

MATH 122 – Introduction to Calculus

Course Description from Bulletin: Basic concepts of calculus of a single variable; limits, derivatives, and integrals. Applications. Credit math not be granted for both MATH 122 and MATH 123. (3-0-3)

Enrollment: This course does not count for graduation in any engineering, mathematics, natural science or computer science degree program.

Textbook(s): Calter & Calter, *Technical Mathematics with Calculus*, 5th ed., Wiley & Sons, 2007.
Abbott, E.A., *Flatland*, Dover (in some sections)

Prerequisites: None

Objectives:

1. Students will learn to compute derivatives using the basic formulas.
2. Student will learn to compute tangent lines to graphs as local linear approximations.
3. Students will learn to find extreme points of functions.
4. Students will learn to compute basic antiderivatives.
5. Students will learn to compute partial derivatives.

Lecture schedule: 3 50-minute (or 2 75-minute) lectures per week.

Course Outline:

1. Basic properties of functions and graphs of straight lines
2. Derivatives – meaning and rules for computation.
3. Applications of derivatives
4. Chain rule and implicit differentiation
5. Antiderivatives and definite integrals
6. Applications
7. Functions of several variables
8. Partial derivatives
9. Taylor polynomials and infinite series

Assessment:	Homework/Quizzes	20-30%
	Computer Programs/Projects	10-20%
	Tests	40-50%
	Final Exam	20-30%

Syllabus prepared by: Art Lubin and Jerry Frank

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