MATH 3013 INFORMATION

Section 002, MWF 11:30AM–12:20PM, ES 111 Fall, 2015

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D2L: `http://oc.okstate.edu/`

Office hours: MWF 1:30–3:00 PM in MS 527, and by appointment. You can always email questions, call on the phone or knock on the door at any other time. If I am there and not having a nervous breakdown, I will be happy to help you.

Text: *Linear Algebra: A Modern Introduction*, 4th ed., by Poole. Two copies of the textbook are on two-hour reserve at the library room 105. The student solutions manual may also be useful.

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, comfort with basic algebra and notation such as x_n (for n-th term in a sequence) and $\sum_{n=1}^{m} x_n$ (for a sum of m terms).

Syllabus: See the course calendar.

EXAMINATIONS: Three exams will be given in class, on **Fri., Sept. 18**, **Fri., Oct. 16**, and **Fri., Nov. 20**. **THERE WILL BE NO MAKEUP EXAMS**; students with very serious documented conflicts must warn me well in advance (more than three days) of the exams, and we will work out some alternative arrangement. There is also a scheduled final exam on **Monday, Dec. 7,** from 10:00–11:50AM.

You are allowed to use a calculator no more powerful than a TI-89 graphing calculator, with no keyboard or communications ability or computer algebra system (CAS). Cellphones must be completely turned off during exams.

You will be given an exam with the problems and space below 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 and justify the solution of an exam problem must be written on the exam paper.

WebAssign: All students will be expected to complete all the regularly assigned homework which will be administered and graded at the online homework site **WebAssign** at `webassign.net` using the class code

okstate 1547 5892.

Please enroll with your full name. The assignments will be due on certain **Mondays**, **Wednesdays**, and **Fridays** at **11:59 PM**. See WebAssign for the exact schedule; sign up for the email reminder or notifications system in WebAssign.

Some sites you may find useful are below:

- Student's Guide to WebAssign
- Student's WebAssign Help Pages

Scoring: There will be at least 350 total points of problems on WebAssign. Each WebAssign point will be worth 0.5 course points. You may earn a maximum of **150** course points (equivalent to 300 Webassign points) from WebAssign.

Notebook: It is very important that you practice writing out the steps in arriving at solutions to the WebAssign problems. Keep a dedicated notebook where you record and save your work on the problems. In addition, read all the other problems in the textbook at the end of each section covered. If you wish to see step-by-step solutions beyond those provided in WebAssign, please purchase the student solutions manual.

Written Homework: There will be 5 written assignments to be turned in during scheduled classes. These will be at most 6 problems to practice writing out all the reasoning and detailed *hand* calculations. Answers only will not be worth much.

Grading: The three in-class exams will be 100 points each.

The final exam will be worth 200 points.

The WebAssign work will be worth at most 150 points.

The written homework will be counted out of 50 points; any score beyond will be treated as bonus.

The course total is 700 points.

Students who achieve at least 90%, 80%, 70%, or 60%, respectively, of 700 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.

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**. Instructions for purchasing **MAPLE** at the class discount price are provided on D2L.

Math Learning Success Center: Course assistants and software are available at the MLSC in the Low Library to aid students in understanding the material covered. Hours of availability will be announced during the term.

STANDARD OPERATING PROCEDURE: All students must complete a minimum of two to three hours of work per class 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 complete this outside class work on a regular and steady basis.

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 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.