JEFFERSON COLLEGE

COURSE SYLLABUS

MTH 002

BEGINNING ALGEBRA

3 Credit Hours

Prepared by:
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MTH002: Beginning Algebra

I. CATALOG DESCRIPTION

A. Course pre-requisites/co-requisites:
COMPASS pre-algebra score of at least 33 within the past two years
ACT math score of 16 or higher within the past two years, or MTH001 with a grade of "B" or better
Reading proficiency

B. 3 semester credit hours

C. Beginning Algebra is designed for the student who has had no prior instruction in algebra. The student will work with operations of signed numbers, exponents, rational expressions, graphs, and linear equations. Beginning Algebra is not applicable toward the associate degree (F, S, Su, O)

D. Fulfills part of Mathematical Proficiency requirement; does not count toward degree requirements.

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURE

Note: Each of the following learning outcomes will be measured on at least one in-class exam, but instructors are encouraged to assess them with additional measures including homework, quizzes, and/or projects

Expected Learning Outcomes	Assessment Measures
Use algebraic properties and order of operations to simplify algebraic expressions and to convert algebraic expressions into alternate forms	Class discussion/practice, homework, and quizzes/tests
Use appropriate techniques to solve linear equations and linear inequalities	Class discussion/practice, homework, and quizzes/tests
Translate word problems into algebraic form and solve them	Class discussion/practice, homework, and quizzes/tests
Perform arithmetic operations with polynomials	Class discussion/practice, homework, and quizzes/tests
Use appropriate techniques to completely factor polynomial expressions with integer coefficients in order to solve quadratic equations	Class discussion/practice, homework, and quizzes/tests

Perform arithmetic operations with rational expressions	Class discussion/practice, homework, and quizzes/tests
Plot points in the rectangular coordinate system and graph linear equations	Class discussion/practice, homework, and quizzes/tests
Use properties of radicals to convert expressions involving radicals into alternate form	Class discussion/practice, homework, and quizzes/tests

III OUTLINE OF TOPICS

A. Real numbers and variables
   1. Adding, subtracting, multiplying, and dividing real numbers
   2. Exponents
   3. Using the distributive property to simplify algebraic expressions
   4. Combining like terms
   5. Using substitution to evaluate expressions and formulas
   6. Grouping symbols

B. Equations and inequalities
   1. The addition principle of equality
   2. The multiplication principle of equality
   3. Using the addition and multiplication principles together
   4. Solving equations with fractions
   5. Formulas (optional)
   6. Solving inequalities in one variable

C. Solving applied problems
   1. Translating English phrases into algebraic expressions
   2. Using equations to solve word problems
   3. Solving word problems involving comparisons, the value of money, percents, and geometric formulas
   4. Using inequalities to solve word problems (optional)

D. Exponents and polynomials
   1. The rules of exponents
   2. Negative exponents and scientific notation
   3. Addition, subtraction, multiplication, and division of polynomials

E. Factoring
   1. Removing a common factor
   2. Factor by grouping
   3. Factoring trinomials of the form $x^2 + bx + c$
   4. Factoring trinomials of the form $ax^2 + bx + c$
   5. Special cases of factoring

6. Solving quadratic equations by factoring

F. Rational expressions
   1. Simplifying rational expressions
   2. Multiplying and dividing rational expressions
   3. Adding and subtracting rational expressions

G. Graphing and functions
   1. Rectangular coordinate systems
   2. Graphing linear equations
   3. Slope of a line
   4. Functions (optional)

H. Radicals
   1. Square roots
   2. Simplifying radical expressions
   3. Adding and subtracting radical expressions
   4. Multiplying and dividing radical expressions (optional)
   5. The Pythagorean theorem and radical equations (optional)
   6. Word problems involving radicals: direct and inverse variation (optional)

IV. METHODS OF INSTRUCTION

A. Lecture

B. Discussion

C. In-class activities

D. MyMathLab interactive assignments

V. REQUIRED TEXTBOOKS

A. Tobey, J. (2013). *Beginning algebra* (Current Edition). New Jersey: Pearson.

B. *MyMathLab - Standalone Access Card*. Pearson.

VI. REQUIRED MATERIALS

Notebook paper and pencils

No calculators are permitted for use in this course

VII. SUPPLEMENTAL REFERENCES

Contained within MyMathLab:

A. Student Solutions Manual

B. Study Plan

VIII. METHODS OF EVALUATION

A. Homework 10%-20%
Students will submit homework in MyMathLab but are expected to keep written solutions for all work submitted. Additional problems from the textbook may also be assigned

B. Classwork 0%-20%
Additional worksheets and projects may be assigned at the discretion of the instructor to reinforce various concepts

C. Quizzes 0%-20%
Both in-class and online quizzes may be used to evaluate mastery of concepts

D. Tests 30%-60%
There will be a minimum of three unit tests, each covering 1-2 chapters of material. These exams may be administered on paper or online

E. Comprehensive final examination 15%-25%
All students will be required to take a comprehensive final exam, the score of which must be included in the final course grade

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Technology Center 101; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College website, http://www.jeffco.edu).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at

least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.