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Class: Mth1313 MWF 2

Office hours (tentative): M11, F1

F02, Sec. 0501

MATH 461: LINEAR ALGEBRA FOR SCIENTISTS & ENGINEERS

COURSE DESCRIPTION: Intended primarily for engineering students, this course provides an introduction to linear algebra and matrix theory and some of their applications, implemented using MATLAB. This course cannot be used toward the upper level math requirements for MATH/STAT majors. Credit will be granted for only one of the following: MATH 240, MATH 400, MATH 461. Topics include systems of linear equations, matrices, vector spaces, linear transformations, scalar products and orthogonality, eigenvalues, and various applications.

Text: *Linear Algebra and its Applications, Third Ed.* by David Lay.

The *Study Guide* can be purchased separately and is recommended, but the first three chapters of the Study guide for the third edition are available on-line at www.laylinalg.com. You may also want to purchase a manual or introductory text on **MATLAB**, if you do not already have one. For help with MATLAB, see either the software info web-page of the Mathematics Department, www.math.umd.edu/undergrad/software.html, or download in either pdf (www.math.umd.edu/~jec/matlabintro.pdf) or postscript (www.math.umd.edu/~jec/matlabintro.ps) format a short introduction to MATLAB.

Exams and Quizzes: There will be three hour exams; on October 2, October 28 and December 2 and a final exam on December 17. In addition, there will be 11 ten minute quizzes. (The dates are noted on the syllabus.) Make-ups for hour exams will be given only upon presentation of an acceptable excuse. No make-ups for quizzes will be given.

Homework: There is a (lengthy) homework assignment for each day (given on the syllabus), not to be handed in. The first few minutes of each class is set aside for the discussion of homework. Students will be responsible for all assigned problems, and I will designate (on separate handout and/or web-page posting) 6 or 7 homework sets consisting of **specified problems plus MATLAB problems** to be handed in.

FINAL EXAMINATION: Thursday, December 19, 1:30 - 3:30.
Location TBA.

Grading: The lowest three quiz grades will be dropped and the rest will count as one hour exam. The final will count as 2 hour exams. The handed in Homework (incl. MATLAB) assignments will count overall as one hour exam. Grading will generally be on the scale: 90–100= *A*, 80–89= *B*, 70–79= *C*, 60–69= *D*, < 60 = *F*.

ACADEMIC INTEGRITY: Students are subject to the University's Code of Academic Integrity as approved by the Campus Senate.

RELIGIOUS OBSERVANCES: If your religion will prevent you from taking an exam or handing in assigned work on a particular date, then get in touch with me at the beginning of the semester to discuss alternatives. You are responsible for making these arrangements at the beginning of the semester.

Available Computer Tutoring

Computer-support tutoring is available to all Math 461 students: the (extensive) hours are posted at

www.math.umd.edu/undergrad/246241Tutorf01.htm

There are also peer training sessions offered by OIT on campus. (Posted flyers are everywhere, and you will also be receiving email about this.)

Math 461 Syllabus, F02 Sec0501

Class	Book-Sec	Assignment
1. Wed 9/4	1.1	p.11: 1,4,9,11,15,19,23, 29.
2. Fri 9/6	1.2	p.25: 1,2,3,9,11,17,19,21,23.
3. Mon 9/9	1.3 (Q1)	p.37: 1,3,5,8,9,11,13,17,21,27,28.
4. Wed 9/11	1.4-1.5	p.47: 1,4,5,7,9,11,21,23,25,39,41. p.55: 1,5,7,11,13,19,23.
5. Fri 9/13	1.7 (Q2)	p.71: 1,3,5,7,9,11,15-20,22,32,33,42.
6. Mon 9/16	1.8	p.79: 1,3,5,7,9,11,13,15,19,20,22,38,40.
7. Wed 9/18	1.9 (Q3)	p.90: 1,2,3,6,8,12,15,17,23,37.
8. Fri 9/20	1.10	p.99: 1,4,7,9,12; p.102: 1.
9. Mon 9/23	2.1	p.116: 1,2,4,7,10,12,17,27,28,35,36.
10. Wed 9/25	2.2 (Q4)	p.126: 1,3,5,6,7,9,13,17,31,41.
11. Fri 9/27	2.3	p.132: 1-8,11,15,18,20,28,33,41.
12. Mon 9/30	REVIEW	
13. Wed 10/2	FIRST HOUR EXAM	Covers Ch.1 and sections 2.1-2.3
14. Fri 10/4	3.1-3.2	
15. Mon 10/7	3.2-3.3	
16. Wed 10/9	4.1 (Q5)	
17. Fri 10/11	4.2	
18. Mon 10/14	4.3	
19. Wed 10/16	4.4 (Q6)	
20. Fri 10/18	4.5-4.6	
21. Mon 10/21	4.7 (Q7)	
22. Wed 10/23	4.9	
23. Fri 10/25	REVIEW	
24. Mon 10/28	2ND HOUR EXAM	Covers Ch.3 and sections 4.1-4.7, 4.9.

The specific problem assignments beyond the first hour exam will be filled in later.

MATH 461 sec.0501 SYLLABUS, continued

- 25. Wed 10/30 5.1-5.2
- 26. Fri 11/1 5.3
- 27. Mon 11/4 5.4 (Q8)
- 28. Wed 11/6 5.5
- 29. Fri 11/8 5.7
- 30. Mon 11/11 5.8
- 31. Wed 11/13 6.1 (Q9)
- 32. Fri 11/15 6.2
- 33. Mon 11/18 6.3
- 34. Wed 11/20 6.4
- 35. Fri 11/22 6.5 (Q10)
- 36. Mon 11/25 6.6
- 37. Wed 11/27 REVIEW
- 38. Mon 12/2 3RD HOUR EXAM Covers sections 5.1-5.5, 5.7-5.8, 6.1-6.6.
- 39. Wed 12/4 6.7-6.8
- 40. Fri 12/6 7.1
- 41. Mon 12/9 7.2
- 42. Wed 12/11 7.3 (Q11)
- 43. Fri 12/13 REVIEW