

# Youngstown State University

Department of Mathematics and Statistics

Course Outline for Mathematics 1548

Course Title: College Business Mathematics I

Text: Lial, Greenwell and Ritchey, Finite Mathematics and Calculus with Applications, 7th Edition, Addison Wesley, 2005

Course Credit: 3 s.h.

Course Prerequisite: MATH 1501 or at least Level 3 on the Mathematics Placement Exam.

Course Description: An introduction to operations research with pre-calculus mathematics. Intended for students in business or for any student who desires to learn the basic concepts of operations research. Topics include: Solving equations and inequalities; algebraic operations; polynomial and rational functions; graphing functions and inequalities; matrices and linear systems; linear programming and the simplex method; and mathematics of finance.

Course Objectives: This course is designed to introduce students to the concepts of operations research and college algebra. This course will improve quantitative, critical thinking, written and oral communication skills of each student. Successful students will also develop skills to:

1. solve equations and inequalities,
2. graph linear and polynomial functions,
3. solve linear systems using elementary row operations and linear programs using the simplex method,
4. investigate the relationship between a linear program and its dual,
5. employ the simplex method to solve elementary problems,
6. apply the concepts of simple and compound interest,
7. apply the concepts of limit and continuity to a variety of functions, and
8. employ technology, when appropriate, to solve problems considered in the course,

<u>Chapter/Section</u>	<u>Topics</u>
R4	Review of linear equations.
1.1-1.2	Linear Functions
2.1-2.5	Systems of Linear Equations and Matrices
R5	Linear inequalities.
3.1-3.3	Linear Programming – The graphical method
4.1-4.3	Linear Programming – The Simplex method
R1- R4	Review of polynomials, factoring, rational expressions, and equations.
10.1-10.3	Functions, quadratic functions, polynomial functions, and rational functions.
R6, R7	Review of exponents and radicals.
10.4-10.6	Exponential and logarithmic functions.
11.1	Limits
Optional Sections: 1.3	The least squares line
2.6	Input-output models
5.1-5.3	Interest and Annuities
11.2	Continuity

The instructor may chose to cover the topics in a different order. Review sections will be covered rapidly. The material after Chapter 4 is needed for the follow up course, Math 1549, and will be thoroughly covered.

Students with Disabilities: In accordance with University procedure, if you have a documented disability and require accommodations to obtain equal access in this course, please contact the Office of Equal Opportunity and Disability Services at the beginning of the semester or when given an assignment for which an accommodation is required. Students with disabilities must verify their eligibility through the Office of Disability Services in Wick House, (330) 941-1372, intake procedure.

Grading: Grades will be determined by performance on exams, a comprehensive final and homework assignments, which may include an oral or written project. The instructor will either collect and grade homework or give frequent quizzes. An important component of doing mathematics is expressing ideas in a clear and correct manner. With practice, students will become adept at communicating in mathematics. Responsible collaboration with peers is encouraged as it will help to assess whether you are expressing your mathematical ideas well.

Attendance and grading policy: Will be distributed by the instructor.

\*Students are required to use a graphing calculator in this course. The recommended calculator is a TI-83 Plus.

Semester: Summer 2007 - first 6 week term

The last day to drop the course with a grade of "W" is: Thursday, June 14, 2007