

COURSE INFORMATION SHEET
WINTER 2008

- Course:** MATHEMATICS 221 -- Linear Algebra for Science & Engineering
Lecture/Time: L03 TR 9:30-10:45 ST 141
Instructor: Csaba D. Tóth
Office/Phone/Email: MS 432, 220-3950, cdtoth@math.ucalgary.ca
- Prerequisites:** A grade of 70% or higher in Pure Math 30 or equivalent.
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 the students' responsibility to ensure that they have the pre- and co-requisites for the course, and if they do not they will be withdrawn from the course without notice.**
- 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.
- Academic Accommodations:** It is the 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 this course.
- 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	[5]	20%
Midterm Tests	[2]	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.
- 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.
- 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 current University Calendar. See: <http://www.ucalgary.ca/honesty/>
- Dates and times of class exercises held outside of class hours (evening tests, Saturday laboratory examinations, weekend field trips, etc.):**
****THERE WILL BE NO OUT-OF-CLASS-TIME ACTIVITY.****
REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME ACTIVITY. If you have a conflict with this out of class time activity, please inform your instructor at least one week in advance of the activity so that other arrangements may be made for you.
- Challenge Examination.** Students who feel that they have already mastered the course material, may take a challenge examination (see <http://math.ucalgary.ca/first-year-mathematics-challenge-examinations>) during the second week of classes. This option is not available to students who have previously attempted the course, or an equivalent course, including withdrawals. It is necessary to apply to write the Challenge Examination. Application forms and study guides are available from the Mathematics and Statistics Department Office (MS 476). Applications for the 2008 Winter term should be submitted by January 17, 2008 (noon) to MS 476.
- Additional course information, Syllabus, Schedule of Quizzes and Midterm Tests, Hand-outs, and Practice tests will be posted on Blackboard (log in to <http://blackboard.ucalgary.ca/>).

Syllabus: Lectures

Date	Topic	Reading
1 1/15	Systems of Linear Equations	§1.1-1.2
2 1/17	Gaussian Elimination	§1.2
3 1/22	Rank and Homogeneous Equations	§1.3
4 1/24	Applications and Matrix Addition	§1.4-1.6 & §2.1
5 1/29	Matrix Multiplication	§2.2
6 1/31	Matrix Inverses	§2.3
7 2/5	Elementary Matrices	§2.4
8 2/7	Matrix Transformations	§2.5
9 2/12	1st Midterm Test	Closed books
10 2/14	LU-Factorization	§2.6
11 2/26	Applications in Markov Chains	§2.7-2.8
12 2/28	Determinants and Cofactor Expansion	§3.1
13 3/4	Determinants of products and inverses	§3.2
14 3/6	Cramer's rule, Eigenvectors and Eigenvalues	§3.3
15 3/11	Diagonalization	§3.3
16 3/13	Applications in Dynamic Models	§3.4-3.5
17 3/18	Complex Numbers	Appendix A
18 3/20	Roots of polynomials	Appendix A
19 3/25	2nd Midterm Test	Closed books
20 3/27	Vector Geometry	§4.1
21 4/1	Lines and Planes in 3-space	§4.2
22 4/2	The Cross Product	§4.3
23 4/8	Area, and Volume Computation	§4.3
24 4/10	Matrix transformations in 3-space	§4.4
25 4/15	Homogeneous coordinates	§4.5
26 4/17	Review	§1.1-4.5 & A

Tutorial and Quiz Schedule

Week	Event
1	No Labs on 1/14 and 1/15
2	1 st Labs: 1/21 and 1/22
3	1 st Quiz 1/28 and 1/29
4	2 nd Quiz 2/3 and 2/4
5	
6	
7	
8	3 rd Quiz 3/10 and 3/11
9	4 th Quiz 3/17 and 3/18
10	
11	
12	5 th Quiz 4/7 and 4/8
13	