

Mathematics 264 (Advanced Calculus for Engineers)

Instructor:

Professor J. A. Toth Lectures T-Th 1:05pm - 2:25pm.

Office: BURN 1221

Telephone: 398-3847

Email: jtoth@math.mcgill.ca

Office Hours: Th 11:30am-12:30pm

personal webpage: <http://www.math.mcgill.ca/toth/>

Web Page: Please check my webpage <http://www.math.mcgill.ca/toth/> for important course information. This information will be updated regularly and should be re-checked periodically by the student. Please note that I will **not** be using myCourses for this course.

Textbook: There are two recommended texts for the two main topics of the course:

1. Adams and Essex, Calculus, Several Variables (Ch. 12, 13.5, 14, 15, 16)
2. Boyce and DiPrima, Ordinary Differential Equations and Boundary Value Problems (Ch. 10 and 11.1-11.3) (Note that chapters 3 and 5 contain material covered in earlier courses which are essential background for the present course.)

Assignments: There will be **no** written assignments in the course. All homeworks are to be completed using **WebWork**. The link is:

http://msr02.math.mcgill.ca/webwork2/MATH264_WINTER2015/

Midterm Exam: There will be an optional two hour midterm examination on Wednesday, February 18 from 6:00-8:00 p.m. The room locations for the examinations are ADAMS AUDITORIUM (Prof. Calleja), MAASS 112 (Prof. Toth).

Syllabus: Review of iterated and multiple integrals. Review of the derivative as a matrix, Implicit Function Theorem. Change of variables in multiple integrals. Differentiating integrals with parameters. Line, surface, and flux integrals. Differential and integral calculus of vector fields including the theorems of Gauss, Green, and Stokes. Introduction to partial differential equations, separation of variables, Sturm-Liouville problems, and Fourier series.

Grading Scheme:

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

This is the only calculation, no additional work will be accepted to raise the final grade. You must do your own individual work in everything submitted for grading in this course. The formal three hour Final Exam may contain a Multiple Choice part, in addition to a Written Part. **Please Note: If you do not write the optional midterm examination, the 90%-10% scheme will be automatically applied to calculate your final grade.**

Tutorials: Problems will be discussed. Tutorials normally begin in the 2nd week of classes and are scheduled by the Engineering Faculty. Please check on Minerva for the tutorial times and locations. There is also a drop-in help center for all math courses in Burnside 911.

Calculators: No calculators or information sheets will be allowed during either the midterm or final examinations.

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 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.