

Mth 271

COURSE OUTLINE

Prerequisites:

MTH 163, MTH 166 or equivalent, or a placement recommendation for MTH 271.

Course Description:

Presents limits, continuity, differentiation of algebraic and transcendental functions with applications, and an introduction to integration.

Semester Credits: 3 Lecture Hours: 3 Lab/Recitation Hours: 0

Course Outcomes

At the completion of this course, the student should be able to:

1. Evaluate limits and interpret them graphically.
2. Determine the derivatives of algebraic, exponential and logarithmic functions.
3. Solve applied problems with derivatives.
4. Use derivatives to determine the graphical properties of functions.
5. Apply derivatives to solve Exponential Growth and Decay Problems.
6. Determine Indefinite Integrals.

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Class Name and Number

Required Materials:

Textbook, scientific calculator

Textbook:

Calculus and its Applications (Expanded Version), Bittinger, Ellenbogen, & Surgent, Pearson
ISBN #: 9780134122588

Topical Description: (Outline chapters and sections to be covered in the book)

Topical Description

<u>Section</u>	<u>Topics</u>
3.1	Intro to Limits
3.2	Continuity
3.3	Infinite Limits and Limits at Infinity
3.4	The Derivative
3.5	Basic Differentiation Properties
3.6	Differentials
3.7	Marginal Analysis in Business and Economics
4.2	Derivatives of Exponential and Log Functions
4.3	Derivatives of Products and Quotients
4.4	Chain Rule
4.5	Implicit Differentiation
4.6	Related Rates
4.7	Elasticity of Demand
5.1	1 st Derivative and Graphs
5.2	2 nd Derivative and Graphs
5.3	L'Hopital's Rule (OPTIONAL)
5.4	Curve-Sketching Techniques
5.5	Absolute Maxima and Minima
5.6	Optimization

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- 6.1 **Antiderivatives and Indefinite Integrals**
- 6.2 **Integration by Substitution**
- 6.4 **Fundamental Theorem of Calculus**

Notes to Instructors

(List information about optional topics, departmental exams, etc)

1. **Keep Chapter 6 on an elementary level.**
2. **The Final Exam must be comprehensive.**
3. **Section 5.3 is optional.**

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