

Faculty of Science  
DEPARTMENT OF MATHEMATICS AND STATISTICS

Course Information Sheet

<b>Course:</b>	MATH 253	Fall 2004
<b>Lecture/Time/Session</b>	L01 M W F	10:00 ICT 121
<b>Instructor/e-mail:</b>	Elena Braverman	maelena@math.ucalgary.ca
Lab B01 M 13:00 MS 371	Andrew Taylor	ataylor@math.ucalgary.ca
Lab B02 M 13:00 MS 325	Eric Lenza	eric@math.ucalgary.ca
Lab B03 M 11:00 MS 371	Hua Li	lih@math.ucalgary.ca
Lab B04 M 14:00 MS 325	Kjell Wooding	kjell@math.ucalgary.ca
<b>Office/Phone/Hours:</b>	MS 444, 220-3956	MWF 11-11:50 T 10-11, 14-15
<b>Course's homepage:</b>	<a href="http://www.math.ucalgary.ca/~maelena/253.html">www.math.ucalgary.ca/~maelena/253.html</a>	
<b>Prerequisites:</b>	MATH 249 or MATH 251 or AMAT 217	

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 two-hour final examination **scheduled by the Registrar's Office**. The use of aids such as open book, etc. is not permitted. **Calculators are permitted on quizzes, the midterm test and the final exam.**

2. **The mid-term test** will be in class on **October 29**, 2004. There will be five quizzes of approximately 30 minutes durations which will be held in labs: **September 20 or 21, October 4 or 5, October 18 or 19, November 15 or 16, November 29 or 30**. The best four marks will be used in the assessment.
3. **Textbook:** Robert A. Adams: Single-Variable Calculus (or Complete Course) - Any edition.
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. **Out-of-class activities:** There will be no out-of-class scheduled activities. Regularly scheduled classes have precedence over any out-of-class-time-activity.
6. **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](http://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.
7. **Fee policy:** After the last day to drop/add courses (September 21, Tuesday), there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
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 read the sections of current University Calendar.

# MATHEMATICS 253

## “CALCULUS II”

**Calendar Description: H(3-1T-1)**

Exponential and trigonometric functions and their inverses, hyperbolic functions. Methods of integration, improper integrals. Separable differential equations, first and second order linear differential equations, applications.

**Prerequisite:** Mathematics 249 or 251 or Applied Mathematics 217.

**Note:** Credit for both Mathematics 253 and either Applied Mathematics 209 or 219 will not be allowed.

**Note:** This course is a prerequisite for many 300-level courses in Pure Mathematics, Applied Mathematics, Statistics and Actuarial Science.

### Syllabus

Week	Date	Topics	Section, problems
1	8.09-10.09	Inverse functions, exponential and logarithmic functions	3.1 (1-11,13-21,25,27,31) 3.2(1-17,27,29),3.3(19-45,51)
2	13.09-17.09	Inverse trigonometric functions, hyperbolic functions	A24-A33, 3.5 (1-27) 3.6 (2,7)
3	20.09-24.09	Integration by parts Integration by substitution Inverse trigonometric substitution	6.1 (1-25) 5.6 (1-9,13,15,19-43,47) 6.2 (1-13,17,19,23,25,29,35,43)
4	27.09-1.10	Partial fractions Numerical integration	6.3 (1-25) 6.6 (1,3,9,11)
5	4.10-8.10	Improper integrals Areas, volumes	6.5 (1-23,31-37) 5.7 (1-21),7.1 (1-11)
6	13.10-15.10	Applications of integration	7.3(1-11),7.4 (1,3,5,9), 7.5(1,3,5)
7	18.10-22.10	Taylor and Maclaurin polynomials	4.8 (1-23)
8	25.10-1.11	Taylor polynomials, midterm	
9	3.11-10.11	Differential equations	9.1 (1-5)
10	15.11-18.11	Separable equations Linear equations	19.1(11,12), 19.2 (1-21) 19.4 (1-13)
11	22.11-26.11	Second order homogeneous equations	19.7 (1-17,19-23)
12	29.11-3.12	Linear nonhomogeneous equations	19.8 (1-11)
13	6.12-9.12	Review	

**No classes October 11, November 12.**

In addition to the instruction provided by the tutorial instructor there is a continuous tutorial (beginning September 13) available where students may obtain individual help with questions about the course material and exercise problems:

Mondays through Thursdays    11-15:00            Fridays    11-14:00  
Room            MS 365

The Society for Calgary Undergraduate Mathematics (SCUM) sells exam packages, runs final reviews (SCUM's office is in MS337A, e-mail [scum@math.ucalgary.ca](mailto:scum@math.ucalgary.ca), phone 220 3938, webpage [www.math.ucalgary.ca/~scum](http://www.math.ucalgary.ca/~scum))