

Faculty of Science
DEPARTMENT OF MATHEMATICS AND STATISTICS

Course Information Sheet

Course:	MATH 311	Fall 2004
Lecture/Time/Session	L01 M W F	12:00 ENE 241
Instructor/e-mail:	Elena Braverman	maelena@math.ucalgary.ca
Lab T01 T 9:00 MS 317	Elena Braverman	
Lab T02 M 9:00 MS 427	Marton Naszodi	nmarton@math.ucalgary.ca
Lab T03 M 13:00 MS 317	Elena Braverman	
Office/Phone/Hours:	MS 444, 220-3956	MWF 11-11:50 T 10-11, 14-15
Course's homepage:	www.math.ucalgary.ca/~maelena/311.html	
Prerequisites:	MATH 211 or MATH 221	

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 three-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 **November 5**, 2004. There will be five quizzes of approximately 35 minutes durations which will be held in labs: **September 21, October 5, October 19, November 16, November 30**. The best four marks will be used in the assessment.
3. **Textbook:** W. Keith Nicholson, Elementary Linear Algebra, Second 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), 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is students' responsibility to ensure that they have the prerequisites for the course and if they do not, they will be withdrawn from the course without notice.

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 311 “LINEAR METHODS II”

Calendar Description: H(3-1T)

Vector spaces and subspaces. Linear independence. Matrix representation of linear transformations. Eigenvalues and eigenfunctions. Quadratic forms. Inner products. Gram-Schmidt orthogonalization.

Prerequisite: Mathematics 211 or 221.

Syllabus

Week	Date	Topics	Section, problems
1	8.09-13.09	Spaces and subspaces, spanning sets	4.1 (1-9,13-15,18-20)
2	13.09-17.09	Linear independence	4.2 (1-10)
3	20.09-24.09	Dimension	4.3 (1-11,16-18,23)
4	24.09-27.09	Rank	4.4 (1-12,16)
5	27.09.10-8.10	Linear transformations	4.9.1-4.9.4 (1-7,12-15)
6	13.10-15.10	Vector spaces: basic properties	5.1 (1-11,22-24)
7	18.10-22.10	Independence and dimension	5.2 (1-5,10-14,18,20,24-25,28)
8	25.10-27.10	Linear transformations	5.3 (1-6,12-14,16)
9	29.10-10.11	Isomorphisms and matrices, midterm	5.4 (1-2,6-7,13-16)
10	15.11-19.11	Orthogonality, Gram-Schmidt algorithm	4.5 (1-7,9-15)
11	22.11-24.11	Projections and approximation	4.6 (1-12)
12	26.11-1.12	Orthogonal diagonalization	4.7 (1-9,16,19)
13	3.12-9.12	Quadratic forms, review	4.8 (1,2,4)

No classes October 11, November 12, no tutorial November 9.

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, phone 220 3938, webpage www.math.ucalgary.ca/~scum)