

CENTRAL MICHIGAN UNIVERSITY
COLLEGE OF SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

MTH 105
Desig. No.

Intermediate Algebra
Title

3(3-0)
Credit(Mode)

- I. *Bulletin* Description:
Algebraic expressions, functions, factoring, graphing, linear and quadratic equations, linear inequalities, systems of linear equations, rational expressions, radicals, negative and rational exponents.
- II. Prerequisites:
Placement test score or successful completion of MTH 055 or equivalent.
- III. Rationale for Course Level:
Intermediate algebra presented in MTH 105 is a review and continuation of algebra covered in high school. It is a prerequisite for the business mathematics and statistics classes and contains applications relevant to other sciences.
- IV. Textbooks and Other Materials To Be Furnished by the Student:
Angel, Allan R., Intermediate Algebra for College Students, 5th edition, Prentice Hall, 2000. A scientific or graphing calculator and course pack.
- V. Special Requirements of the Course:
None.
- VI. General Methodology Used in Conducting the Course:
Lecture and discussion.
- VII. Course Objectives:
1. The student's knowledge of algebra and its use in applied problems will be broadened.
2. The student will become acquainted with functions and graphs and their applications.
3. The student will learn to solve linear and quadratic equations, systems of equations inequalities, graph lines and, parabolas, and apply exponent rules for use in subsequent classes in

mathematics, primarily business mathematics, college algebra, and trigonometry.

4. The student will master the concepts in 1-3 above in order to satisfy the University competency requirement in mathematics.

VIII. Course Outline:

Unit I (4 weeks)

1. Solving Linear Equations and Formulas; Variation
2. Solving Linear Inequalities; Applications
3. Equations and Inequalities Containing Absolute Values
4. Functions and Graphs; Interpreting Graphs
5. Applications of Linear Functions
6. Forms of a Line

Unit II (4.5 weeks)

1. Algebra of Functions
2. Graphs of Linear Inequalities
3. Systems of Equations and Inequalities
4. Application Problems
5. Polynomial Addition, Subtraction, Multiplication, Division
Synthetic Division
6. Factoring Polynomials
7. Solving Polynomial Equations Using Factoring

Unit III (4.5 weeks)

1. Rational Expressions and Functions; Domain
2. Addition, Subtraction, Multiplication, Division
3. Complex Fractions
4. Solving Rational Equations; Applications
5. Roots, Radicals; Rational Exponents
6. Add, Subtract, Multiply, Divide Radicals
7. Solve Radical Equations
8. Complex Numbers

Unit IV (2 weeks)

1. Quadratic Functions and Equations
2. Completing the Square
3. Develop and Use Quadratic Formula
4. Applications
5. Graph and Analyze Quadratic Functions
6. Quadratic Inequalities (if time)

IX. Evaluation:
Students will be evaluated on the basis of frequent quizzes, homework assignments, and at least 3 departmental exams.

X. Bibliography:
Angel, Allen R., *Intermediate Algebra for College Students*, 5th Edition, Prentice Hall, 2000.

Aufmann, Barker, Lockwood, *Intermediate Algebra with Applications*, Houghton Mifflin Co., 2000.

Bittinger, Keedy and Ellenbogen, *Intermediate Algebra, Concepts and Applications*, 5th Edition, Addison Wesley, 1999.

Blitzer, *Intermediate Algebra for College Students*, 2nd edition, Prentice Hall, 1999

Tussy and Gustafson, *Intermediate Algebra*, 1st Edition, Brooks/Cole, 2000.

Syllabus Prepared By: Mitzi Chaffer

Signature

April 14, 2000

Date