

University of Regina
Department of Mathematics and Statistics

MATH 103-002 Calculus for the Social & Management Sciences
Course Outline, Winter 2007-10

Instructor: Edward Doolittle, Edward.Doolittle@uregina.ca
Web site: <http://www.math.uregina.ca/~doolittl/math103/>
Office: CW 307.19; phone 337-3107
Office Hours: TR11:30-12:30 and TR 2:30-3:30, or by appointment

Lecture Time: TR 10:00-11:15 in CL 130

Textbook: Goldstein, Lay, Schneider, Asmar. Calculus and its Applications, 11th edition. Pearson Education, 2007.

Calendar Description: Differentiation of algebraic, exponential, and logarithmic functions. Optimization, curve sketching, integration by substitution. Note: This is a terminal course in calculus. Students who wish to take further calculus course should initially take MATH 105 or 110. Students can only receive credit for one of MATH 103, 105, and 110.

Prerequisites: Mathematics B30 or Algebra 30 with a grade of at least 65%. Students are expected to have the proper prerequisite for the course. Students without the proper prerequisite may be removed from the class at any point during the semester.

Course Content: Understanding limits, especially in the context of tangents, asymptotes, and area calculations. Calculation and algebraic simplification of derivatives of functions. Differentiation rules. Equation of a tangent line, linear approximation, local convexity. Graphing. Discussion of the polynomial functions up to degree 3 and the functions $\frac{1}{x}$, $\frac{1}{x^2}$, $ax + b + \frac{c}{x}$, \sqrt{x} . Calculus and algebra of exponential and logarithmic functions. Indefinite and definite integral. Simple examples of integration by substitution. Application of calculus to economic and demographic problems. Compound interest and investment, population growth, optimization as applied to revenue, profit, inventory. Chapters covered are 0, 1, 2, 3, 4, 5, 6, and section 9.1, with the exception of sections 3.3, 5.3, 5.4, and 6.5.

Evaluation:

Four Quizzes (various Thursdays, last 20 minutes of lecture):	20%
Midterm (Thursday, February 8):	20%
Midterm (Thursday, March 22):	20%
Final Exam, (Saturday, April 21, 9 am-12 noon):	40%

The quizzes will consist of problems taken nearly verbatim from the weekly problem sets (see below).

Attendance Policy: Regular and punctual attendance provides a foundation for academic success, and is expected of all students. When the persistent lateness or absence of a student jeopardizes the learning or the evaluation of the work of others in the course, the student may be subject to penalty, including being dropped from the course or barred from writing the final examination. One written warning will be provided before such action is taken.

Assignment Policy: Problem sets will be assigned weekly on Tuesdays and will be the basis of quizzes to occur in the last 20 minutes of the lecture on the Thursday nine days after the problem set is assigned. You will find that test and exam questions are similar to and require mastery of the techniques and ideas from the problem sets, making it imperative that you take the problem sets seriously.

Test and Exam Policy: There will be no make-up tests for missed midterms. If you have a legitimate, documented excuse (such as a medical emergency), then the portion of the grade for the missed midterm will be added to the weight of the final exam. Undocumented or insufficiently legitimate excuses for absence from an exam will result in a grade of 0 for that exam. There are no make-up final exams except as (rarely) allowed by your faculty's rules.

Special Needs: Any student with a disability who may need accommodations should discuss them with the course instructor after contacting the Coordinator of the Disability Resource Office, RC 251.15, at 585-4631.

Honesty and Integrity: Please refer to section 5.14 of the University of Regina Undergraduate Calendar. In particular, quizzes, tests, and examinations are designed for students to show the instructor how well they have mastered the course material. Work presented on such evaluations therefore must be the student's own. Academic misconduct is dishonest behaviour or attempted dishonest behaviour which contravenes the general principle of academic honesty and which may include using books, notes, diagrams, electronic devices, or any other aids during an evaluation without the explicit permission of the instructor; copying from the work of other students; communicating with others during the evaluation; commissioning or allowing another person to write a test on one's behalf; communicating advance knowledge of an exam to others; and altering answers on a quiz, test, or examination that has been returned. Penalties for academic misconduct will include a grade of 0 on the evaluation in question and referral to the dean's office for further investigation.

Calculator Policy: A calculator may be helpful for some quizzes, tests, and examinations in this course. Use of a non-programmable calculator from the following list will be permitted on evaluations: Sharp EL510 (recommended), Casio fx-260, or Texas Instruments TI 30X. Use of any other calculator or electronic aid on a quiz, test, or examination without the prior permission of the instructor will be considered grounds for academic misconduct.

All three types of calculators are basically equivalent. All three come in both solar or battery powered versions as indicated by additional letters at the end of the name. For example, the U of R bookstore sells the Sharp EL 510RB (the battery powered model) for \$12.50. The TI 30X comes in both an A and a IIB model. The permitted calculators offer basic arithmetic functions, trigonometric, exponential, logarithmic, and hyperbolic functions, operations with fractions, and basic statistics, have single line display, and single number memory capability. The SHARP EL510 model is approved for use on College Entrance Examinations in the US. The TI 30X is approved for use by the Society of Actuaries for use on actuarial examinations.