LC 090
Introduction to College Math I
(3c-01-3sh)

DESCRIPTION

Notes: 1. A student may not register for this course after successfully completing any course offered by the Mathematics Department without the written approval of the Learning Center Director;

2. This course carries institutional, non-graduating credit.

Reviews basic computational skills and their applications. Includes operations with whole numbers, decimals and fractions; the concepts of ratios, proportions and percents; basic geometric principles; and an introduction to algebra.

TEXT

Basic College Mathematics, Aufmann/Barker; Basic Mathematics and Problem Solving, Wise; or a comparable workbook text.

PURPOSE OF COURSE

The purpose of this course is to strengthen students' basic computational skills and their applications.

GOALS

The student will 1) develop the skills considered essential for mastery of arithmetic computations, 2) be able to apply these skills, and 3) improve his/her attitude toward mathematics.

COURSE OBJECTIVES

Upon completion of this course students will be able to:

1. Use place value, write and compare numbers, order and round numbers.

2. Add, subtract, multiply and divide using whole numbers and decimals.

3. Rename fractions and mixed numbers.

4. Factor as a product of primes.

5. Simplify fractions.

6. Find the LCM and GCF.

7. Compare fractions and mixed numbers.

8. Add, subtract, multiply and divide fractions and mixed numbers.

9. Rename fractions as decimals.

10. Rename decimals as fractions.

11. Rename numbers as percents.

12. Rename percents as numbers.

13. Understand and apply the concept of percent.

14. Understand and apply the concept of proportion.

15. Understand and apply the concept of rates.

16. Compute with measures.

17. Define and describe lines, angles and geometric figures.

18. Find perimeter, area and volume.

19. Read and interpret graphs and charts.

20. Identify the order relation between two signed numbers.

21. Find absolute value and opposites.

22. Add, subtract, multiply and divide signed numbers.

23. Combine like terms and simplify.

24. Use the above concepts through applications to word problems.

COURSE OUTLINE
Whole Numbers and Decimals

Week	1	Addition and Subtraction
Week	2	Multiplication
Week	3	Division
Week	4	Order, Exponents, and Order of Operations Agreement

Fractions and Mixed Numbers

Week	5	Least Common Multiple and Greatest Common Factor
Week	6	Addition and Subtraction
Week	7	Multiplication and Division

Percents and Proportion

Week	8	Ratios and Rates
Week	9	Proportion
Week	10	Percents and Interest

Measurement and Geometry

Week	11	Statistics and Graph Reading
Week	12	Measurement
		Angles, Lines, and Geometric Figures

Introduction to Algebra

Week	13	Introduction to Signed Numbers
Week	14	Operations with Signed Numbers
		Variable Expressions

REFERENCES

Aufmann, Richard N., and Barker, Vernon C. Basic College Mathematics:
    An Applied Approach. Boston, MA: Houghton Mifflin Company, 1987.

Aufmann, Richard N., and Barker, Vernon C. Essential Mathematics with
    Applications. Boston, MA: Houghton Mifflin Company, 1987.

Barker, Jack, Rogers, James, and Van Dyke, James. Arithmetic.
    Philadelphia, PA: Saunders College Publishing, 1987.

Bell, Evelyn D., Hansen, Viggo P., and Wisner, Robert J. Essential
    Skills for Arithmetic. New York: McGraw-Hill , Inc., 1980.

Goozner, Calman. Computational Skills for College Students. New
    York: Amsco College Publications, 1976.

Gossage, Loyce C. Mathematics Skill Builder. Cincinnati, OH: South-Western
    Publishing Company, 1977.

Hackworth, Robert D., and Howland, Joseph W. Programmed Arithmetic.
    Clearwater, Fla: H and H Publishing Company, Inc., 1983.

Johnston, C.L., Willis, A.T., and Hughes, G.M. Essential Arithmetic.
    Belmont, CA: Wadsworth Publishing Company, 1984.

Mandery, Matthew, and Schneider, Marvin. Achieving Competence in
    Mathematics. New York: Amsco School Publications, Inc., 1987.

McKeague, Charles P. Basic Mathematics. Belmont, CA: Wadsworth Publishing
    Company, 1987.

Shaw, B.R., Shelton, G., and Clarkson, S.P. Personalized Computational
    Skills Program: Skills and Applications. Boston, MA: Houghton
    Mifflin Company, 1982.

Wise, Alan. Basic Mathematics and Problem Solving. New York: Harcourt
    Brace Jovanovich, Inc., 1985.

Yamato, Yoshiko, and Cordon, Mary Jane. Mastering Mathematical Concepts.
    Orlando, FL: Academic Press, Inc., 1986.

LC 095
Introduction to College Math II
(3c-01-3sh)

DESCRIPTION

<u>Notes</u>: 1. A student may not register for this course after successfully completing any
course offered by the Mathematics Department, without the written approval of
the Learning Center Director;

2. This course carries institutional, non-graduating credit.

Introduces beginning algebraic concepts, with emphasis on signed numbers, rules and
properties of equations; exponents; polynomials; factoring; and rational expressions.

TEXT

<u>Introductory Algebra</u>, Aufmann/Barker; <u>Beginning Algebra and Problem Solving</u>, Wise; or a
comparable workbook text.

PURPOSE OF COURSE

The purpose of this course is to prepare the student for entry into college level math
courses by focusing on the skills and applications of a first course in algebra or by
providing a diagnostic review of beginning algebra.

GOALS

The student will 1) understand the concepts and properties of all topics considered
essential in a first-year algebra course, 2) be able to apply these concepts, and 3)
improve his/her attitude toward mathematics.

COURSE OBJECTIVES

Upon completion of this course, the students should be able to:

1. Add, substract, multiply, and divide positive and negative numbers

2. Understand and recognize the use of the commutative, associative, and distributive properties

3. Understand and recognize the use of the addition and multiplication property of equality

4. Know the major classifications of numbers

5. Solve linear equations in one variable
    Solve linear inequalities in one variable

6. Solve linear equations in two variables
    Solve linear inequalities in two variables

7. Solve systems of linear equations (optional)

8. Graph ordered pairs, straight lines, linear systems
    Graph inequalities

9. Understand the definition and properties of exponents

10. Multiply and divide monomials

11. Add fractions with the same denominator

12. Add, subtract and multiply polynomials

13. Recognize the special products of binomial squares and the difference of two squares

14. Factor integers

15. Understand the concepts of factor, prime factor, and greatest common factor

16. Factor polynomials

17. Factor the special products

18. Solve quadratic equations by factoring

19. Simplify radical expressions

20. Multiply, divide, add, and subtract radical expressions

21. Solve equations involving radical expressions

22. Simplify complex fractions

23. Apply the above concepts to solutions of word problems

COURSE OUTLINE

Week	1	Real Numbers
Week	2	Variable Expressions
Week	3 & 4	Solving Equations
Week	5	Exponents
Week	6	Polynomials
Week	7 & 8	Factoring
Week	9	Algebraic Fractions
Week	10 & 11	Graphs and Linear Equations
Week	12	Systems of Linear Equations (optional)
Week	13	Inequalities
Week	14	Radical Expressions

REFERENCES

Aufmann, Richard N., and Barker, Vernon C. Beginning Algebra with Applications. Boston, MA: Houghton Mifflin Company, 1986.

Aufmann, Richard N., and Barker, Vernon C. Introductory Algebra: An Applied Approach. Boston, MA: Houghton Mifflin Company, 1986.

Barker, Jack, Rogers, James, and Van Dyke, James. Basic Algebra. Philadelphia, PA: Saunders College Publishing, 1987.

Bramson, Morris. Algebra: An Introductory Course. New York: Amsco School Publishing, Inc., 1987.

Dressler, Robert E., and Dressler, Isidore. Introductory Algebra for College Students. New York: Amsco School Publications, 1976.

Hackworth, Robert D., and Howland, Joseph W. Programmed College Algebra. Clearwater, FL: H and H. Publishing Company, Inc., 1985.

Johnston, C.L., Willis, A.T., and Hughes, B.M. Essential Algebra. Belmont, CA: Wadsworth Publishing Company, 1985.

McKeague, Charles P. Beginning Algebra: A Text/Workbook. Orlando, Florida: Academic Press, Inc., 1985.

Wise, Alan. Beginning Algebra and Problem Solving. New York: Harcourt Brace Jovanovich, Inc., 1985.