

Faculty of Science
DEPARTMENT OF MATHEMATICS AND STATISTICS
Course Information Sheet

Course:	MATH 331	Winter 2007
Lecture/Time/Session	L01 TR 12:30-13:45	TRB 101
Instructor/e-mail:	Elena Braverman	maelena@math.ucalgary.ca
Tutorial		
W 12:00 MS 371	Marton Naszodi	nmarton@math.ucalgary.ca
M 14:00 TRB 102	Marton Naszodi	nmarton@math.ucalgary.ca
Office/Phone/Hours:	MTW 10:00-11:30 MS 444,	
Prerequisites:	MATH 253 or 263 or AMAT 219 and MATH 221 or 221	
Co-requisites:	None	
Course's homepage:	www.math.ucalgary.ca/~maelena/331.html	

1. **The university policy on grading** and related matters is described in the current University Calendar, *Academic Standings*. In determining the overall grade in the course, the following weights will be used:

Quizzes	[best 4 of 5]	30 %
Mid-term exam	[one]	20 %
Final exam		50 %

A passing grade on the final exam is necessary to pass the course. There will be a final examination **scheduled by the Registrar's Office**. The use of aids such as open book, etc. is not permitted. **Calculators are allowed on quizzes, the midterm test and the final exam.**

2. **The mid-term** will be in class on **March 8, 2007**. There will be five quizzes of approximately 35 minutes durations which will be held in labs: **January 22 or 24, February 5 or 7, February 26 or 28, March 19 or 21, April 2 or 4**. The best four marks will be used in the assessment.
3. **Textbook:** R. Adams: Multivariable Calculus or Complete Course (recommended).
4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined in the current University Calendar, faculty of Science, section 6A. It is the student's responsibility to familiarize herself/himself with these regulations.
5. **Note:** The Faculty of Science policy on pre- and co-requisite checking is outlined in the current University Calendar (see www.ucalgary.ca/pubs/calendar), Faculty of Science, section 5C. It is students' responsibility to ensure that they have the prerequisites for the course and if they do not, they will be withdrawn from the course without notice. There are no co-requisites to this course.
6. **Fee policy:** After the last day to drop/add courses (January 19, Friday), there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
7. **Academic Accommodations:** It is student's responsibility to request academic accommodations. A student with a documented disability who may require academic accommodation must register with the Disability Resource Centre to be eligible for formal academic accommodation. DRC registered students are required to discuss their needs with the instructor no later than fourteen (14) days after the start of the course.

8. **Academic misconduct** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please see: <http://www.ucalgary.ca/honesty>

MATHEMATICS 331

“MULTIVARIATE CALCULUS”

Calendar Description: H(3-1T)

Systems of ordinary differential equations. Calculus of functions of several variables. Introduction to vector analysis, theorems of Green, Gauss and Stokes.

Prerequisites: Mathematics 253 or 263 or Applied Mathematics 219 and either 221 or both 211 and 013.

Syllabus

Topics	Sections and problems	Dates
Systems of linear differential equations		9.01-16.01
Functions of several variables	12.1 (1-27,37,39,42)	18.01
Limits and continuity	12.2 (1-15)	18.01-23.01
Partial derivatives	12.3 (1-27), 12.4 (1-5,9,17)	23.01-25.01
The Chain Rule	12.5 (1-11, 15-19)	29.01
Differentiability, linear approximations,	12.6 (1-5)	30.01-1.02
Gradient, directional derivatives	12.7 (1-19)	6.02-8.02
Implicit functions	12.8 (1-15,23)	8.02-13.02
Extreme values	13.1 (1-15), 13.2 (1-9)	13.02-27.02
Double integrals	14.1 (13-19), 14.2 (1-19)	27.02-1.03
Change of variables	14.4 (1-23)	6.03,13.03
Triple integrals	14.5 (1-5), 14.6 (25-29)	13.03-15.03
Conservative vector fields	15.2 (1-5)	14.03
Line integrals	15.3 (1-7), 15.4 (1-9)	20.03
Surface integrals	15.5 (3-7,13,15), 15.6 (1,5)	20.03-22.03
Curl and divergence	16.1 (1-7)	27.03
Green's Theorem	16.3 (1-5)	29.03-3.04
The Divergence Theorem	16.4 (1-7)	3.04-5.04
Stokes's Theorem	16.5 (1-5)	10.04-12.04

There are no lectures on **February 23-25** and no tutorial on **January 8-10**.