Department of Mathematics
136.151 Applied Calculus I, Sept. - Dec. 2005

INSTRUCTORS
L01: Dr. S. Kalajdzievski (434 Machray Hall, 474-6929, **sasho@cc.umanitoba.ca**)
L02: Dr. K. Kopotun (422 Machray Hall, 474-9789, **kopotunk@cc.umanitoba.ca**)

ASSESSMENT IN COURSE
The final grade is a combination of results on four quizzes, one midterm test, and a final examination. Quizzes of 15-20 minutes duration will be conducted during the tutorials in the weeks of **September 18, October 16, November 6, and November 20**. The best 3 out of 4 will count for a total of 20% of the course grade. The 60-minute midterm will take place on **Thursday, October 27, 2005** from **5:30 to 6:30** in rooms to be announced in class. It counts 25% of the course grade. The remaining 55% of the course grade is based on a 2-hour final examination to be scheduled by the Student Records Office. Students with a grade of less than 40% on the final examination will be assigned a final grade of **F** irrespective of term work. One page of information, 21.6x28.0 centimeters (8.5x11 inches), handwritten on both sides (not mechanically reproduced), is allowed for all quizzes, the midterm, and the final examination. ***Calculators and other computing devices are NOT permitted***.

TEXTBOOK: Calculus for Engineers, 3d edition, by D. W. Trim;
Optional: Student Solutions Manual

COURSE OUTLINE: With reference to the above book, the following topics will be covered:

❑ **Review and Self-review** (Sections 1.1-1.8)
A brief review of analytic geometry and functions. Note that only some of these sections will be discussed in class, and students are expected to review the rest on their own. Students are responsible for and are expected to know all material in Chapter 1 irrespectively of whether or not it was discussed during lectures.
❑ **Limits and Continuity** (Sections 2.1-2.4)
Limits, infinite limits, limits at infinity, continuity.
❑ **Differentiation** (Sections 3.1-3.12)
The derivative, rules for differentiation, higher-order derivatives, velocity and acceleration, chain rule, extended power rule, implicit differentiation, derivatives of trigonometric, exponential, and logarithm functions, logarithmic differentiation, mean value theorem.
❑ **Applications of Differentiation** (Sections 4.1-4.8, 4.11)
Newton's method, increasing and decreasing functions, relative extrema, concavity and points of inflection, absolute extrema and applied extrema problems, velocity and acceleration, related rates, differentials.
❑ **Indefinite Integrals** (Sections 5.1-5.3)
The indefinite integral, velocity and acceleration, change of variable.
❑ **Definite Integrals** (Sections 6.1-6.4, 6.7)
The definite integral, sigma notation, Riemann sums, fundamental theorem of integral calculus, change of variable.

ACADEMIC HONESTY
The Department of Mathematics, the Faculty of Science and the University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations or assignments as serious offenses and may assess a variety of penalties depending on the nature of the offense.

Acts of academic dishonesty include bringing unauthorized materials into a test or exam, copying from another student, plagiarism and examination personation. Students are advised to read section 7 (Academic Integrity) and section 4.2.8 (Examinations: Personations) in the "General Academic Regulations and Requirements" of the current Undergraduate Calendar. ***Note, in particular that cell phones and pagers are explicitly listed as unauthorized materials, and hence may not be present during tests or examinations.***

Penalties for violation include being assigned a grade of zero on a test or assignment, being assigned a grade of "F" in a course, compulsory withdrawal from a course or program, suspension from a course/program/faculty or even expulsion from the University. For specific details about the nature of penalties that may be assessed upon conviction of an act of academic dishonesty, students are referred to University Policy 1202 (Student Discipline Bylaw) and to the Department of Mathematics policy concerning minimum penalties for acts of academic dishonesty.

The Student Discipline Bylaw is printed in its entirety in the Student Guide, and is also available on-line or through the Office of the University Secretary. Minimum penalties assessed by the Department of Mathematics for acts of academic dishonesty are available on the Department of Mathematics web-page.

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report incidents of academic dishonesty to the Head of the Department.

ADDITIONAL NOTES
1. Voluntary withdrawal deadline is **November 16**.
2. If you miss a quiz or the midterm, you will be assigned a mark of zero unless reasons and acceptable supporting evidence are provided. There will be no make-up quizzes or midterm.
3. Students with a grade of **less than 40%** on the final examination will be assigned a final grade of **F** irrespective of term work.