

McGill University
Department of Mathematics and Statistics

MATH 381 (Complex variables and transforms)
COURSE OUTLINE – Winter Semester 2015

Instructor: Dr. Pengfei Guan (Burnside Hall 918),
Telephone: 398-3806; Email: guan@math.mcgill.ca
Office hours: Tuesday and Thursday, 1:30am-2:30am, or by appointment.
Course Webpage: <http://www.math.mcgill.ca/guan/courses/m381/m381.html>

Prerequisites: MATH 264

Open only to students in the Faculty of Engineering

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

Outline of topics: Analytic functions, Cauchy-Riemann equations, simple mappings, Cauchy's theorem, Cauchy's integral formula, Taylor and Laurent expansions, residue calculus. Properties of one and two-sided Fourier and Laplace transforms, the complex inversion integral, relation between the Fourier and Laplace transforms, application of transform techniques to the solution of differential equations. The Z-transform and applications to difference equations (if time permits).

Assignments: There will be six assignments (will be posted in the course website), due on following days by 4:00pm: Jan. 19, Feb. 2, 16, March. 2, 16, 30. *NO LATE ASSIGNMENTS WILL BE ACCEPTED.*

Middle Term Tests: There will be two tests in class time on Feb. 16 and March 23.

Final Examination: The final examination will be of 3 hours duration (to be scheduled). There is no "additional work" option and the grade of incomplete will not be given. A supplemental exam will be available for students enrolled in a faculty that subscribes to the concept.

Marking System: Assignments 15%, Tests 25%, and Final Examination 60%. In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Note: 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.

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 for more information).

Assignment Plagiarism: Assignments must be done individually. You may not copy another person's work. Furthermore, you must not give a copy of your work to another student.