

Math 1A03 Calculus for Science I Information Sheet
Term 1 Autumn 2008–2009

Instructors:

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Math Help Centre: HH104 M-R 2:30-8:30, F 2:30-6:30

Website: http://www.math.mcmaster.ca/~haskell/math1a_08-09/math1a08.html

Text:

1) *Calculus: early transcendentals, 6th edition*, James Stewart, Thomson Brooks/Cole. Students may use other editions, but this will not be supported by the instructors. That is, students are responsible for comparing the editions, and being aware of discrepancies. All references to the text, including recommended problems, will be to the sixth edition.

2) *WebAssign*, <http://www.webassign.net> Students must establish a WebAssign account to complete the quizzes and have access to the homework problems. Access to WebAssign is free with the access code provided in a new textbook bought from Titles this year. If you are using a used textbook, or one bought elsewhere, you will have to pay to register for a WebAssign account.

Course objective: To learn about the differential and integral calculus. We begin by consolidating the knowledge of the differential calculus, based on the Ontario Grade 12 course Calculus and Vectors (or equivalent), from the point of view of using calculus to understand the graphs of functions. We move on to applications of the differential calculus, especially linear approximation. Then we will begin to discuss the integral calculus, including the Fundamental Theorem of Calculus, applications, and techniques of integration.

Weekly schedule: See the website for a more detailed outline of the course material.

Lectures and Tutorials: There will be three lectures and one tutorial per week. The lectures will be used to present new material. The tutorial is an opportunity for students to solidify their grasp of concepts, as well as working through examples and reviewing for midterms. You are required to attend all lectures and tutorials.

Assessment: Your grade will be based on the diagnostic test, ten WebAssign quizzes, one extended project, two in-class midterms and the final exam. The distribution is as follows, although the instructors reserve the right to change the weight of any portion of this marking scheme.

Diagnostic Test (both parts) — 2%
WebAssign Quizzes — 10%

Project — 3%
Midterm I — 20%
Midterm II — 20%
Final — 45%

The tentative dates for tests and exams are:

Midterm I: Tuesday, 7 October, 19:00–20:00

Midterm II: Tuesday, 11 November, 19:00–20:00

Web Assign: The course page on WebAssign has Quizzes, Recommended Problems, and Tutorials assigned by week or chapter. The quizzes are required. These are very short tests, based on the material covered in class that week. The due dates (on Tuesdays) are posted on web, and indicated with the quiz. The goal of the quizzes is to keep you up-to-date with the material. No excuses will be accepted for missed quizzes.

Recommended problems: are an essential part of the course. Working through these problems will help you understand the material of the course. It cannot be stressed too much that to understand mathematics you must DO it. Recommended problems are given on the website and on Web Assign. When you submit solutions online, WebAssign will mark your solutions, and give hints. You can also submit solutions to the TA to look over, and discuss problems with the TAs in the Math Help Centre. The recommended problems are the minimum work you should be doing per week in order to keep up with the material of the course. Problems in the Tutorials will walk you through examples.

Projects: Each project is a more in-depth application of the ideas of calculus. You must do ONE of the four projects:

- 2.7 Early Methods for finding tangents
- 3.1 Building a better roller coaster
- 3.4 Where should a pilot start descent?
- 4.1 The calculus of rainbows

Each one has a deadline close to the time at which the relevant material will be covered. Thus you have a choice of four, but the longer the project is postponed, the less choice you have. If you do more than one project, the marks will be given as extra credit, at the instructors' discretion.

Exams: The exams will involve both theory and examples. You will be required to do problems that involve both proofs and calculations. At least one problem on each exam will be chosen from the list of recommended problems on the course website.

All work submitted must be YOUR OWN. At the same time, you are encouraged to discuss problems and general ideas with each other. Mathematics need not be an isolating activity. What you may not do is to copy someone else's work.

To be explicit: You MAY print out a WebAssign assignment and ask your instructor, TA, or another student for help on how to do the problems. You MAY NOT have another student work the problem for you, and then input the solution.

You MAY discuss the solution to a project with other students. You MAY NOT copy another student's solution.

Important reminders:

Late assignments will not be marked.

Only excuses validated by the Dean's office will be accepted for missing any examinations.

You must bring your student ID to the midterms and the final exam.

Only the McMaster standard calculator Casio fx-991 will be allowed in the midterms and final exam.

Final Policy Notes:

(i) It seems unfortunate but necessary to reproduce the words of the dean on cheating: *Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.*

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy located at

<http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf>

The following illustrates only three forms of academic dishonesty:

Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.

Improper collaboration in group work.

Copying or using unauthorized aids tests and examinations.

(ii) The instructor reserves the right to change or revise information contained in this course outline.