MATH 140 OUTLINE
CALCULUS FOR BUSINESS

TEXT: Calculus for Business, Economics, and the Social and Life Sciences, (Brief) 11th Ed.
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Approved: *Effective: FALL 2022*

MATERIAL TO BE COVERED	SECTIONS FROM TEXT	TIME LINE
Algebra concepts	A1, A2, 1.1 – 1.4	6 hours
Limits; One-sided limits; continuity	1.5 & 1.6	4 hours
Definition of derivative; Techniques of differentiation including product, quotient, and chain rules; Higher-order derivatives; Marginal analysis; Implicit differentiation; Related rates (Focus on Business applications)	2.1 – 2.6	9 hours
Increasing/decreasing functions; Relative extrema; Concavity and points of inflection; Optimization, Business and additional applied problems Optional: Rational function curve sketching	3.1 – 3.5	9.5 hours
Exponential and logarithmic functions; Differentiation of exponential and logarithmic functions and their applications Optional: Curve sketching	4.1 – 4.4	5 hours
Indefinite integration; Integration by substitution; The definite integral and the Fundamental Theorem of Calculus; Applications of the definite integral including area between curves and average value of a function; Additional business applications Optional: Differential equations; Additional applications of integration to the life and social sciences	5.1 – 5.5 Optional: 5.6	10 hours
Integration by parts; Improper integration (only over intervals of a constant to infinity), applications Optional: Integration Tables, Numerical integration	6.1 & 6.3 Optional: 6.2	5 hours
Functions of several variables and its domain; Partial derivatives; Optimizing functions of two variables and applications Optional: The method of Lagrange multipliers; Double integrals; Least-squares regression	7.1 – 7.3 Optional: 7.4 - 7.6	5 hours

All hours listed are face-time; i.e. breaks are administered by the instructor separately and are in addition to the hours listed.

4-unit class: hours total 57.5 (30 x 1 hours 55 minutes) – 4 hours for exams + 2.5 hour final exam

- Professors are asked to emphasize that students use correct units when stating answers.
- Math Department Policy can be found at: https://mtsac.instructure.com/courses/33990/files?preview=8920380

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