

MATH 248

HONOURS ADVANCED CALCULUS

FALL 2016

GENERAL INFORMATION

Lectures: TR 08:35–09:55, [Strathcona Anatomy and Dentistry Building](#) 1/12

Instructor: Dr. Gantumur Tsogtgerel

Office: [Burnside Hall](#) 1123

Office hours: TR 10:00–11:00, or by appointment

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Phone: (514) 398-2510

Midterm: Mid to end of October, in class

Grading: Written assignment 20%, Midterm 20%, Final 60%

Web: [MyCourses](#) and www.math.mcgill.ca/gantumur/math248

Course number: MATH 248

Course title: Honours advanced calculus

Credit hours: 3

Prerequisite: MATH 133 (Linear Algebra and Geometry) and MATH 222 (Calculus 3) or consent of Department.

Restriction: Intended for Honours Mathematics, Physics and Engineering students. Not open to students who have taken or are taking MATH 314.

REFERENCE BOOKS

- J. E. Marsden and A. J. Tromba, *Vector calculus*. W. H. Freeman
- M. D. Spivak, *Calculus on manifolds*. Westview Press 1971

EXAMS AND HOMEWORK ASSIGNMENTS

There will be a midterm exam and a final exam. We will have 4–5 written homework assignments. All homework assignments will count towards the final grade. Late homework will not be accepted.

CALENDAR DESCRIPTION

Partial derivatives; implicit functions; Jacobians; maxima and minima; Lagrange multipliers. Scalar and vector fields; orthogonal curvilinear coordinates. Multiple integrals; arc length, volume and surface area. Line integrals; Green's theorem; the divergence theorem. Stokes' theorem; irrotational and solenoidal fields; applications.

MCGILL POLICIES AND DISCLAIMERS

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.

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