problem, articulate any restrictions on solutions, solve the algebraic problem and use the solution to solve the original problem
- find volumes, areas and perimeters of a variety of geometric figures especially in the context of story/applied problems
- use the Pythagorean theorem to solve story problems and to calculate distances and find midpoints in the plane
- work with the Cartesian co-ordinate system for two-dimensions
- graph linear inequalities in two variables
- solve linear systems of equations and inequalities algebraically and graphically
- graph linear equations in general, slope-intercept and slope-point forms, and find linear equations for given graphs
- distinguish parallel and perpendicular lines
- graph simple absolute value and radical functions
- graph circles and quadratic functions by first completing the square
- work with function notation
- determine if an equation in two variables represents an equation or a relation
- determine the domain and range of a function
- evaluate and form arithmetic combinations of functions

**N:**

Course Content:

1. Set of Real Numbers
2. Basic Algebra - absolute value, exponents, factoring, fractions
3. Polynomial, Rational, Radical and Absolute Value Equations
4. Polynomial, Rational and Absolute Value Inequalities
5. Functions and Relations
6. Graphing
7. Modeling and Mensuration Formulae
8. Linear Systems of Equations and Inequalities

**O:**

Methods of Instruction

	Lecture	
<b>P:</b>	Textbooks and Materials to be Purchased by Students  Bittinger and Ellenbogen, <u>Intermediate Algebra: Concepts and Applications</u> , Fifth Edition, Addison Wesley, 1998.	
<b>Q:</b>	Means of Assessment  Evaluation will be carried out in accordance with Douglas College policy. The instructor will present a written course outline with specific evaluation criteria at the beginning of the semester. Evaluation will be based on some of the following:  <ol style="list-style-type: none"> <li>1. Weekly Tests           0 - 40%</li> <li>2. Midterm Tests       20 - 70%</li> <li>3. Assignments           0 - 15%</li> <li>4. Attendance           0 - 5%</li> <li>5. Class Participation   0 - 5%</li> <li>6. Final Examination     30%</li> </ol>	
<b>R:</b>	Prior Learning Assessment and Recognition: specify whether course is open for PLAR  None	
Course Designer(s)		Education Council / Curriculum Committee Representative
Dean / Director		Registrar