

Math 144, Fall 2013
- Applied Calculus for Business -
Tuesday & Thursday, 8:00-9:15am, LIB 012

Instructor: Baldvin Einarsson. **Email:** Baldvin.Einarsson@bridgew.edu

Textbook: *Brief Calculus & Its Applications* 13th Edition by Goldstein, Lay, Schneider and Asmar.

Course description: This is a one semester 3 credit course on applied differential and integral calculus with emphasis on business applications. The course outline is the following (the order of the last three chapters might change):

Ch. 1-3: Derivatives etc.

– *Exam at end of September (beginning of October?).*

Ch. 4-5: Exponential function, logarithms, and applications.

Ch. 6: Definite integrals.

– *Exam at end of October (beginning of November?).*

Ch. 7: Several variables

Ch. 8: Trigonometric functions

Ch. 9: Techniques of integration

– *Possibly a third exam from chapters 7-9 if time allows.*

Calculators: Calculators are allowed and you should check as much of your work as you can. However, you will always need to show your work; *a calculator can never replace understanding!* Get a scientific calculator and learn how to use it. It need not be expensive, but must be capable of handling powers, exponential functions, logarithms and memory storage. (You can't use your phone since most phones access the Internet these days).

Learning outcomes At the end of the semester you should be able to:

- Compute average, instantaneous and relative rates of change by evaluating derivatives of polynomial, exponential and natural logarithmic functions as they relate to business concepts .
- Apply rate of change to business concepts such as marginal revenue, marginal cost marginal profit, and elasticity of demand (price and demand).
- Use the first and second derivative to find relative extrema, concavity and points of inflection to graph polynomial and exponential functions as they relate to business concepts such as revenue, cost, profit or demand.
- Solve optimization problems in the context of business applications.
- Calculate antiderivatives of various functions to determine area of a region, and apply these concepts to business concepts such as revenue, cost, and profit.
- Evaluate functions of 2 variables and their partial derivatives to find possible extrema and apply these concepts to business concepts such as productivity.

Mathematics Services: Located within the Academic Achievement Center (AAC) on the lower level of the Maxwell Library. Provides low pressure walk-in assistance or tutoring to individuals or small groups. See website: <http://www.bridgew.edu/mathservices/index.cfm> for hours and information.

Exams and assignments: There will be **two midterm exams** (dates to be announced soon). Plan on attending every lecture. I'll also assign homework from time to time. The final exam will be **cumulative**. Your final grade for the course will be determined by the proposed scheme:

$$\text{Grade} = 30\% \text{ Homework} + 30\% \text{ Midterms} + 40\% \text{ Final.}$$

Please note: There will be no make up homework or quizzes. If anything comes up, please let me know as soon as you can. If your request is reasonable, you'll probably find me reasonable.