

Faculty of Science  
DEPARTMENT OF MATHEMATICS AND STATISTICS  
Course Information Sheet

**Course:** MATH 253/263 Winter 2004  
**Lecture/Time/Session** L07/09 T R 9:30 ST 145 (L08 T R 12:30 ST 145)  
**Instructor/e-mail:** Igor Nikolaev nikolaev@math.ucalgary.ca  
**Office/Phone/Hours:** MS 442, 220-5691 T R 11:00-12:00  
**Prerequisites:** MATH 249 or MATH 251 or AMAT 217

- The university policy on grading** and related matters is described on pages 41-42 of the 2003-2004 Calendar. 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.**
- The mid-term** will be in class on **February 27**, 2004. There will be five quizzes of approximately 30 minutes durations which will be held in labs: **January 26 or 27, February 9 or 10, March 9 or 10, March 22 or 23, April 5 or 6**. The best four marks will be used in the assessment.
- Textbook:** Robert A. Adams: Single Variable, 5-th edition
- Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined on page 199, of the 2003-2004 Calendar. It is the student's responsibility to familiarize herself/himself with these regulations.
- 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.
- Note:** The Faculty of Science policy on pre- and co-requisite checking is outlined on page 210 of the 2002-2003 Calendar. 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is students' responsibility to ensure that they have the prerequisites for the course and if they do not, they will be withdrawn from the course without notice.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.
- Fee policy:** After the last day to drop/add courses (January 23, Friday), there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
- 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 the 2003-2004 University Calendar under the heading "Student Misconduct", pages 53-56.

**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	Events
1	12.01-16.01	Inverse functions, exponential and logarithmic functions Review of integration	3.1 3.2-3.3 5.3,5.5	No tutorials
2	19.01-23.01	Inverse trigonometric functions, hyperbolic functions	3.5 3.6	
3	26.01-30.01	Integration by parts Trigonometric integrals Inverse trigonometric substitution	6.1 6.2	Quiz 1
4	2.09-6.09	Partial fractions Numerical integration	6.3 6.4	
5	9.02-13.02	Improper integrals Areas, volumes	6.5 5.7	Quiz 2
6	23.02-27.02	Applications of integration	7.1,7.2,7.3	MID-TERM
7	1.03-5.03	Taylor and Maclaurin polynomials	9.6,9.7	
8	8.03-12.03	Taylor polynomials	9.8	Quiz 3
9	15.03-19.03	Differential equations Linear equations	7.9	
10	22.03-26.03	First order ODE	7.9	Quiz 4
11	29.03-2.04	Second order equations	3.7	
12	5.04-7.04	Linear nonhomogeneous equations	3.7	Quiz 5
13	12.04-16.04	Second order equations, review		

In addition to the instruction provided by the tutorial instructor there is a continuous tutorial (beginning January 15) available where students may obtain individual help with questions about the course material and exercise problems:

Mondays through Fridays    11-15:00                      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))