

**Fall 2013. MATH2360. Section 001.**

## **Linear Algebra**

**Instructor:** Luan Thach Hoang

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Homepage: <http://www.math.ttu.edu/~lhoang/>

Office hours: MWF 3:00 pm - 4:00 pm

**Classroom and Time:** MWF 2:00 pm - 2:50 pm CHEM 113

**Course website:** <http://www.math.ttu.edu/~lhoang/2013Fall-M2360/>

Updates about the course and other related announcements will be posted on this webpage.

**Prerequisite:** MATH 1352 or MATH 1452.

**Text:** *Elementary Linear Algebra*, 7th edition by R. Larson, published by Cengage

**Course Description:** Basics of linear algebra: matrices and systems of equations, determinants, vector spaces, linear transformations, orthogonality, and eigenvalues. Some of their applications are presented.

### **Course Outline:**

- Chapter 1 – Systems of Linear Equations (4 hours)
- Chapter 2 – Matrices (5 hours)
- Chapter 3 – Determinants (4 hours)
- Chapter 4 – Vector Spaces (8 hours)
- Chapter 5 – Inner Product Spaces (6 hours)
- Chapter 6 – Linear Transformations (7 hours)
- Chapter 7 - Eigenvalues and Eigenvectors (5 hours)
- Test and Review (6 hours)

**Expected Learning Outcomes:** Students develop skill in manipulating with matrices and understand their relationship to linear systems. They understand the concept of bases and vector spaces, as well as, eigenvectors and eigenspaces. In particular, students

- perform basic vector algebra, and compute their bases
- express a linear transformation as a matrix
- perform basic matrix manipulations, and compute the determinant of a matrix
- compute eigenvalues and eigenvectors
- use the Gram-Schmidt process

**Methods of Assessment of Learning Outcomes:** Assessment of the learning outcomes will be achieved through homework assignments, quizzes, three midterm exams, and a final exam.

**Homework Assignments:** Online homework will be assigned through Webwork. Students will receive the instructor's message for login information. Due dates are indicated on each assignment. Students should spend very first week to get familiar with the system.

**Webwork Link:** <http://webwork.math.ttu.edu/webwork2/f13lhoangm2360s001>

**Quizzes:** Will be given in class weekly.

**Grading Policy:** Both homework and quizzes will count for 25% of the grade. Each lowest score of homework and quizzes will be dropped. There will be three midterm exams in class, each will count for 15% of the grade. The final exam will count for 30% of the grade. All in-class exams are closed-book. No make-up exams are given unless legitimate documents for excuses are presented to the instructor at least a week in advance. Grading Scale: A: 90%-100%, B: 80%-89%, C: 70%-79%, D: 60%-69%, F: below 60%

**Calculators:** Only scientific calculators are allowed in exams. These calculators can calculate the values of the standard algebraic, trigonometric, exponential and logarithmic functions. Graphing calculators and calculators that can do symbolic manipulations are not allowed.

**Attendance Policy:** Students must go to lectures and attendance will be taken. If you miss no more than four lectures, a bonus of three points will be added to your final grade.

### **Examination Schedule:**

- Midterm 1: Friday, September 20, 2013
- Midterm 2: Friday, October 18, 2013
- Midterm 3: Friday, November 15, 2013
- FINAL EXAM: 4:30 pm - 7:00 pm, Monday, December 9, 2013. Room: CHEM 113

### **Critical Dates:**

- Aug. 26: Classes begin.
- Sep. 2: Labor Day. University holiday.
- Sep. 11: Last day to drop a course without penalty.
- Oct. 28: Last day for student-initiated drop on MyTech with penalty.
- Nov. 26 - Dec. 5: No exams.
- Nov. 27 - Dec. 1: Thanksgiving Holiday.
- Dec. 4: Last day of classes.

**Academic Misconduct:** Academic dishonesty is intolerable and will be punished to the full extent allowed by the University policy.

**Civility in the Classroom:** Texas Tech University endeavor to foster a classroom climate of mutual respect among students and between students and teacher. Students are expected to maintain a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Students must attend class on time and are not allowed to leave the class before the end of the hour without authorization. During class time students are not allowed to eat, smoke, drink alcohol, text, chat, sleep, play games, read newspapers, wear earphones, play with smart phones or tablets, etc. Please put silent mode to all your electronic devices. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.

**Students with Disabilities:** Any student who because of a disability may require special arrangements in order to meet course requirements should contact the instructor as soon as possible. *"I would appreciate hearing from anyone who has a disability that may require special accommodations. I am sure we can work out whatever arrangements are necessary. Please see me during my office hours."* Student Disability Services office is in 335 West Hall (phone: 806-742-2405).

**Advice:** Come to class regularly, work on homework problems. Ask questions in class and get help from the Tutoring Center (information will be provided) or from the instructor during the office hours. Since a lot of material will be covered, students have to master them quickly and do not wait too late until the midterms or the final exam. Students are encouraged to give feedbacks to the instructor during the semester.

*NOTE:* When needed, the instructor will communicate with the students using their TTU email addresses. At the beginning of the semester, the instructor will send out two special email messages. One is to confirm the students' email addresses, the other one is about Webwork. If a student does not receive those messages by the time of the second class, he/she must contact the instructor immediately.