

Fall 2024 TAMU-Commerce Math 2318 – Linear Algebra

This is the syllabus for Math 2318-Linear Algebra, Section 02E for Fall 2024. Please read it carefully. You will be responsible for all information given in the syllabus, and for any modification to it that may be announced in classes.

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Office hours: MW: 2-3pm, W:10-11am, TR: 11am-12 pm, or by appointment.

Class schedule and room: TR 2:00 -3:15pm, Binn. 302

Text & Course Material: *Linear Algebra and its Applications*, by David C. Lay, 4th Edition. Tentatively, chapters 1 – 4 of the text will be covered, and some topics from chapters 5 – 7 will also be covered if time permitted.

Course Description: Vector spaces; linear transformations; matrices; determinants; systems of linear equations; equivalence relations on matrices; characteristic vectors, operators.

Prerequisite: Math 2305.

Learning Outcomes: Upon successful completion of this course, the students will be able to:

1. Understand and interpret the concepts of a vector space, linear combinations, bases, subspace and dimensions;
2. Use matrix theory (operations of matrices, inverse, eigenvectors, row reduced echelon forms) to solve systems of linear equations;
3. Understand linear transformations: the definition, matrix representations, relation to system of linear equations, one-to-one, and onto linear transformations interpreted in the language of system of linear equations.
4. Recognize the standard form, vector form and the matrix form of a system of linear equations; understand the solution structure and solve a system by using Row Reduced Echelon Form of the augmented matrix, Cramer's Rule, and the inverse of the coefficient matrix.
5. Understand the definition and the properties of determinants, use row operations and a calculator to evaluate a determinant and use Cramer's Rule to solve systems of linear equations.

Instruction: Instruction will include lecture, demonstration and models, and some group work, based on time available.

Attendance: Attendance will be checked and it is your responsibility to sign the daily roll sheet. It is your benefit to attend the class.

Tests: There will be two midterm tests and a final exam for the course. The tentative schedules for the exams are:

Test 1: Sept. 26, Thursday 2:00pm-3:15pm.

Test 2: Nov. 7, Thursday 2:00pm-3:15pm

Final exam: The comprehensive final exam is scheduled on
Dec. 10, Tuesday, 1:15pm-3:15pm.

Homework & Projects: Homework are assigned on a weekly basis. You are strongly recommended to work out homework assignments on a regular basis since **No one can learn mathematics without doing it!** The assigned homework problems will be collected to grade **once every two weeks** (See the last page for detailed homework due information). Some homework problems or the similars will be used as test questions.

Course grades: The course grade consists of

Homework & Quizzes:	20%
Two tests :	50%
Final exam:	30%.

The letter grades will be assigned using the following scale:

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

Withdrawal Policy: Concerning the deadlines and consequences of withdrawals please check on

<https://inside.tamuc.edu/admissions/registrar/academicCalendars/>

Tutoring & Help : A better way to learn math is to keep progress and leave no gaps in one's study. So please get help as soon as you need it and do not wait until it is too late. You are welcome to come to me or go to Math Skills Center located in **Bin 328** where you can find free tutors for help. The tutoring hours of Math Skills Center for the current semester are:

MTWR 10am – 6pm, and F 10am – 2pm

Academic Integrity: I have a **NO TOLERANCE** policy for cheating and if you are caught cheating you will fail this course. Cheating in this course includes the following:

- Giving or receiving answers during an exam or quiz.
- Viewing the exam or quiz answers of others.
- Having notes/practice work available during quizzes or tests.

- Possession or access to test items before the test is given.
- Deception in getting an excused absence to obtain the undeserved opportunity to make-up work.
- Use of cell phones or text messaging technology during exams or quizzes. You may not use the calculator on your cell phones.
- Improper citations in written works, or using another person's ideas and words as your own without giving proper credit.
- **Any** method, no matter how well rationalized or accepted, which improves a person's grade by any means other than study and skillful performances on exams and/or other assignments.

Students found guilty of an act of academic dishonesty in this course will be subject to receiving an "F" in this course.

Classroom Behavior: "All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment" (See Student's Guidebook). A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

AI use policy: Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

The information for students with disability: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If

you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 132, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, email: StudentDisabilityServices@tamuc.edu

Counselling & Help: The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Campus Concealed Carry Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Homework assignments (4th edition)

Section 1.1: 6, 7, 13, 15, 29, 31.

Section 1.2: 4, 7, 11, 17, 18, 22.

Section 1.3: 4, 9, 11, 14, 24.

Section 1.4: 1, 6, 7, 12, 16, 22.

Section 1.5: 1, 4, 12, 18, 24, 33.

Section 1.7: 1, 5, 14, 20, 37, 38.

Section 1.8: 1, 6, 9, 12, 17, 37.

Section 1.9: 1, 4, 15, 17, 23, 35.

Section 2.1: 1, 4, 10, 17, 27, 34.

Section 2.2: 3, 6, 7, 11, 14, 18, 35.

Section 2.3: 6, 7, 8, 17, 18, 34.

Section 2.8: 2, 7, 11, 13, 15, 23.

Section 2.9: 11, 13, 15, 19, 20, 21.

Section 3.1: 1, 3, 9, 21, 23, 33.

Section 3.2: 1, 2, 11, 19, 29, 41.

Section 3.3: 4, 5, 9, 14, 15.

Section 4.1: 1, 5, 6, 13, 15, 18.

Section 4.2: 6, 8, 9, 18, 24, 31.

Section 4.3: 3, 9, 13, 21, 33.

Section 4.4: 3, 7, 10, 13, 17, 23.

Section 4.5: 1, 4, 9, 11, 19.

Section 4.6: 4, 5, 7, 10, 15, 27.

Section 5.1: 2, 3, 9, 15, 18, 21.

Section 5.2: 1, 4, 15, 19, 23, 24.

Section 5.3: 5, 7, 11, 15, 23, 27.

Section 6.1: 1, 2, 6, 8, 23, 26.

Section 6.2: 2, 5, 11, 17, 21.

To be continued