Math 3X03 Complex Analysis I Course Information Sheet
Term 2 Winter 2011–2012

Instructor Dr. D. Haskell, HH 316 ext 27244, haskell@math.mcmaster.ca

office hours: M 10:30–11:30, W 10:30–12:30

Website: http://www.math.mcmaster.ca/haskell/math3x_11-12/webpage-math3x-2012.html

Text: *Basic Complex Analysis,* Marsden and Hoffmann, 3rd ed. Freeman.

Course objective: To learn the fundamental ideas in the study of functions of a complex variable. These include: differentiation, integration, power series, residue theorem and the maximum modulus principle.

Topics: (chapter references are to the above textbook)
1) algebra, geometry and toplogy in the complex plane – sections 1.1, 1.2
2) complex functions: examples, continuity, differentiability – sections 1.3, 1.4, 1.5, 1.6
3) contour integrals and Cauchy's theorem – sections 2.1, 2.2
4) Cauchy's integral formula and the maximum modulus theorem – sections 2.4, 2.5
5) power series and Laurent series — 3.1, 3.2, 3.3
6) calculus of residues — 4.1, 4.2, 4.3
See the website for a more detailed course outline.

Lectures and Tutorials: There will be three lectures and one tutorial per week.

Assessment: Your grade will be based on homework assignments, two in-class midterms 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 — 20% Midterm I — 15% Midterm II — 15% Final — 50%
The tentative dates for the midterms are:
Midterm I: Monday, 30 January, in class
Midterm II: Monday, 5 March, in class

Homework: There will be six homework assignments, due approximately every two weeks (dates are on the website). The homework is due at the beginning of class on the date given. I cannot stress too strongly that to learn mathematics you must DO it. Recommended problems are posted on the website. The minimum amount of work to keep up with the class is to do all of the recommended problems as well as the homework problems.

Exams: The exams will involve both theory and examples. You will be required to state definitions, prove theorems that you have seen before, and solve problems similar to the homework, that may involve proofs. The midterms will be held during class time.

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.

You must use the MSAF (available at http://www.science.mcmaster.ca/associatedean/) if you miss a midterm or assignment. You must then consult with me about how the work will be made up.

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, 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.