HOME PAGE OF MATH 2210Q, SECTION 005:

Applied Linear Algebra

Spring 2009

Sarah Glaz

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(click on link and remove end x)

Office: MSB 202
Phone: (860) 486 9153
Office Hours: T, Th 1:00-2:00 and by appointment
Open Door Policy: You are welcome to drop by to discuss any aspect of the course, anytime, on the days I am on campus-- Tuesdays and Thursdays.

Class Meeting Times/Place

Tuesday, Thursday 2:00-3:15. Classroom MSB 311

Textbook

Linear Algebra and its Applications, by David C. Lay, 3rd edition (Update)

Course Description

This course provides an introduction to the concepts and techniques of Linear Algebra. This includes the study of matrices and their relation to linear equations, linear transformations, vector spaces, eigenvalues and eigenvectors, and orthogonality.

Homework

Homework will be assigned after every section, discussed in class on Tuesdays, collected on Thursdays, and returned the following class. Solutions to selected exercises will be handed out at that time. For that reason, late homework will not usually be accepted. Homework assignments consist of individual practice exercises from the textbook (see Syllabus) and occasional group projects highlighting applications. You are encouraged to work with other students in this class on all your homework assignments, but must write up and hand in your individual solution. Group projects, one report per group, will be graded for exam points. Textbook homework assignments will not be graded but will carry exam points (this will be explained in more details in class).

Calculator Policy

You will need to show your work on exams and homework assignments, but may use calculators, in all cases, to double check your answers and save time on routine calculations. The recommended graphic Calculator is TI83 (best value for the money) but others will do as well.

Exam Schedule and Guidelines

There will be three in-class exams during the semester and a Final exam. None is strictly cumulative, but

there will be overlap of material between the exams. NO MAKE-UP EXAMS unless there is a very serious emergency for which you provide proof. Quizzes will be given only if necessary.

Exam Schedule	**Exam Guidelines** (a link to each exam guidelines will appear in the week before each exam)
Exam 1: Tuesday, February 17, in class	Exam 1 Guidelines: Materials and Review Suggestions
Exam 2: Thursday, March 19, in class	Exam 2 Guidelines: Materials and Review Suggestions
Exam 3: Thursday, April 16, in class	Exam 3 Guidelines: Materials and Review Suggestions
Final Exam: Saturday, May 9, 1:00-3:00, MSB 311	Final Exam Guidelines: Materials and Review Suggestions

For help with location of the Final Exam Building click on The Campus Map.
UConn Final Exam Policy.

Grading Policy

Homework, quizzes, and group projects: 7% to 10%. Each Exam (including the Final Exam) is of equal weight, that is, about 22%.

Extra Help: The Q Center and Textbook Website

I encourage you to come to my office for help during office hours, and I will be happy to find other times when we can meet if my office hours schedule does not fit your schedule. However, there may be times when you need help and I am not available. A good source of extra help is the UConn Q Center. Check their website for hours and locations. In addition to drop-in free tutoring, the Q Center also maintains a list of private tutors. An online source of additional practice exercises, review sheets, and exam samples with solutions, is the **Student Resources** located on your textbook website: http://wps.aw.com/aw_lay_linearalg_updated_3/ .

Syllabus, Homework Assignments, and Course Handouts

The actual pace of the course may be slightly different than listed in the Syllabus below. It will depend on the students' response to the material. Homework assignments will be given in class after every section. In addition to the section homework listed below, there may be a number of group projects highlighting applications of the material. The links to the handouts for each section appearing in **Sections: Topics and Section Handouts** column will be updated on a weekly basis as we progress through the course.

Week	**Sections: Topic with Link to Section Handout**	**Homework Assignments**
Week 1	1.1. System of Linear Equations 1.2. Row Reduction and Echelon Forms	Math-autobiography page 11-12: 1,8,13,17,22,23,24 page 25-26: 1,3,7,14,19,21,22 Group-Work: Gaussian Elimination
Week 2	1.3. Vector Equations 1.4. The Matrix Equation $A\mathbf{x} = \mathbf{b}$	page 37-40: 1,3,6,9,12,14,17,21 page 47-49: 1,4,7,9,13,22,23,25 Group-Work: Linear Combinations

Week 3	1.5. Solutions Sets of a Linear Equation 1.7. Linear Independence	page 55-57: 2,5,11 page 71-72: 1,5,8,9,15,20,22,33,34 Group-Work: Linear Independence and Dependence
Week 4	1.8. Introduction to Linear Transformations 1.9. The Matrix of a Linear Transformation	page 79-81: 1,8,9,13,17,31 page 90-91: 1,2,15,20
Week 5	2.1. Matrix Algebra: Operations **Exam 1: Tuesday, February 17**	page 116-117: 2,5,7,10,15,27
Week 6	2.2. Matrix Algebra: Inverses 2.3. Characterizations of Invertible Matrices	page 126-127: 3,6,13,18,31 page 132-133: 3,5,8,13,15 Group-Work: Transformations and Matrix Inverses
Week 7	3.1.-3.2. Determinants: Introduction and Properties	page 190-191: 4,11,37,38 page 199-200: 16,17,20,25,29,31,32,40 Group-Work: Determinants and Matrix Invertibility
Break	**Spring Break: March 8-14**	**Relax and have fun!**
Week 8	4.1. Vector Spaces and Subspaces **Exam 2: Thursday, March 19**	page 223-224: 1,7,11,13,15,31
Week 9	4.2. Null Spaces, Column Spaces, Linear Transformations 4.3. Linear Independent Sets, Bases	page 234-235: 3,11,14,17,21,23,25 page 243-244: 3,4,9,11,13,15,23,24 Group-Work: Null A, Col A, and Bases
Week 10	4.5. Dimension of Vector Spaces 4.6. Rank	page 260-262: 1,9,11,17,19 page 269-270: 2,5,7,10,13,27 Group-Work: Rank A
Week 11	5.1. Eigenvalues and Eigenvectors 5.2. The Characteristic Equation	page 308-310: 2,3,7,13,17,19,23 page 317-318: 2,5,12,15,20,21 Group-Work: Eigenvalues and Eigenspaces
Week 12	5.3. Diagonalization **Exam 3: Thursday, April 16**	page 325-327: 1,4,5,9,11,23,24,31
Week 13	6.1. Inner Product and Orthogonality 6.2. Orthogonal Sets	page 382-384: 5,10,13,15,17,20,25 page 392-393: 1,2,9,11,14,20,26,27 Group-Work: Orthogonality
Week 14	6.4. Gram-Schmidt Process	page 407-409: 3,7,9 Group-Work: Gram-Schmidt
Week of Finals: 5/4-5/9	**Final Exam: Saturday, May 9, 1:00-3:00, MSB 311**	**Office Hours during Final Exams' week: Friday, May 8, 1:30-2:30, and Saturday, May 9, 12:00-1:00**

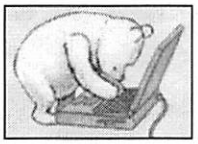
Academic Integrity

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgment of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned. Academic

misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, and examinations); any attempt to influence improperly (e.g. bribery, threats)any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research; presenting, as one's own,the ideas or words of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved. A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code.

Student Support Services

- Counseling and Mental Health Services 486-4705 (after hours, use 486-3427)
- Career Services 486-3013
- Alcohol and Other Drug Services 486-9431
- Dean of Students Office 486-3426
- Center for Students with Disabilities 486-2020 (voice), 486-2077 (TDD)



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