City Colleges of Chicago
Course Title: Beginning Algebra with Geometry

Length of course: 16 Weeks

Contact Hours: 4 Contact Hours

Credit Hours: 4 Credit Hours

Lecture Hours: 4 Lecture Hours

Lab Hours:

Weekly Plan: 4 Hours

Catalogue Description:

Algebraic topics in this course include: real numbers and their basic properties; order of operations; algebraic expressions; integer exponents and scientific notation; polynomial operations; factoring; linear and factorable quadratic equations in one variable; linear inequalities in one variable; literal equations; and systems of linear equations in two variables. Geometry topics for this course include: perimeter, area, and volume. Writing assignments, as appropriate to the discipline, are part of the course.

Students the Course is Expected to Serve:

This course is intended for students who lack credit in one year of high school algebra or desire a review of the subject matter.

Pre-requisites:

Consent of Chair -- or Placement Test --

Course Objectives:

1. Understand and make connections between real numbers and expressions.
2. Develop the algebraic skills necessary for problem solving.
3. Develop the ability to model linear relations, including the use of graphing techniques as tools, for the purpose of solving contextual problems.
4. Manipulate and apply literal equations for the purposes of solving contextual problems.
5. Writing and communicating the results of problem solving appropriately.

Student Learning Outcomes:

Upon satisfactory completion of the course, students will be able to:

A. Simplify expressions containing integer exponents.
B. Apply scientific notation to contextual (real-world) situations.
C. Simplify square roots for perfect squares.
D. Know and use order of operations.
E. Evaluate algebraic expressions.
F. Perform operations on and simplify polynomial expressions.
G. Factor polynomials.
H. Understand the order relations on the set of real numbers and illustrate them on the real number line.
I. Translate between verbal expressions and algebraic or numerical expressions.
J. Identify and represent numerical or algebraic expressions in equivalent forms.
K. Solve linear equations and inequalities.

L. Solve factorable quadratic equations.
M. Solve and evaluate literal equations (formulas) of the first degree.
N. Solve systems of linear equations in two variables graphically and algebraically.
O. Formulate and apply a linear equation or inequality to a contextual (real world) situation.
P. Determine the slope of a line.
Q. Graph linear equations by plotting points and using slope.
R. Identify and represent linear relationships in equivalent forms (i.e., graphical, algebraic, tabular, and contextual).
S. Apply formulas of area, perimeter and volume to basic 2- and 3-dimensional figures.

Topical Outline: Suggested Timeframe

Week	Topic
1-4	Numbers & Expressions
5-10	Linear Equations & Inequalities & Graphs
11-13	Applications of Linear Models
14	Factorable Quadratic Equations
15-16	Geometry

Calendar:

Methods of Evaluation:

Total Percentage: 0%
The weight given to exams, quizzes, and other instruments used for evaluation will be determined by the instructor. COMPASS and/or Department Exit Examination will also be used to evaluate the student.

Methods of Assessment:

Exams, quizzes, homework and other assessments will be used as appropriate to measure student learning.

Methods of Instruction:

Problem-based activities, collaborative-learning techniques, and lecture will be used as appropriate.

Recommended Text:

1. Tobey Jr., T., & Slater, J. *Beginning Algebra* 6th Edition, Prentice Hall, 2006 ISBN: 0-13-148287-4
2. Martin-Gay, K. E. *Introductory Algebra* 3rd Edition, Prentice Hall, 2007 ISBN: 0-13-186843-8
3. Bittinger, M. L. *Introductory Algebra* 10th Edition, Addison-Wesley, 2007 ISBN: 0-321-26947-0