

MATH 2360: Linear Algebra  
Section 002, MWF 11:00–11:50, MATH 114

**Course Information:**

Instructor: Chris Monico  
 Email: c.monico@ttu.edu  
 Office: MA-252  
 Office Hours: Tues. 1-3, W. 2:30-4:00, Th. 1-3, or by appointment.  
 Required Text: *Elementary Linear Algebra* by Ron Larson, seventh ed.  
 Course prereq's: MATH 1352 or 1452.

**Course outline & Important dates:**

**WARNING:** This course moves very fast. If you fall behind, even by one section, you may not be able to easily catch up as each section generally depends very heavily on the ones before. I expect that students will read each section of the textbook in advance of the lecture. The following is my best approximation of what we will cover and when it will be covered. We will cover most of the material from Chapters 1-7. This is approximately 350 pages of material, so I cannot re-iterate strongly enough that you will have to read textbook.

| Material            | # lectures |
|---------------------|------------|
| Ch.1, Sections 1-3  | 4 hours    |
| Ch. 2, Sections 1-4 | 5 hours    |
| Ch. 3, Sections 1-3 | 4 hours    |
| Ch. 4, Sections 1-7 | 9 hours    |
| Ch. 5, Sections 1-4 | 5 hours    |
| Ch. 6, Sections 1-4 | 6 hours    |
| Ch. 7, Sections 1-3 | 5 hours    |

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|--|----------------------------|
| No classes   | Monday, Sept. 3.           |
| Exam 1   | Friday, Sept. 21.          |
| Exam 2   | Friday, Oct. 26.           |
| Last day for student-initiated drop on MyTech with penalty | Monday, Oct. 29.           |
| Exam 3   | Monday, Nov. 19.           |
| Thanksgiving holiday                                       | Nov. 21-25.                |
| Last day of classes  | Wednesday, Dec. 5          |
| Final Exam   | Friday, Dec. 7, 1:30-4:00. |

**Calculator policy:** Calculators may be not be used on Exam 1, but can be used on Exams 2,3 as well as the final exam. Nevertheless, students are expected to have mastered arithmetic and algebra.

**Attendance:** Class attendance is *mandatory*. It is assumed that you will attend, so I will not waste your time by taking attendance. However, keep in mind that it will be decidedly difficult for you to pass this course if you do not attend. If you miss a class, it is your responsibility to find out what you missed (assignments, notes,...); either ask a fellow student or come by my office to find out - do *not* ask via email. If you are absent for an exam, you will be permitted to make it up *if and only if* you are absent for one of the following reasons:

- You are out of town performing duties on behalf of the university (i.e., athletics). Advance notification is required.
- Religious holiday (see TTU OP 34.19 below).
- **Severe** illness or hospitalization. Illness must be documented by a physician and you should notify me in advance of the exam, if possible.
- Death in the family.
- Other extenuating circumstances, at the instructor's discretion (I am *not* very generous with this - it is only meant to allow for unforeseeable situations that are more serious than the things listed above. It does not cover, e.g. "My parents already bought a plane ticket for that date" or "My friend is getting married that weekend").

Note: Under such circumstances you will be given a substantially different 'make-up exam', not simply the same exam with numbers or functions changed. This is to be as fair as possible to the entire class and ensure that no student has an unfair advantage.

**Expected Learning Outcomes** M2360 satisfies the university 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, algebra, 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.

Students will develop skill in manipulating with matrices and understand their relationship to linear systems. They will 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.

**Assessment of learning outcomes** The expected learning outcomes for the course will be assessed through scheduled exams and homework assignments. Homework will be assigned regularly (nearly every class meeting), but weighted very lightly in your final grade - the primary purpose of the homework is as a learning aid. There will be no extra credit available - your grade is determined solely by the homework and exams. Written homework assignments are due at the end of class on the specified dates and late homework (written and online) will not be accepted.

Your final grade in this course will be determined by the weighted components and grading scale below.

| Grade components |     | Grade Scale |   |
|------------------|-----|-------------|---|
| Homework:        | 15% | 90-100%     | A |
| Exam 1:          | 20% | 80-89%      | B |
| Exam 2:          | 20% | 65-79%      | C |
| Exam 3:          | 20% | 55-64%      | D |
| Final Exam:      | 25% | 0-54%       | F |

**ADA Accommodation:** 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 instructors office hours. Please note that 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 in 335 West Hall or 806-742-2405.

### Religious Holy Day Observance (OP 34.19)

1. "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20.
2. 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.
3. A student who is excused under Section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

**Academic Integrity** I take academic integrity extremely seriously. In particular, I have a zero-tolerance policy for both cheating and plagiarism. I define *plagiarism* as claiming the work or ideas of someone else as your own. Copying homework, phrases, sentences, or calculations from any other source (including another student or a solutions manual) without citation is therefore plagiarism. Yes - it is very possible to plagiarize mathematics and it is just as offensive as every other instance of plagiarism. I would hope that you do not want someone else to claim credit for your hard work and I therefore expect that you will not claim credit for someone else's work under any circumstances. If you use (read, look at, listen to, copy,...) a source other than the textbook then cite it, being as specific as possible (e.g., if you used a web site then give the URL - but if you forgot to write it down or cannot find it, the next best thing would be the name of the web site; if you cannot remember that, then at least acknowledge that it came from the web but you cannot remember where).

All instances of cheating on exams will be dealt with as strictly as allowed by TTU OP 34.12. Instances of plagiarism will be dealt with on a case-by-case basis and may range from a written warning to an automatic assignment of an F in the course, depending on the severity of the offense.