Math 31E: General Course Outline

Catalog Description

31E. Calculus for Economics Students. (4) Lecture, three hours; discussion, one hour. Requisite: course 31A with a grade of C- or better. Not open for credit to students with credit for course 3B, 3C, or 31B. Calculus for applications to economics. Partial differentiation, implicit functions, exponential and logarithmic functions, extrema, optimization, constrained optimization. P/NP or letter grading.

Textbook

J. Stewart, *Calculus*, 5th Ed., Thomson Learning.

Comment

The following schedule, with textbook sections and topics, is based on 24 lectures. The remaining classroom meetings are for leeway, reviews, and two midterm exams. These are scheduled by the individual instructor.

Schedule of Lectures

Lecture	Sections	Topics
1	4.8	Introduction, Applications to Economics (optional section)
2	6.1	Areas between curves
3	6.2	Volumes (omit volume of revolution)
4	6.5	Average value of a function
5	7.1	Inverse functions
6	7.2	Exponential functions
7	7.3	Logarithmic functions
8	7.4	Derivatives of logarithmic functions
9	10.4	Exponential growth and decay (optional section)
10	7.7	L'Hospital's Rule
11	8.1	Integration by parts
12	8.7	Approximate integration (midpoint rule only)
13	8.8	Improper integrals (type 1 only)
14	9.4	Applications to Economics (optional section)
15	13.1, 13.2	Three dimensional coordinate systems; Vectors
16	13.3	Dot product
17	13.5, 15.1	Equations of planes; Functions of several variables
18	15.3	Partial derivatives
19	15.4	Tangent planes (omit differentials)
20	15.5	Chain rule
21	15.6	Directional derivative, gradient
22	15.7	Maxima and minima
23	15.7	Continued
24	15.8	Lagrange multipliers

Comments

Outline update: R. Brown, 8/03

For more information, please contact Student Services, ugrad@math.ucla.edu.