NEW COURSE PROPOSAL (rev. 9/87)

Department: Learning Center

Persons to Contact for Further Information:

Carolyn Wilkie (Director);
Alphonse Novels (Chairperson);
Carmy Carranza (Math Specialist);

Course Affected: Introduction to College Math II (LC 095)

Desired Effective Semester for Change: MAIN SESSION 1988

Approvals:

Learning Center:

_____ -- 9/21/87
Director Date

_____ -- 9/21/87
Chairperson Date

Division-wide Curriculum Committee:

_____ -- 9/21/87
Chairperson Date

Vice President:

_____ -- 9-21-87
Date

A. DESCRIPTION AND ACADEMIC NEED

1. Catalog description:

LC 095: Introduction to College Math II 3c*-01-3sh

Notes: 1) A student may not register for this course after successfully completing any course offered by the Mathematics Department, without the approval of the Learning Center director, chairperson or math specialist; *2) This course carries institutional, non-graduating credit; 3) Attendance is required.

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

2. Syllabus (attached)

A3 - D4: Please refer to the proposal submitted for LC 090, Introduction to College Math I.

A3: Criteria for enrollment in course:

1) a score of 27 or below on the MAPS Elementary Algebra test (or a comparable score on an alternate test selected in the future);

2) and instructor or LC department permission;

3) and a grade not above a D in any course offered by the IUP Math Department, except with the approval of the LC director, chairperson or math specialist;

4) and no math course transferred to IUP, except with the approval of the LC director, chairperson or math specialist.

LC 095
INTRODUCTION TO COLLEGE MATH II
(3C*-01-3SH)

DESCRIPTION

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

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

3. Attendance is required.

Introduces beginning algebraic concepts, including signed numbers, rules and properties of equations; exponents; polynomials; factoring; algebraic fractions; graphs and linear equations, inequalities, and radical expressions.

TEXT

Introductory Algebra: An Applied Approach, Aufmann/Barker.

PURPOSE OF COURSE

The purpose of this course is to prepare the student for entry into college level math courses. The course content will focus on the skills and applications of a first course in algebra. Emphasis will be placed on those topics which cause much difficulty for students, such as solving equations, factoring, fractions, and radicals.

GOALS

The student will 1) understand the concepts and properties of all topics considered essential in a first-year algebra course and 2) be able to apply these concepts.

COURSE OBJECTIVES

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

1. Add, subtract, 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 variables.
   Solve linear inequalities in one variables.
6. Solve linear equations in two variables.
   Solve linear inequalities in two variables.
7. Graph ordered pairs, straight lines, linear systems.
   Graph inequalities.
8. Understand the definition and properties of exponents.
9. Multiply and divide monomials.
10. Add fractions with the same denominator.
11. Add, subtract and multiply polynomials.
12. Recognize the special products of binomial squares and the difference of two squares.
13. Factor integers.
14. Understand the concepts of factor, prime factor and greatest common factor.
15. Factor polynomials.
16. Factor the special products.
17. Solve quadratic equations by factoring.
18. Simplify radical expressions.
19. Multiply, divide, add, and subtract radical expressions.
20. Solve equations involving radical expressions.
21. Simplify complex fractions.
22. Apply the above concepts to solutions of word problems.

GRADING BASIS

The final grade will be based on the total number of points earned converted to a percentage of the total number of points available in the course. The letter grade corresponding to the percentages earned is given below:

Letter Grade	Percentages
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60

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 & 10	Algebraic Fractions
Week 11 & 12	Graphs and Linear Equations
Week 13	Inequalities
Week 14	Radical Expressions

In addition, a writing project will be required from each student. This may take the form of a math journal or a short written report on a mathematics topic, a problem solving exercise, or a particular person in mathmatics.

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REFERENCES

Aufman, 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 Introductdory 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.