Math 1C03 Mathematical Reasoning Information Sheet
Term 2 Winter 2007–2008

Instructor:
Dr. D. Haskell, HH 316 ext 27244, haskell@math.mcmaster.ca
office hours: Tuesdays 13:00–14:30, Thursdays 9:00–10:30

Website: http://www.math.mcmaster.ca/∼haskell/math1c_07-08/math1c.html

Textbook: 1) *How to prove it: a structured approach,* 2nd edition, Daniel J. Velleman, Cambridge University Press.
 2) *The Millenium Problems,* Keith Devlin, Basic Books.

Course objective: The goals of this course are threefold. First, to learn the basic language and underlying logical tools of advanced mathematics. Second, to begin to get a glimpse of the character of advanced mathematics - the kind of questions one can ask, and the mathematics needed to answer them. Finally, to learn to communicate about mathematics.

Course outline: The structure of the course reflects the three goals. Towards the first goal, we will cover all of the textbook *How to prove it.* You should plan to read the whole book. Some of it will be covered in lectures, but you will be responsible for knowing everything in the text. Secondly, we will read the book *The millenium problems.* For each of the seven problems we will have a guest lecturer who is an expert in the field to tell you more about it. Further, you will read another popular book on mathematics of your own choosing (a list of suggested books will be provided). With a group, you will give a presentation on your chosen reading.
See the website for a daily course outline.

Lectures and Tutorials: There will be three lectures and one tutorial per week. Attendance in lectures is required. The tutorial is provided to give you more examples in problem-solving.

Assessment: Your grade will be based on homework assignments, participation in class, one midterm, one presentation and the final exam. The distribution is as follows, although the instructor reserves the right to change the weight of any portion of this marking scheme.
Homework — 25%
Midterm — 20%
Presentation — 15%
Final — 40%

Homework: There will be one homework assignment per week, consisting of three problems chosen from the text related to the lectures of that week. In addition, there will be recommended problems posted for each section of the text. I *strongly* recommend that you do these problems — in order to do mathematics you must practice doing it. You may hand in any of these problems for feedback, but they will not count towards the homework grade. Homeworks will be due on Wednesdays, IN CLASS.

Presentation: In small groups, you will give a presentation on a popular book about mathematics that you have read. A list of suggested books will be provided later in the term. You will be expected to explain some of the mathematics which goes beyond what is actually given in the book.

Exams: will include problems like those in the homework and discussed in class. The final exam will include several essay questions related to the guest lectures and student presentations.

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.

Important reminders:
Late assignments will not be marked. Solutions will be posted as soon as the due time has passed.
Only excuses validated by the Dean's office will be accepted for missing any examinations. You must bring your student ID to the midterm 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, specifically Appendix 3, located at
http://www.mcmaster.ca/senate/academic/ac-integrity.htm
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.