

Middlesex County College
Edison, New Jersey

Mathematics Department

Date: July 14, 2009

Course Title: Analytic Geometry & Calculus I (Part A)

Course No.: MAT 131A

Class Hours: 3 per week

Laboratory Hours: 0

Credit Hours: 2

Department Head Approval:

Maria DeLucia, Ph.D.

Dean Approval:

Reginald Luke, Ph.D.

Prerequisite: MAT 129A/129B or MAT 129 - Precalculus, or appropriate score on the college placement test.

Textbook of Course:

Author: Larson/Edwards

Title: Calculus of a Single Variable, 9th Edition

Publisher: Brooks/Cole, Cengage Learning

Catalog Course Description:

The first half of the two-semester sequence of Analytic Geometry and Calculus I. Presents fundamental ideas of calculus such as the derivative, integral, and their applications. Topics include fundamentals of analytic geometry and transcendental functions. The first course in a sequence of calculus courses intended for the student interested in mathematics, engineering, and the natural, physical and social sciences. *TI 83 or TI 84 calculator required.*

Objectives of Course:

The student will demonstrate through quizzes, examinations, homework and projects the ability to:

1. Identify, comprehend, and manipulate abstract symbols and their uses in a variety of situations.
2. Establish strong conceptual foundations.

3. Analyze mathematical situations with ideas and problem solving techniques.
4. Make decisions about solving complex problems.
5. Establish underlying mathematical models for conceptual understanding.

Day-by-Day Outline

1.	Chapter P P.1-P.3 Review Functions, Graphs and Rates of Change	15.	Review
2.	Appendix: Review Trigonometric Functions	16.	Test 2
3.	Chapter 1 1.1 A Preview of Calculus (Quickly) 1.2 Finding Limits Graphically and Numerically	17.	Chapter 3 3.1 Extrema on an Interval
4.	1.3 Evaluating Limits Graphically and Numerically	18.	3.2 Rolle's Theorem and the Mean Value Theorem
5.	1.4 Continuity and One-Sided Limits	19.	3.3 Increasing and Decreasing Functions and the First Derivative Test
6.	1.5 Infinite Limits	20.	3.4 Concavity and the Second Derivative Test
7.	Review	21.	Review
8.	Test 1	22.	Test 3
9.	Chapter 2 2.1 The Derivative and the Tangent Line Problem	23.	3.5 Limits at Infinity
10.	2.2 Basic Differentiation Rules and Rates of Change	24.	3.6 A Summary of Curve Sketching 3.7 Optimization Problems
11.	2.3 The Product and Quotient Rules and Higher-Order Derivatives	25.	3.7 Optimization Problems (cont.) 3.9 Differentials
12.	2.4 The Chain Rule	26.	Review
13.	2.5 Implicit Differentiation	27.	Test 4
14.	2.6 Related Rates	28.	Review for Final

BASED ON TWO WEEK CLASS MEETINGS PER WEEK