CAPITAL COMMUNITY COLLEGE
COURSE OUTLINE
BASIC ALGEBRA

SECTION I

SUBJECT AREA & COURSE NUMBER: MATH 080
COURSE TITLE: *Basic Algebra*
COURSE CATALOG DESCRIPTION: *Basic Algebra* is designed to introduce algebraic symbolism, operations on algebraic expressions, solving linear equations, operations on polynomials, exponents, factoring, solving quadratic equations by the factoring method, and graphing linear equations. During the course, students may also be exposed to some of the following: authentic applications, inductive reasoning, deductive reasoning, logic, learning strategies, error analysis, review of arithmetic, geometry, statistics, the metric system, computer usage, calculator usage. *Basic Algebra* may also address roots and radicals, solution of quadratic equations by formula, graphing quadratic equations, rational expressions, and systems of equations.
LECTURE HOURS PER WEEK: 3   **CREDIT HOURS:** 0
PREREQUISITES: Qualifying score on Placement Test or Math 046

SECTION II

A. SCOPE:

The objective of Math 080 is to enable the student to develop an understanding of the generalization known as "the variable" and to work with, interrelate, and apply the principles of algebra governing: exponents, solutions of linear equations (and certain other equations reducible to linear form), operations on polynomials and rational expressions and the relationship between a line and an equation.

B. REQUIRED WORK: determined by the instructor as described in the course syllabus

C. ATTENDANCE AND PARTICIPATION: Students are expected to attend each class, arrive on time, take exams at the scheduled time, and participate in the in-class learning process.
(Specific instructor policies are included on the course syllabus).

D. METHODS OF INSTRUCTION: The methods of instruction are determined by each instructor and may include but are not limited to lecture, lecture/discussion, small group collaborative learning, experiment/exploration, distance learning, student presentations, use of technologies such as audio-visual materials, computer, language laboratory and calculator.

E. OBJECTIVES, OUTCOMES, ASSESSMENT
The following objectives and outcomes represent the department's core requirements for student achievement.

LEARING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	Student will:	As measured by:
Concepts related to equations	a) Use pertinent algebraic terminology b) Identify and use real number axioms c) Evaluate powers having integer exponents d) Use order of operation rules to evaluate numerical expressions e) Add, subtract, multiply and divide integers f) Solve any linear equation having one variable g) Identify a polynomial h) Evaluate a polynomial i) Add, subtract, multiply polynomials j) Divide a polynomial by a monomial k) Factor polynomials (common factor, difference of two squares, general trinomials, perfect square trinomials) l) Solve a quadratic equation by factoring method m) Introduce slope of a line	Written in-class quizzes, tests, and examinations: presentations to the class; out-of-class projects; written reports; portfolios; class participation; homework assignments
Concepts related to the graph of an equation in two variables	a) Find solutions of linear equations in two variables b) Graph sets of ordered pairs on a coordinate system c) Graph a linear equation in two variables by substitution method	
Other Supportive Concepts and Techniques	a) Use basic geometric arguments and constructions to establish relationships among quantities b) Use metric measurements c) Solve basic plane geometry problems d) Check results for errors e) Apply algebra to situations described in words f) Use a scientific calculator	
Optional Mathematics Topics	a) Graph a linear equation by the intercept method b) Graph a linear equation by the slope-intercept method c) Solve systems of linear equations d) Simplify radicals e) Solve a quadratic equation by formula f) Graph a quadratic equation g) Add, subtract, multiply divide radicals	

Note 1: The following table of learning outcomes should not be considered exhaustive: other learning outcomes may also support the objectives. The list is not intended to limit the learning outcomes that can be used to achieve the objectives.
Note 2: The order in which the learning outcomes are addressed and the relative emphasis given to each will vary from instructor to instructor.
Note 3: There is no expectation that an instructor will employ all the assessment methods or any particular set of them. Also, the list of applicable assessment methods is not exhaustive. Other methods that measure the learning outcomes may be used.
Note 4: It is important to recognize that courses are not delivered in a social vacuum. Any bona fide assessment of a course must take account of out-of-class life demands on students that adversely impact academic success.

F. TEXTS AND MATERIALS: Beginning Algebra 5th ed., Gustafson/Frisk, Publisher: Brooks/Cole

G. INFORMATION TECHNOLOGY: A scientific calculator.