

SYLLABUS
PART I
EDISON COMMUNITY COLLEGE
MTH 226S CALCULUS FOR BUSINESS AND LIFE SCIENCES
4 CREDIT HOURS

COURSE DESCRIPTION

Designed for business and life science majors. Topics include limits, continuity, the derivative and techniques of differentiation; graphing techniques; logarithmic and exponential functions; anti-derivatives, definite integrals and techniques of integration; applications of the derivative and integral to business and life sciences. Not open to students with credit in MTH 221S and MTH 222S. Prerequisite: Satisfactory math assessment score and four years of college preparatory mathematics or a grade of “C” or better in MTH 122S or MTH 128S.

COURSE GOALS

The student will:

Bloom's Level		Gen Ed Outcomes
3	1. Determine and evaluate the limits of functions	
3	2. Determine and evaluate the continuity of functions	
3	3. Show the existence of infinite limits and limits at infinity	
4	4. Explain the meaning of the derivative of a function	
3	5. Determine the derivative of functions using all available theorems	
5	6. Formulate solutions to problems using ideas of derivative including marginals, higher order derivatives, tangent lines, rates of change, etc.	
3	7. Determine absolute extrema on a closed interval, relative extrema, increasing and decreasing intervals, concavity and inflection points using derivative properties.	
3	8. Solve applied optimization problems	
3	9. Demonstrate the Fundamental Theorem Calculus by determining indefinite and definite integrals.	
3	10. Show how the integral defines the area under a curve and use the idea in applications such as total value and average value	
3	11. Use integration techniques to evaluate integrals	
3	12. Solve business applications using differential and integral calculus	
3	13. Demonstrate the use of derivative and integral techniques in the application of polynomial, rational, algebraic, exponential, and logarithmic functions	

CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

TOPIC OUTLINE

1. Functions and Limits
2. Limits and Continuity
3. The Derivative and Techniques of Differentiation

4. Higher Order Derivatives and Chain Rule
5. Optimization
6. Implicit Differentiation and Related Rates
7. Exponential and Logarithmic Functions
8. Antiderivatives and Definite Integrals
9. Definite Integrals and Areas
10. Applications of Integration
11. Integration Techniques