

**Mathematics Department
University of Wisconsin Oshkosh**

General Syllabus for

**Mathematics 104
College Algebra (3 Credits)**

Course Description: In this course, we will cover topics including functions, graphs, data analysis and modeling of real world problems, equations and inequalities, polynomial, rational functions; exponential and logarithmic functions. May not receive credit for both Mathematics 104 and 108. This course along with Mathematics 106 will count for Mathematics 108.

Prerequisite: Mathematics 103 with grade of C or better or placement.

Description of Students Who Take the Course:

Mathematics 104 satisfies the University minimum general education mathematics requirement. It is intended for students whose programs require additional mathematics and science courses.

General Goals and Objectives for the Course:

The goal of this course is to give students appreciation of mathematics and algebraic tools they need in order to be successful in other mathematics and science courses. It focuses on problem solving, critical thinking and learning basic concepts in Algebra.

Textbook and Other Required Materials Recently Used:

The textbook is chosen by the committee of College Algebra. They recommended “*College Algebra: Graphs and Models*” by Barnett, Ziegler & Byleen.

Technology: All sections are **required** to use a graphing calculator recommended by the committee of College Algebra. Students will learn to use a graphing calculator as an aid to understand mathematical concepts and computations,

Specific Course Content:

The following list is a suggested list.

Functions, Graphs, and Models

Using Graphing Utilities

Functions

Functions: Graphs and Properties

Functions: Graphs and Transformations

Operations on Functions; Composition

Inverse Functions

Modeling with Linear and Quadratic Functions

- Linear Functions
- Linear Equations and Models
- Quadratic Functions
- Complex Numbers
- Quadratic Equations and Models
- Additional Equation-Solving Techniques
- Solving Inequalities

Polynomial and Rational Functions

- Polynomial Functions and Models
- Real Zeros and Polynomial Inequalities
- Complex Zeros and Rational Zeros of Polynomials
- Rational Functions and Inequalities

Exponential and Logarithmic Functions

- Exponential Functions
- Exponential Models
- Logarithmic Functions
- Logarithmic Models
- Exponential and Logarithmic Equations

Variation by instructor:

Although this course has a common content syllabus across sections and course coordination occurs, teaching methodology and evaluation policies may vary. Evaluation may include quizzes, exams, a comprehensive final, and the collection of homework. In addition, instructors of this course may make additional reading and writing assignments.

Students should consult the individual course syllabus for more information.

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