

MATH 3013 INFORMATION

Section 001, MTWR 10:30–11:45 AM,
CLB 218
Summer, 2011

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Office hours: MTWR 1:00–2:00 PM in MS 527, and by appointment. I will always be available for help during these scheduled office hours. You can always email questions, call on the phone or knock on the door at any other time. If I am too busy, I will try to arrange another time. If I am not too busy, I will be happy to offer you any help you need.

Text: *Linear Algebra: A Modern Introduction*, 3rd ed., by Poole. The student solutions manual is recommended.

Course objectives: To learn the basic theory and applications of vectors, vector spaces, linear equations and matrices, and some of their many applications to science, engineering and many other fields.

Methodology: We will learn how to manipulate vectors and matrices, and how to efficiently solve systems of linear equations. We will also learn how to quickly determine several aspects of the set of solutions without actually solving them. We will learn how to recognize linearity in many different situations and how to exploit the hidden linearity. You will need to learn many new terms (such as *vector space*, *subspace*, *determinant*, *orthogonalization*, *eigenvalues* and *eigenvectors*), and you will be responsible for remembering their definitions precisely and for devising simple proofs or justifications based on these definitions. Many problems will require several steps to solve, and you must organize and clearly present the steps in the solutions.

Prerequisites: Calculus I and II.

Syllabus: See the course calendar.

EXAMINATIONS: Two in-class exams will be given, on **Tuesday Jun. 21** and **Tuesday July 12**. **THERE WILL BE NO MAKEUP EXAMS**; students with very serious conflicts must warn me well in advance (more than one week) of the exams, and we will work out some alternative arrangement. A final exam is also scheduled on **Thursday, July 28, at 8:00–9:50 PM** in our regular classroom. You are allowed to use a calculator no more powerful than a TI-89 graphing calculator. No palmtop or laptop PC's or other devices with a keyboard or wireless or internet capabilities are allowed.

You will be given an exam with the questions and problems and space for you to write out the solutions and the work needed to justify them. Unless otherwise stated on the exam, all work necessary to arrive at the solution of an exam problem must be written on the exam paper.

HOMEWORK: All students will be expected to complete all the regularly assigned homework, including

- **Online Homework in WebAssign** (webassign.net)
- **Written assignments:** to be written up in detail and turned in at the scheduled class or at the corresponding D2L dropbox.

You should enroll at webassign.net using the class code **okstate 7352 9715**. Please use your OSU short O-key as your login name when you enroll. To find your short O-key, login to okey.okstate.edu.

Some sites you may find useful are below:

- Self Enrollment Instructions
- Student's Guide to WebAssign

Scoring: There will be between 450 and 500 points of problems on WebAssign. Each WebAssign point will be worth 0.5 course points. You may earn a maximum of 200 Web Assign points.

Each written assignment problem will be worth between 1 and 4 points depending on its difficulty; the total possible over the course of the term will be approximately 120 points, although the maximum you can earn is 100 points. That makes it possible to make up a missed assignment if you do the others well.

Scanning written assignments: Write solutions neatly on one side of the paper only, and then scan your finished work into a single multi-page PDF

document file. Then upload the PDF file to the corresponding ‘dropbox’ in the Desire2Learn class site by the scheduled deadline. Instructions on how to do this will be given in class.

Working problems in the textbook is also strongly recommended. Answers to the odd-numbered questions are in the back of the text, and should be read carefully. It is your responsibility to complete enough problems to be prepared for the exams. Please take note of problems you would like to discuss in class and be sure to press me to go over them.

Grading: Examinations and homework are weighted according to the following system.

The WebAssign homework will be counted out of 200 points.

The written homework will be counted out of 100 points.

The two midterms and the final exam will be 200 points each.

The above five scores are added to give your course total out of 900 points.

Students who achieve at least 90 %, 80 %, 70 %, or 60 %, respectively, of the total score will be guaranteed of receiving at least an A, B, C, or D, respectively. Depending on the median scores, these cutoffs may be lowered. Some discretion of the instructor may be used in deciding borderline cases. Occasionally, some bonus assignments may be offered; scores for any bonus work will simply be added to the course total.

Computer support: We will give some instruction on calculating with matrices on TI calculators, which may be useful on exams and homework, but are not required. However, it is very unwise to believe the calculator can compensate for lack of understanding of the logical concepts of linear algebra, and most people need to do quite a lot of hand calculation to gain that understanding.

We will also give examples using the computer mathematics system MAPLE. If your future plans involve technical programming, we recommend that you consider acquiring the student version of MAPLE.

Math Learning Resources Center: Course assistants and software are available at the MLRC in CLB 420 to aid students in understanding the material covered. Hours of availability will be announced during the term. Specialized linear algebra assistance is available on MTWR from 2:00 PM to 5:00 PM.

STANDARD OPERATING PROCEDURE: All students must complete a minimum of six hours of work each week outside attending lectures. This work is

to consist of reading in detail all sections of the book covered in class and performing all assigned homework problems and enough additional problems to make sure that you understand the material. It is very important that you contribute this six or more hours of work every week.

Academic Dishonesty: Academic dishonesty or misconduct is neither condoned nor tolerated at OSU. Academic dishonesty is behavior in which deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or another. Academic misconduct is behavior that results in intellectual advantage obtained by violating specific directions, rules, or accepted academic standards, but without deliberate intent or use of fraudulent means.

Attendance Policy: All students are responsible for all material covered in class and all announcements made in class. Notes and other course material will be available at oc.okstate.edu. Attendance roll is not taken, but we very strongly advise that students who attend regularly generally perform much better in the course.

Disability: If you feel that you have a disability and need special accommodations to pursue the course, the instructor and the Office of Student Disability Services (315 Student Union) will work with you to ensure that you have a fair opportunity to complete this class. Please advise the instructor of such disability before the second class period of the second week of the term.