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SAMPLE SYLLABUS
This document is published only as an indication of what is typically taught in this course. Instructors have the responsibility of deciding on the topics to be omitted, additional topics to be included, and the emphasis, ordering, and pacing of presentation of topics.

MTH 137: College Calculus 1B

Number of Course Credits: 2

Course Description

This half-semester course comprises the second half of MTH 141.
MTH 136 and MTH 137 together are equivalent to MTH 141.

Required Text(s) & Materials

Calculus: Early Transcendentals, Ninth Edition, James Stewart, Daniel Clegg, Saleem Watson.

Prerequisites

MTH 136 with a recommended grade of C or higher.

Notes

This course covers the second half of the material of MTH 141. Topics of MTH 137 include finding maxima and minima of functions using derivatives, curve sketching, optimization problems, and integration.

Learning Outcomes

Outcome (Student will be able to...)	Method of Assessment
- Find critical points, minima and maxima of a function using its first and second derivatives - Use derivatives to sketch graphs of functions - State the mean value theorem and apply it in computations - Apply L'Hospital's rule to compute limits of functions - Use derivatives to solve optimization problems - Use derivatives to solve practical problems involving rectilinear motion.	HW 1, 2, 3 Exam 1
- Find the area of a region bounded by a curve and the x-axis using rectangles and limits. - Find the area of a region bounded by a curve and the x-axis using indefinite integrals and the fundamental theorem of calculus - Use integrals to solve practical problems involving rectilinear motion.	HW 4, 5, 6 Exam 2
- Choose appropriate methods or models for a given problem, using information from observation or knowledge of the system being studied.	HW 1, HW 2, HW 3, HW 4, HW 5, HW 6, Exam 1, Exam 2
- Employ quantitative methods, mathematical models, statistics, and/or logic to analyze data and solve real-world problems beyond the level of basic algebra.	HW 1, HW 2, HW 3, HW 4, HW 5, HW 6, Exam 1, Exam 2
- Identify common mistakes and/or limitations in a.) empirical and/or deductive reasoning, and b.) mathematical, quantitative, and/or logical problem solving.	HW 1, HW 2, HW 3, HW 4, HW 5, HW 6, Exam 1, Exam 2
- Interpret mathematical models, formulas, graphs, and/or tables, to draw inferences from them, and explain these inferences.	HW 1, HW 2, HW 3, HW 4, HW 5, HW 6, Exam 1, Exam 2

Course Schedule

Week	Sections	Topics	Exams
1	4.1, 4.2,	Maximum and minimum values. The mean value theorem.	
2	4.3, 4.4, 4.5	Derivatives and the shape of a graph. Indeterminate forms and L'Hospital's rule. Summary of curve sketching.	
3	4.7	Optimization problems.	
4	4.9, 5.1	Antiderivatives. Areas and distances.	Exam 1
5	5.2, 5.3	The definite integral. The fundamental theorem of calculus.	
6	5.4, 5.5	Indefinite integrals and the Net Change Theorem. The substitution rule.	
7	5.5	The substitution rule.	Exam 2

Exam Schedule

Date	Subject
Week 4	Exam 1
Week 7	Exam 2