

**DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
UNIVERSITY OF TORONTO MISSISSAUGA**

**MAT232H5F LEC0101
Calculus of Several Variables
Course Outline - Fall 2014**

Class Location & Time	Tue, 01:00 PM - 03:00 PM DV 2072 Thu, 12:00 PM - 01:00 PM DV 2072
Instructor	Jacopo De Simoi
Office Location	DH 3025
Office Hours	Tue 11:30a - 12:30p Thu 1:30p-2:30p
E-mail Address	jacopods@math.utoronto.ca
Course Web Site	portal.utoronto.ca
Teaching Assistant	Tsang Charles
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Course Description

Differential and integral calculus of several variables: partial differentiation, chain rule, extremal problems, Lagrange multipliers, classification of critical points. Multiple integrals, Green's theorem and related topics. [36L,12T]

Prerequisite: MAT134Y5/135Y5/137Y5

Corequisite: MAT223H5

Exclusion: MAT138Y5, 233H5,235Y1, 237Y1,257Y1,MATB41H3 (SCI)

Distribution Requirement: SCI

Students who lack a pre/co-requisite can be removed at any time unless received explicit waiver from department.

Textbooks and Other Materials

Multivariable Calculus. James Stewart. 7th Edition.

Assessment and Deadlines

Type	Description	Due Date	Weight
Final Exam		TBA	40%
Term Test		2014-10-14	30%
Assignment	best 5 out of 6 assignments, each worth 3%	On-going	15%
Quiz	best 3 out of 4 quizzes, each worth 5%	On-going	15%
Total			100%

More Details for Assessment and Deadlines

Homework is due at the beginning of the tutorial session on the following days:

- HW 1: Sep 15
- HW 2: Sep 29
- HW 3: Oct 20
- HW 4: Nov 3
- HW 5: Nov 17
- HW 6: Nov 24

There will be four 20-minute quizzes at the beginning of the tutorial session on the following days:

- Quiz A: Sep 22
- Quiz B: Oct 6
- Quiz C: Oct 27
- Quiz D: Nov 10

Penalties for Lateness

Late assignments will not be accepted except for justified medical reasons or other serious circumstances beyond the student's control.

Procedures and Rules

Missed Term Work

Extensions for homework deadlines will be considered only for medical reasons or other serious circumstances beyond the student's control. There will be no makeup tests or quizzes. With adequate documentation, missed tests can be compensated for by increasing the weight of the final exam. Special consideration for late assignments or missed tests must be submitted via e-mail or in person within a week of the original scheduled date. Justifiable absences must be declared on ROSI. Undocumented absences will result in zero credit.

Missed Final Exam

Students who cannot write a final examination due to illness or other serious causes must file an [online petition](#) **within 72 hours of the missed examination**. Original supporting documentation must also be submitted to the Office of the Registrar **within 72 hours of the missed exam**. Late petitions will **NOT** be considered. If illness is cited as the reason for a deferred exam request, a U of T Medical Certificate must show that you were **examined and diagnosed at the time of illness and on the date of the exam, or by the day after at the latest**. Students must also record their absence on ROSI on the day of the missed exam or by the day after at the latest. Upon approval of a deferred exam request, a non-refundable fee of \$70 is required for each examination approved.

Academic Integrity

Honesty and fairness are fundamental to the University of Toronto's mission. Plagiarism is a form of academic fraud and is treated very seriously. The work that you submit must be your own and cannot contain anyone else's work or ideas without proper attribution. You are expected to read the handout How not to plagiarize (<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>) and to be familiar with the Code of behaviour on academic matters, which is linked from the UTM calendar under the link Codes and policies.

Final Exam Information

Duration: 3 hours
Aids Permitted: None

Additional Information

E-mail policy

E-mails must be sent from a utoronto.ca address in order to be considered. They must contain MAT232 in the subject and specify your full name and id number in the email body. E-mails not complying with the above policy will be silently ignored.

Topics by Week (tentative schedule):

W1 Parametric curves, tangent lines, length of a curve (10.1 - 10.2)

W2 Polar coordinates, polar curves (10.3)

W3 Areas and lengths in polar coordinates, xyz -plane (10.4, 12.1)

W4 Dot product and cross product, linear independence, basis (12.2 - 12.4)

W5 Equations of lines and planes; cylinders and quadric surfaces (12.5 - 12.6)

W6 Vector functions, derivatives and integrals of vector functions (13.1 - 13.2)

W7 Functions of several variables, level sets, curves and surfaces (14.1 - 14.2)

W8 Partial derivatives (14.2 - 14.3)

W9 Tangent planes and linear approximation; the chain rule (14.4 - 14.5)

W10 Gradient and directional derivative (14.6)

W11 Critical points, minimum and maximum, Lagrange multipliers (14.7-14.8)

W12 Average value of a function, double integrals, Fubini's theorem (15.1 - 15.3)

Last Date to drop course from Academic Record and GPA is November 3, 2014.