

SMTH 122 *Calculus for Management and Social Sciences* **Spring 2005**

Instructor: M.B. Ulmer
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Office Hours:

MWF 11:30 a.m. - 12:20 p.m.

TTh 10:40 a.m. - 11:30 a.m.

Also by appointment or by “heyourgottaminute?”

Text: *Calculus: An Applied Approach*, Sixth Edition, by Larson & Edwards

Web Site: <http://faculty.uscupstate.edu/mulmer>

Calculator and software: A graphing calculator is required. The preferred calculator, and the only one supported by the instructor, is the TI-83(or -83Plus). If you already have a TI-82, it can be used for most activities. You may use other models and brands only if you take full responsibility for being able to perform all required tasks. Most calculators do not have the same capabilities as the TI-83/83plus, and using another calculator is much like trying to learn from a textbook different from that used in the class. Software available on University lab computers may be required for use in class, including such as *Excel*, *Graphmatica*, and *(X)PLORE*. Software introduced in class may also be required on tests and the final examination.

Catalog Description (partial): (3) Derivatives and integrals of elementary algebraic, exponential, and logarithmic functions; maxima, minima, rate of change, area under a curve and volume... Prerequisite: Mathematics 121, 126 or eligibility for exemption from Mathematics 121.

Course Objective: To introduce the student to the utility of calculus as a tool for describing change as it exists in problems in business and industry. Upon successful completion of the course you should be able to

I. Describe relationships among quantities (e.g. advertising expenditures, costs or revenues) that are important to business:

A. Write or formulate mathematical functions which describe one real quantity's relationship to another when given

1. Initial and marginal values
2. Paired data.

B. Support results in part A with logic, mathematical principles and common sense.

II. Solve problems associated with the changing nature of related quantities.

A. Calculate measures of change and/or rates of change between quantities that are functionally related:

1. Using theoretical definitions
2. Using rules of calculus
3. Using technology.

B. Compute cumulative quantities from functions describing rates of change of those quantities.

1. Using theoretical considerations

2. Using the fundamental theorem of calculus
 3. Using technology.
- III. Interpret and evaluate your mathematical solutions in the associated real context.

Makeup Tests are given only for good reasons, and at the instructor's convenience. Athletes and others who must miss class for University sponsored events should notify the instructor in advance.

Attendance and attentiveness: A maximum of five classes may be missed. In reality, a student who misses even a few days puts himself or herself at a severe disadvantage. Significant content is covered each period. The class experience itself is as important as the end result. You are responsible for all material covered and work assigned during an absence. Excessive tardiness is disruptive to the class, and detrimental in the same way as absence, and so, **excessive tardiness will be considered absence**. Cell phones are not to be used in class. A student who uses a cell phone in class will be given a zero daily grade. (See grading below. If you have an emergency that requires you to keep your cell phone on, notify the instructor *before class*.)

Grading: There will be 2-3 hour tests and a comprehensive final exam counting the weight of two tests. A portfolio grade will carry the weight of another hour test. Daily grades derived from in-class performance and pop quizzes may be used to determine the final letter grade in borderline cases. (For example, a 79 test average and excellent daily work will result in a B in the course.) [Note: If you are assigned to solve a problem at the board, only three grades are possible – 100, 50 or 0. A grade of 100 is earned for displaying work that you have previously attempted (even if it is wrong). A grade of 0 is earned if you cannot attempt the problem or if you are absent when your name is called. A grade of 50 is earned if you are knowledgeable enough to attempt the problem, but have not prepared a solution in advance.]

Grading Scale: 100-90% = A; 89-80% = B; 79-70% = C; 69-60%=D; Below 60% = F. "Plus" grades may be awarded for high B, C, or D final grades if work is judged meritorious by some measure not anticipated by the above specifications.

Last day to withdraw without penalty: Wednesday, 30 March.

Notes: 1. Any student having a physical or learning disability requiring modifications of the instructional or testing environment, methods, or format, must inform the instructor of such disability the first week of class.

2. This is a tentative syllabus. Modifications may be necessary as we progress.