

**MATHEMATICS 22**  
**CALCULUS FOR BUSINESS**

**Text:** *Brief Calculus with Applications, Fourth Edition*, by R. E. Larson, R. P. Hostetler, and B. H. Edwards

This course is designed mainly for students majoring in business and economics. Credit will not be given for this course if it has already been given for Mathematics 9A or 9HA. Topics include relations and functions (linear, polynomial, logarithmic, and exponential), differential calculus of functions of one and two variables, and integration (definite and indefinite) with applications to business and economic problems.

TOPICS	SUGGESTED NO. OF 50 MIN. LECTURES
Functions, limits and continuity (§§ 1.2–1.6) .....	2
Functions, their graphs and transforms, limits, continuity.	
Differentiation (§§ 2.1–2.8) .....	5
Definition of derivatives and basic rules of differentiation, average rates of change, marginal analysis, higher order derivatives, implicit differentiation, related rates.	
Applications of the derivative (§§ 3.1–3.8) .....	5
Increasing and decreasing functions, extrema and the first derivative test, convexity and inflection points, second derivative test, optimization problems, asymptotes and curve sketching, differentials and marginal analysis.	
Exponential and logarithmic functions (§§ 4.1–4.5) .....	3
The functions and their derivatives, applications to exponential growth and decay.	
Integration and its applications (§§ 5.1–5.6) .....	4
Antiderivatives, general power rule, definite integrals, areas and the Fundamental Theorem of Calculus, more applications of definite integrals.	
Techniques of antidifferentiation (§§ 6.1, 6.2, 6.4, 6.6) .....	3
Integration by substitution or change of variables, integration by parts and present value, integration tables, improper integrals.	
Functions of several variables (§§ 7.3, 7.4, 7.8, 7.9) .....	2
Visual interpretations and examples, partial derivatives, double integrals, applications to area and volume computation.	