



Faculty of Science
DEPARTMENT OF MATHEMATICS and STATISTICS
Course Information Sheet

1. Course: MATH 221 – Linear Algebra for Scientists & Engineers WINTER 2004
Lecture/Time/Session: L21 TR 9:30 (Duration: 75 minutes) Room: ST 141
Instructor(s): Dr. J. Sniatycki
Office: MS 420 Phone: 220-3957 Office Hours: by appointment
Prerequisite(s): A grade of 70% or higher in Mathematics 30 or Pure Mathematics 30.
Co-requisite(s): None

Note: The Faculty of Science policy on pre- or co-requisite checking is outlined on page 198, of the 2003-2004 Calendar. It is a student's responsibility to ensure that they have the pre- and/or co-requisites for the course, and if they do not they will be withdrawn from the course without further notice.

3. **Fee Policy:** After the last day to drop/add courses, there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
4. **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:

Mid-term Test(s)	[1]	20%
Quiz(zes)	[Best 5 of 6]	30%
Final Exam		50%

A passing grade on any particular component of the course is essential to passing the course as a whole. There will be a final examination scheduled by the Registrar's Office. The use of aids such as open book, etc. is not permitted.

5. **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.
6. **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.
7. **Dates and times of class exercises held outside of class hours** (evening test, Saturday laboratory examinations, week end field trips, etc.): There are no out-of-class-time activities.

SCUM: The Society for Calgary Undergraduate Mathematics is located in MS 337A. They sell exam packages, run final reviews, and can often assist with problems. The office is open from 10am-3pm Monday-Friday, and you are welcome to drop by. We look forward to meeting you!

MATH 221 L21 Winter 2004

Instructor: Jędrzej Śniatycki, MS 420. Office hours: by appointment.

Text: Keith Nicholson, Elementary Linear Algebra, McGraw-Hill, First or Second Edition.

Quizzes: There will be 6 quizzes given in labs. Credit of 30% will be given for 5 best quizzes.

Recommended Problems and Quizzes

Recommended problems, taken from the exercise sections of the text, should be solved by students before the following lab. Students are encouraged to do all problems from the relevant section of the text. During each lab, the Instructor will answer questions about recommended problems, solve some problems on the blackboard and administers the quizz, if one is scheduled.

Date	Labs	Recommended Problems
Jan. 12/13	No Labs	
Jan. 19/20		1.2: 1, 3, 4, 6, 7, 8, 9, 12, 13, 10, 14,
Jan. 26/27	Quiz 1	1.3: 1, 2, 3, 4, 6, 7, 8.
Feb. 02/03		{ 1.1: 4, 5, 6, 7, 8, } { 1.4: 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 15, 19, 20, 22, 24.}
Feb. 09/10	Quiz 2	1.5: 1, 2, 4, 5, 6, 7, 8, 9, 12, 13, 15, 16, 18, 20, 22, 23 24.
Feb. 16/17		Reading Week
Feb. 23/24		2.1: 1, 3, 5, 8, 11, 12, 14, 15, 2.2: 4, 5, 6, 7, 8, 10, 11, 12, 15.
Mar. 01/02	Quiz 3	2.3: 1, 2, 3, 4, 5, 6,
Mar. 08/09		2.3: 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20.
Mar. 15/16	Quiz 4	2.5: 1, 2, 3, 4, 5, 7, 8.
Mar. 22/23		2.5: 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23 24, 25, 26.
Mar. 29/30	Quiz 5	3.1: 1, 2, 3, 4, 5, 10.
Apr. 05/06		3.2: 1, 2, 3, 4, 7, 8, 9, 10, 16, 3.3: 2, 3, 4, 6, 7, 8, 9, 10.
Apr. 12/13	Quiz 6	

Detailed Lecture Schedule

Day	Date	Topic	Chapter
Tuesday	Jan. 13	Linear equations	1.2.1-1.2.2
Thursday	Jan. 15	Gaussian elimination	1.2.3
Tuesday	Jan. 20	Rank	1.2.4
Thursday	Jan. 22	Homogeneous systems	1.3
Tuesday	Jan. 27	Matrix algebra	1.1, 1.4.1-1.4.2
Thursday	Jan. 29	Matrix algebra	1.4.3-1.4.4
Tuesday	Feb. 03	Matrix inverses	1.5.1-1.5.2
Thursday	Feb. 05	Matrix inverses	1.5.3-1.5.5
Tuesday	Feb. 10	Determinants	2.1.1-2.1.2
Thursday	Feb. 12	Determinants	2.2.1-2.2.3
Tuesday	Feb. 17	Reading Week	No classes
Thursday	Feb. 19	Reading Week	No classes
Tuesday	Feb. 24	Review	
Thursday	Feb. 26	MIDTERM	

Tuesday	Mar. 02	Eigenvectors	2.3.2
Thursday	Mar. 04	Diagonalization	2.3.3
Tuesday	Mar. 09	Complex numbers	2.5.1-2.5.2
Thursday	Mar. 11	Complex algebra	2.5.3-2.5.5
Tuesday	Mar. 16	Polar form	2.5.6
Thursday	Mar. 18	Geometric vectors	3.1
Tuesday	Mar. 23	Matrix form	3.1
Thursday	Mar. 25	Dot product	3.2.1-3.2.3
Tuesday	Mar. 30	Lines and planes	3.3.1-3.3.3
Thursday	Apr. 01	Cross product	{3.4 in First Edition} {3.3.4 and 3.5 in Second Ed.}
Tuesday	Apr. 06	Transformations	{3.5.1-3.5.5 in First Edition} {3.4.1-3.4.5 in Second Ed.}
Thursday	Apr. 08	Transformations	{3.5.1-3.5.5 in First Edition} {3.4.1-3.4.5 in Second Ed.}
Tuesday	Apr. 13	Transformations	{3.5.1-3.5.5 in First Edition} {3.4.1-3.4.5 in Second Ed.}
Thursday	Apr. 15	Review	