MATH 333
Linear Algebra
Fall 2013

General Information

Instructor: Dr. Waleed Al-Rawashdeh
Location: Office: Museum 110
Phone: (406)496-4407 (no voicemail)
Email: walarawashdeh@mtech.edu

Office hours: MWF: 10am – 11am, TR: 1pm - 2pm. (others by appointment).

I encourage you to come by my office if you have any questions, need help with homework problems, or would just like to talk about the material. If for some reason you are unable to make it to office hours, you are welcome to email me to set up an appointment for another time.

Course Materials


Material: We will cover most of the first six chapters of the text. (Time dependent)

Description: System of linear equations, matrix algebra, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, inner products and norm, applications and numerical methods.

Course Objectives: Upon successful completion of this course, the students will be able to

- Solve systems of linear equations using matrix notation and will demonstrate the properties of solution sets.
- Demonstrate properties of linear transformations, including one-to-one, onto, invertibility, rank, null space, eigenvalues and eigenvectors.
- Compute determinants and manipulate matrices according to the properties of matrix algebra.
- Demonstrate the basic properties of vector spaces, including linear independence, basis, change of basis, and dimension.
- Demonstrate the concepts of distance and orthogonality in vector spaces, and demonstrate the method of producing approximate “least-squares” solutions for inconsistent linear systems.

Class Policies:

The course requirements are listed below. They are designed to assist you in understanding and mastering the course material. You are expected to spend several hours each day outside of class reading, studying and solving problems. If you have difficulties following the class, be sure to ask
questions in class or during office hours. If you are unable to come to my office hours to ask questions, I encourage you to make an appointment to see me at other times.

**Attendance and Class Participation:** Attendance is required and will be taken daily. You are expected to be on-time and remain the entire class time. It is your responsibility to find out what was discussed in a missed class. There are no points for attendance. However, if your final grade is on the borderline and you have been **absent three or more times** during the semester you will be given the lower letter grade. In addition to merely attending class, you are expected to participate in discussions, question-and-answer sessions and other classroom activities. No question will be too trivial to ask.

**Behavior:** Rudeness will not be tolerated. Rude behavior, including but not limited to arriving late, leaving early, and talking out of turn, will result in one warning. If the behavior continuous, 5 points per infraction will be subtracted from the offender’s point total.

**Homework:** Suggested homework problems will be given in class at the beginning of each section. Homework will not be collected – however students are strongly encouraged to complete all assignments. Completing the homework assignment is the most important activity in the course, as they will help you to prepare for the exams. Before attempting the homework problems read the notes, textbook, and study the examples in the textbook. This reinforces the material presented in class. **There is a big difference between watching an instructor do a problem and doing one yourself, the best way to learn mathematics is to do mathematics.** If you work with other students when doing homework problems, be an active participant.

**Quizzes:** There will be seven in-class quizzes, some in class and others take home quizzes. Quizzes will be given according to the instructor’s discretion throughout the semester. **No make up quizzes will be given under any circumstances.** Dropping the lowest two quizzes will cover absentee situations.

**Exams:** There will be three in-class exams and a **comprehensive final exam.** The dates in the syllabus are tentative and subject to change. If you know that you are going to miss class on an exam day for school business please arrange to take the exam in advance. Makeup exams will be available for two class days after the missed exam. If the missed exam is not made up by that time, you will receive a zero on the missed exam. Documentation must be provided to receive a makeup exam. The exams’ dates are:

- Exam #1: Monday, September 23.
- Exam #2: Monday, October 21.
- Exam #3: Friday, November 22.
- Final Exam: Monday, December 16. (11:30am – 1:30pm) **This time can not be changed.**

**Grade Distribution:**

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<tr>
<td>Quizzes</td>
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<tr>
<td>Final Exam</td>
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**Grading Scale:**

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<td>83</td>
<td>C-</td>
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**Cell Phone Policy:** No cell phones on desks at any time. Put phone on vibrate.

**Final Word:** Mathematics is not a spectator sport. What you learn from this course and your final grade depends mainly on the amount of work you put forth. Daily contact with the material through the homework problem and review of notes taken during lectures are extremely important. The best way to prepare for the exams is by reviewing the relevant material and **working problems from scratch**. Rather than reading problems’ solutions, work them on your own first. Then compare your answer to the solution in your book or notes. **There will be no extra credit assignments.**

**Amendments:** Any changes to this syllabus will be announced in class, and an updated version will be posted on Moodle.