CALCULUS FOR THE MANAGERIAL, LIFE, AND SCOCIAL SCIENCES

MATH 1930

Course Description:

Basic ideas of calculus are surveyed with applications: functions, limits, derivatives, and integrals. Trigonometry is not required. May not be used as a prerequisite for MATH 1960. Credit will not be granted for both MATH 1930 and 1950. **3 credits**

Prerequisites:

Students must have an ACT Math sub score of at least 25 within the last 5 years, a COMPASS Test score of at least 6 within the last 2 years, or MATH 1320 within the last 2 years with a grade of C- or better.

Overview of content and purpose of the course:

This course is designed for non-physical science majors. All of the basic concepts of MATH 1950, Calculus I, are introduced and applied to various disciplines. The level of technical sophistication, however, is less than MATH 1950.

Anticipated audience/demand:

This course is intended for students majoring in business, management, economics, or the life and social sciences, but is appropriate for students of any discipline.

Major topics:

1) Algebra, Linear Functions, and Nonlinear Functions Review

2) The Derivative
    a. Limits
    b. Continuity
    c. Rates of Change
    d. Definition of the Derivative
    e. Graphical Differentiation

3) Calculating the Derivative
    a. Techniques for Finding Derivatives
    b. Derivatives of Products & Quotients
    c. The Chain Rule
    d. Derivatives of Exponential Functions
    e. Derivatives of Logarithmic Functions

4) Graphs and the Derivative
    a. Increasing & Decreasing Functions
    b. Relative Extrema
    c. Higher Derivatives, Concavity, and the Second Derivative Test
    d. Curve Sketching

5) Applications of the Derivative
    a. Absolute Extrema
    b. Applications of Extrema
    c. Implicit Differentiation
    d. Related Rates
    e. Differentials: Linear Approximation

6) Integration
    a. Antiderivatives
    b. Substitution
    c. Area & the Definite Integral
    d. The Fundamental Theorem of Calculus
    e. The Area between Two Curves

Methods:

This course will be presented in a lecture/discussion format. All homework, quizzes, and exams will be computer generated and taken in the Math Lab.

Student role:

Students must attend and participate in class, in addition to completing course requirements.

Textbook:

Math 1930 Notes Packaged with MYMATHLAB PLUS, Lial Packaging

February 2016