MATH 248 Honours Vector Calculus - Fall 2023

a. **Course description**: Partial derivatives and differentiation of functions in several variables; Jacobians; maxima and minima; implicit functions. Scalar and vector fields; orthogonal curvilinear coordinates. Multiple integrals; arc length, volume and surface area. Line and surface integrals; irrotational and solenoidal fields; Green's theorem; the divergence theorem. Stokes' theorem; and applications.

b. **Lectures**:

Mondays and Wednesdays from 4h05PM to 5h25PM, Strathcona Anatomy & Dentistry 1/12, first lecture on Wednesday August 30, last lecture on Monday December 4.

c. **Office hours**:

Office hours will be held on Mondays from 1h00PM to 2h00PM in BH 924, or by appointment.

d. **Method of evaluation**:

There will be **4 assignments**, each worth 4% of the final mark, **one midterm**, worth 30% of the final mark, and a **final examination** worth 54% of the final mark. **The date of the midterm is Tuesday October 24, from 6h00PM to 8h00PM (room location TBA)**. Assignments will be given through Crowdmark as per the schedule posted below.

- **Assignment 1**: Posted on Crowdmark on Friday September 15, due for submission on Crowdmark by Friday September 22 at midnight.

- **Assignment 2**: Posted on Crowdmark on Friday October 6, due for submission on Crowdmark by Friday October 13 at midnight.

- **Assignment 3**: Posted on Crowdmark on Friday October 27, due for submission on Crowdmark by Friday November 3 at midnight.

- **Assignment 4**: Posted on Crowdmark on Friday November 10, due for submission on Crowdmark by Friday November 17 at midnight.

e. **Course Instructor**:

Prof. Niky Kamran, niky.kamran@mcgill.ca, www.math.mcgill.ca/nkamran.

f. **Textbook**:

Vector Calculus, sixth edition, by Jerrold E. Marsden and Anthony Tromba, Freeman, 2012.

g. **McGill policy statements**:

1. 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/students/srr/honest/ for more information).
2. 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.
3. Instructors who may adopt the use of text-matching software to verify the originality of students' written course work must register for use of the software with Educational Technologies and must inform the students before the drop/add deadline, in writing, of the use of text-matching software in a course.
4. If you are registered with Student Accessibility & Achievement, and you believe you need special accommodations given the format of this course, please contact the instructor advance.