

## Mathematics 381 (Complex Variables and Transforms)

### Instructor:

Professor J. A. Toth Lectures MW 2:35- 3:55.

Office: BURN 1221

Telephone: 398-3847

Email: jtoth@math.mcgill.ca

Office Hours: W 12:45 - 1:45.

**Textbook:** Complex Variables with Applications by A.D. Wunsch (Third Edition).

**Assignments:** There will be written assignments that are to be handed-in in class. They will be assigned every two weeks. **Please note: As a rule, late homeworks will not be accepted.**

**Tutorials:** There are scheduled tutorials for this course. The time and location of the scheduled tutorials are available on Minerva.

**Midterm Test:** There will be a midterm examination in class on October 26, 2011.

**Syllabus:** The course will cover analytic functions, Cauchy-Riemann equations, simple mappings, Cauchy's theorem, Cauchy's integral formula, Taylor and Laurent expansions and residue calculus. In addition, we will cover properties of one and two-sided Fourier and Laplace transforms, the complex inversion integral, the relation between the Fourier and Laplace transforms and the application of transform techniques to the solution of differential equations. If time permits, we will introduce the Z-transform and give some applications to difference equations.

### Grading Scheme:

Final mark =  $\max(60\% \text{final} + 30\% \text{midterm} + 10\% \text{homework}, 90\% \text{final} + 10\% \text{homework})$ .

**Statement on Academic Integrity:** McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see [www.mcgill.ca/integrity](http://www.mcgill.ca/integrity) for more information).

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.