

Kent Pearce
Office: Math 201-A
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Linear Algebra
Math 2360-005
MA 114 TR 12:30-1:50

Office Hours:
Fixed Hours
MWF 1:00 - 2:00
Other Hours
By Appointment

Text:
Larson, Ron
Elementary Linear Algebra
Seventh Ed., Cengage

Course Website:
www.math.ttu.edu/~pearce/courses.shtml

Chapters:
1-7

WebAssign Website:
www.webassign.net
Class Key: ttu 2309 3728

Course Description

Linear algebra is the study of systems of linear equations and the related concept of vector spaces. The class is focused on solution of concrete problems.

Prerequisites

Math 1352/1452 or consent of the department.

Student Learning Outcomes

Math 2360 satisfies the university's core curriculum requirement in mathematics: *Students graduating from Texas Tech University should be able to demonstrate the ability to apply quantitative and logical skills to solve problems.* It meets the following TTU general education student learning outcomes for mathematics, that students will:

1. Apply arithmetic, algebraic, geometric, statistical and logical reasoning to solve problems.
2. Represent and evaluate basic mathematical and/or logical information numerically, graphically, and symbolically.
3. Interpret mathematical and/or logical models such as formulas, graphs, tables and schematics, and draw inference from them.

In the class, the students will develop skills in manipulating matrices and understand their relationship to linear systems of equations. The students will develop an understanding of the concept of vector spaces including bases, linear transformations, eigenvectors, and eigenspaces. In particular, students will learn to:

1. Solve systems of linear equations
2. Perform matrix arithmetic and compute the determinant of a matrix
3. Perform the Gram-Schmidt orthogonalization process
4. Compute eigenvalues and eigenvectors
5. Recognize vector spaces and determine their bases
6. Express a linear transformation as a matrix

Assessment of Learning Outcomes

Graded assessment is done through homework and exams. Other assessment techniques will also be used; these include direct questioning, problems to be solved in class, and discussions during office hours. Additionally, problems will be assigned for student self-assessment. The homework problems will be assigned out of the textbook and an online test bank; they will be chosen such that they facilitate the students' development of skills in manipulating matrices, solving systems of linear equations, and determining bases for vector spaces. Exam problems will be constructed such as to test if the students have acquired the skills and understanding necessary to perform the five types of operations listed above.

Course Grades

Class grades will be assigned according to the following rubric:

In Class Tests:	300 pts.
3 Exams @ 100 pts.	
Dates: Sep 18, Oct 23, Nov 27	
On-line Homework	150 pts.
WebAssign: www.webassign.net	
Final Exam:	200 pts.
Comprehensive	
Date: Saturday, 8 Dec, 1:30 pm	
Grade Total	650 pts.

Grading Scale

A...100% - 90% B...89% - 80% C...79% - 70% D...69% - 60% F...59% - 0%

Technology

Graphing calculators (TI-83, TI-84, TI-89 or equivalent) and/or computer algebra software (Maple, Mathematica, Matlab) can be invaluable aids for facilitating learning. On the other hand, the course objectives are not centered around calculator proficiency nor computer expertise. Students may use a graphing calculator or computer algebra software while doing WebAssign assignments to facilitate: (1) learning of concepts; (2) understanding the material; (3) checking calculation details. The emphasis on mid-term exams and the final exam will be oriented towards assessing mastery of the concepts stated in the Student Learning Outcomes section. To that end, calculators will not be allowed in the mid-term exams nor in the final exam.

Critical Dates

Monday, Oct 22, Mid-Semester Grades Due

Monday, Oct 29- Last day to drop a course

Wednesday, Dec 05 - Last day of classes.

Saturday, Dec 08 - Comprehensive Final Exam (1:30-4:00)

Notices

Academic Integrity (Extracted from [OP 34.12](#))

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not

honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

Civility in the classroom (Extracted from [Faculty Handbook](#))

Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom.

Observance of Religious Holiday (Extracted from [OP 34.19](#))

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

Accommodation for Students with Disabilities (Extracted from [OP 34.22](#))

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor’s office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.