

Math 1630

SYLLABUS

TITLE	MATH FOR MANAGERIAL, SOCIAL AND LIFE SCIENCES
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PREREQUISITES: (1) Two years of high school algebra AND a math enhanced ACT score greater than 25 OR (2) Math 1710.

TEXT: *FINITE MATH, An Applied Approach* by Sullivan and Mizrahi (Wiley, 9th Ed.)

PURPOSE: This course is designed to build on a solid background in algebra by providing adequate coverage of topics which are usually omitted or covered less thoroughly in prerequisite courses, but whose understanding is assumed in subsequent courses in the managerial, social and life sciences.

LEARNING OUTCOMES: Upon completion of this course, students will have the ability to:

- (a) solve systems of linear equations, matrices and linear programming applications sufficient economics, operations management and other disciplines where optimization of linear systems is important.
- (b) use the basic formulas (for present value, future value, payment size or interest rate of an annuity, etc.) found in finance courses and in personal finance.
- (c) solve probability and statistics problems found in courses taught in various academic departments.

REQUIREMENTS: Daily class attendance and participation. Reading of assigned material and completion of homework problems. Writing hour exams (3-5, depending on the instructor). Writing the Semester Exam.

EVALUATION: (Instructors may vary) GRADING SCALE is typically: 90+=A, 80+=B, 70+=C, 60+=D. "W" and "I" are given only in accordance with university policy.

TOPICAL OUTLINE:

- I LINEAR SYSTEMS AND MATRICES Sec 1.1-4.2 (May omit 1.4, 2.6, 2.7)
 - (a) Equations of lines
 - (b) Systems of linear equations
 - (i) solution graphically
 - (ii) by substitution or elimination
 - (iii) solution using matrices by Gaussian elimination
 - (c) Algebra of matrices
 - (d) Linear Programming
 - (i) graphical solution
 - (ii) using the simplex method to solve problems in standard form

- II MATH OF FINANCE Sec. 5.1-5.6 (May omit 5.5)
 - (a) Analysis of loans paid back in a lump sum using simple, bank discount or compound interest calculations.
 - (b) Analysis of ordinary annuities by finding present value, future value, payment or interest rate if the remainder are given along with the number of payments.
 - (c) Application of annuities to depletion investments and evaluation of bonds as well as other investment opportunities.

- III COMBINATORICS Sec 6.1-6.5 (May omit 6.6)
 - (a) Sets and Operations on sets. (Survey Analysis is optional)
 - (b) Multiplication Principle and Permutations
 - (c) Combinations and Pascal's Triangle
 - (d) Partitions

- IV PROBABILITY Sec 7.1-8.2
 - (a) Definitions of Random Experiment, Sample Space, Event and Probability of an Event
 - (b) Basic properties of Probability and Odds
 - (c) Probability of a Union and Mutually Exclusive Events
 - (d) Conditional Probability
 - (e) Probability of an Intersection and Independence
 - (f) Bayes' Formula
 - (g) Binomial Distribution

Please note the following dates and information:

- Last day to drop without a grade:
- Last day to drop with a "W":
- A grade of I will be given only in accordance with the University Policy.
- If you have a disability that may require assistance or accommodation, or you have questions related to any accommodations for testing, note takers, readers, etc., please speak with me as soon as possible. Students may also contact the Office of Disabled Students Services (898-2783) with questions about such services.

• Students receiving the lottery scholarships:

To retain Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, or I in this class may negatively impact TELS eligibility. Dropping a class after 14 days may also impact eligibility; if you withdraw from this class and it results in an enrollment status of less than full time, you may lose eligibility for your lottery scholarship.