PRACTICAL INFORMATION

Instructor:	Lars Winther Christensen
Office:	MA 251
Office hours:	M 11:30–1:30 pm, T 11:00–1:00 pm, and R 1:00–2:00 pm, or by appointment
E-mail:	lars.w.christensen@ttu.edu
Course homepage:	www.math.ttu.edu/~lchriste/teaching2360141.html

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.

Required text: *Elementary Linear Algebra,* 7th edition by Ron Larson, Cengage.

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:

- Apply arithmetic, algebraic, geometric, statistical, and logical reasoning to solve problems.
- Represent and evaluate basic mathematical and/or logical information numerically, graphically, and symbolically.
- 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 connections 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 the students will learn to

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

LEARNING ASSESSMENT

Graded assessment is done through homework and exams. 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 ORGANIZATION

In the 14 weeks of classes the plan is to cover sections 1.1–1.2 (1 week), 2.1–2.4 (2 w), 3.1–3.4 (2 w), 4.1–4.7 (3 w), 6.1–6.4 (2 w), 7.1–7.3 (2 w), and 5.1–5.4 (2 w), with examples drawn from sections 1.3, 2.5, 4.8, 6.5, and 7.4. Exact reading assignments are posted on the course homepage, which is updated every week.

Exams: Exam 1 take place on 22 Oct., 7:00–9:30 pm; Exam 2 takes place on 5 Dec., 10:30–1:00 pm. Students located more than 2 hours' drive from campus can take the exams elsewhere, provided that they can arrange for an approved proctor.

Other important dates:

Last day to drop a course without penalty	10 Sep.
Last day to drop a course	27 Oct.
Last day to withdraw	26 Nov.
Thanksgiving Vacation	26–30 Nov.

ASSIGNMENTS, GRADES, AND GRADING

Homework will be assigned every week during the semester and is due on Mondays and Thursdays. Most of the homework is done online in WeBWorK; online homework is due at Midnight on Mondays and Thursdays. Written homework is due on Thursdays and can be submitted on campus (by 5 pm), or it can be scanned and e-mailed in (by Midnight). Results and grades are posted at www.blackboard.ttu.edu.

Grading policy: On exams and written homework, partial credit for correct steps will be awarded even if the final answer is wrong. Full credit will be given only if the final answer and all intermediate steps are correct. A correct final answer does not *per se* guarantee any credit.

Deadlines: Homework is not accepted after the deadline.

Final grade: Homework (20+10) and exams (2) are counted towards the final grade with weights as follows: Online homework 30% (1.5% ea.), written homework 10% (1% ea.), exams 60% (30% ea.).

GENERAL POLICIES

Academic integrity: It is the aim of the faculty of TTU to foster a spirit of complete honesty and a high standard of integrity. Any attempt of students to present as their own any work that they have not honestly performed is regarded by faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension. Please see more information on-line at www.depts.ttu.edu/studentjudicialprograms/academicinteg.php.

Officially approved trips: Students are allowed to miss class for trips officially sanctioned by TTU. The student must notify the instructor of upcoming trips and present written authorization.

Religious holy days: You are allowed to take the time to travel and observe a religious holy day. Prior notice should be given at least one week before the absence.

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 to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's 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, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.