

SYLLABUS FOR MATH 221, SECTION 03
LINEAR ALGEBRA FOR SCIENTISTS AND ENGINEERS
FALL 2007, UNIVERSITY OF CALGARY

Lectures: TR 9:3–10:45 in ST141

Instructor: Csaba D. Tóth

Office: MS432

Office hours: T 15-16

Email: cdtoth@math.ucalgary.ca

Teaching Assistant: Kevin Saff

Email: ksaff@math.ucalgary.ca

Tutorials:

LAB 9: W 10:00-10:50 in ST064, instructor: Csaba D. Tóth

LAB 10: W 10:00-10:50 in ENF334, instructor: Kevin Saff

LAB 11: W 11:00-11:50 in MS371, instructor: Csaba D. Tóth

LAB 12: W 11:00-11:50 in MS325, instructor: Kevin Saff

Grades will be based on:

Final exam 50%, Midterm exam 25%, Quizzes 25%.

Quizzes. There will be 5 quizzes on Wednesdays (see the schedule of Quizzes on the next page). Each Quiz will take 30 minutes of the tutorial, and will be graded by the next Wednesday. The grades of only your best 4 quizzes will count towards your final grade.

Exams. There will be a 75-minute *midterm exam* in class on October 23 (mark your calendar!). A 3-hour *final exam* will be scheduled by the Registrar in finals week.

Textbook Keith Nicholson, *Linear Algebra with applications*, 5th edition, McGraw-Hill, 2006, Toronto. ISBN: 007092277-2.

Continuous Tutorial. If you have any questions during the semester, you can drop by to the continuous tutorial every weekday:

MWF 13-15 in MS569

TR 12-15 in MS569.

Challenge Exam. If you feel that you already know pretty well all the material covered in Math 221 and you would like to take other maths courses instead, then sign up for the challenge exam by noon, September 13, Thursday in the Undergraduate Office (MS476). The 3-hour challenge exam will take place on September 18, Tuesday at 19-22pm.

Syllabus: Lectures

	Date	Topic	Reading
1	9/11 T	Systems of Linear Equations	§1.1-1.2
2	9/13 R	Gaussian Elimination	§1.2
3	9/18 T	Homogeneous Equations	§1.3
4	9/20 R	Applications in Physics & Chemistry	§1.4–1.6
5	9/25 T	Matrix Addition and Multiplication	§2.1-2.2
6	9/27 R	Matrix Inverses	§2.3
7	10/2 T	Elementary Matrices	§2.4
8	10/4 R	Matrix Transformations	§2.5
9	10/9 T	LU-Factorization	§2.6
10	10/11 R	Applications in Markov Chains	§2.7-2.8
11	10/16 T	Cofactor Expansion	§. 3.1
12	10/18 R	review	§1.1–3.1
13	10/23 T	Midterm Exam	Closed books
14	10/25 R	Determinants	§3.2
15	10/30 T	Diagonalization	§3.3
16	11/1 R	Eigenvalues	§3.3
17	11/6 T	Applications in Dynamic Models	§3.4–3.5
18	11/8 R	Complex Numbers	Appendix A
19	11/15 R	Vectors and Lines	§4.1
20	11/20 T	Vector Geometry	§4.1
21	11/22 R	Projections and Planes	§4.2
22	11/27 T	The Cross Product	§4.3
23	11/29 R	Rotations in 3-space	§4.4
24	12/4 T	Applications in Computer Graphics	§4.5
25	12/6 R	review	§1.1-4.5 & A

Tutorial and Quiz Schedul

	Date	Comment
	9/12 W	no class today
1	9/19 W	1st tutorial
2	9/26 W	1st Quiz
3	10/3 W	
4	10/10 W	2nd Quiz
5	10/17 W	
6	10/24 W	
7	10/31 W	
8	11/7 W	3rd Quiz
9	11/14 W	
10	11/21 W	4th Quiz
11	11/28 W	
12	12/5 W	5th Quiz