

Department of Mathematics and Statistics
MAT 335 — Matrix Theory and Linear Algebra — Spring 2026

Course Description: The algebra of matrices and its application to problems in Euclidean spaces and elementary linear transformations. (3 credit hours)

Prerequisites: MAT 308.

Course Objectives: The student will learn techniques of solving systems of linear equations as well as some applications. Related basic concepts in linear algebra will be discussed. Primary skills to be acquired involve solving systems of linear equations, working with matrices and determinants and understanding the underlying concepts of vector spaces, subspaces and linear transformations.

Instructional Activities: Lectures and problem solving.

Field, Clinical, Laboratory Experiences, Resources: None.

Instructor: Dubravko Ivanšić [DOO-brahv-ko EE-vahn-shich] Ivanšić is the last name.

Phone & e-mail: 809-3552, divansic@murraystate.edu

Office: Faculty hall 6A-1 (in the Department of Mathematics and Statistics annex)

Course webpage: (A link to this has also been placed on Canvas.)

<http://campus.murraystate.edu/academic/faculty/divansic/26spring/335home.html>

Office Hours: Ask me or check the webpage.

Textbook & Content Outline: L. Spence, A. Insel, S. Friedberg, Elementary Linear Algebra: A Matrix Approach, 2nd edition. We plan to cover chapters (or their parts) 1–7 of “Elementary Linear Algebra.”

Homework: To promote a continuous effort in the course, homework problems will be assigned. Typically, a section will be assigned once we have covered it and selected problems will be discussed in class. The list of homework problems may be found on the webpage. A smaller portion of the homework problems is to be written up and handed in. In order to succeed in the course you will need to work on all the problems, since test problems will be based on *all* problems assigned for homework and those done in class, not just the ones you hand in.

The problems that you hand in should be reasonably neat and all the sheets should be stapled together. You do not have to write the statement of the problem, but should write brief explanations in words where necessary and should follow “mathematical grammar” when writing. Points will be taken off if these guidelines are not followed or if the homework is late.

Don’t fall behind: Our course mainly deals with vectors, matrices, linear transformations and vector spaces. While the concepts are pretty simple, many of them will be new, so they will require a lot of your attention and time. This makes for a fairly challenging course, so make sure you are up to date from the very beginning.

Mathematics is best learned by doing and to acquire proficiency it is essential that you do many homework problems. For quality results, expect to spend at least one to two hours of study time for every hour of class time. If some things aren’t clear to you, see me for help as soon as possible and not the day before the exam.

Attendance: Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU Bulletins. Attendance is strongly encouraged every day, and roll will be taken. If you miss six or fewer classes during the semester, you get 3% bonus points. Note that you are not penalized for missing a class (the points are in excess of your total grade), so an absence is counted as such regardless of the reason (“excused” or not).

Seating: If there are seats available in the front rows of the classroom, no one will be allowed to sit in the back rows.

Participation in class: is strongly encouraged, as your questions indicate what points need to be addressed in more detail. We will go over some homework in class. You are expected to have worked the problems at home in order to both ask and answer questions on the homework. To encourage participation, a portion of your final course grade will be based on how active you are in class. In order to earn points, you need to be able to answer a homework question when called on.

Exams: There will be three exams whose dates will be announced well in advance. **On all exams calculators will not be allowed.**

Final exam: is comprehensive and will be held on Tuesday, May 5th, at 8:00.

Grading procedure: For your final grade, each of the three exams is worth 27%, homework is worth 15% and participation in class is worth 4% of the total. Your final exam grade replaces your poorest exam grade if it is better, hence, it is worth 27%. If you are happy with your exam scores during the semester, you don't have to take it. (Note that getting a good grade on the final is more difficult than on a regular exam, since it covers the whole semester.) No extra credit work will be given to repair your grade. The final grade scale is approximately

90%–100%=A, 80%–89%=B, 70%–79%=C, 60%–69%=D, 0%–59%=E.

Make-ups: Make-ups for exams will be given only in cases of illness, field trips or other unavoidable circumstances. You will need to provide written verification of the reason for your absence in advance and as soon as possible. If you are unexpectedly absent from an exam, contact me by phone or e-mail **that same day** and arrange to take a make-up. The make-up should occur *soon*, which typically means “before I return the exam”. Make-ups for other graded work will be given at my discretion. Asking for a make-up more than once makes it less likely that I will grant it.

Important Dates:

- i) Last day to Audit or Drop without a Grade: January 16th
- ii) Last day to Drop Course with a “W” Grade: April 17th

For more information on audits, drops, and/or “W” grades, please see the MSU Academic Bulletin/Catalog or visit murraystate.edu/academics/RegistrarsOffice/Registration/index.aspx

Academic honesty policy: All students must adhere to the Policy on Academic Honesty described in the current MSU Academic Bulletin/Catalog. Students may appeal decisions related to academic dishonesty by following the Academic Honesty Appeal Procedure described in the current MSU Academic Bulletin/Catalog.

Recording Notification: This course may utilize recordings that capture students' faces and/or voices. These recordings may be used for course review by enrolled students and/or instructors, and will not be shared with anyone not enrolled, teaching, or aiding in the instruction of the course. Any video capturing student faces and/or voices will be destroyed after all students have been issued a grade for the course.

This course may require the recording of students' faces and/or voices by the university and/or its applicable technology vendor for the purpose of compliance with the university's testing integrity protocol, requiring the use of Respondus Monitor and/or Lockdown Browser for exams and/or quizzes. These testing integrity protocols may make reasonable requests to demonstrate that your testing environment remains free of impermissible aids. If a 360° video capture or scan of a student's residential environment at the time of the test or exam is not permitted, students must make every attempt to complete exams at another space that is appropriate and relatively free from distractions, such as a public library or other public space.

Starfish: Your success is important! Murray State University uses Starfish to communicate with students about academic progress and success. Check your Murray State email regularly for notifications and alerts sent through the Starfish network. If you need help, you can “Raise Your Hand” in Starfish to send an alert. Log into your Starfish account through myGate to use this and other features.

Mental Health Resources: If you or someone you know is experiencing mental health concerns or could benefit from speaking with a counselor, there are free and confidential resources available from three separate sources:

Counseling Center (www.murraystate.edu/counselingcenter) offers free and confidential mental health counseling, offering both in-person and remote sessions for all enrolled students. C104 Oakley Applied Science, open 8:00-4:30 M-F, walk-in hours 9:00 to 2:00 M-F (when the University is open), 270-809-6851, msu.counselingcenter@murraystate.edu

Psychological Center (www.murraystate.edu/psychologicalcenter) offers free and confidential counseling services, as well as psychological evaluations. 401 Wells Hall, 270-809-2504.

TimelyCare (Available in Canvas, at timelycare.com/murraystate, or on the TimelyCare app) offers several free virtual services, including TalkNow, scheduled counseling appointments, health coaching, and on-demand yoga and meditation. Their services are available 24/7. In an emergency, you can also contact **Murray State Police** at 270-809-2222 or call the **24-hour crisis hotline** at 988.

Students with Disabilities: Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students with disabilities should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. Telephone: 270-809-2018 (Voice) 270-809- 5889 (TDD). Email: msu.studentdisabilities@murraystate.edu. The Office of Student Disability Services will work directly with professors regarding any specific accommodation needs that may be applicable to the particular classroom setting.

Non-Discrimination Policy Statement: Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, sex, gender identity, sexual orientation, religion, age, veteran status, or disability in employment or application for employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.

In particular and without limiting the preceding and pursuant to and consistent with the requirements of Title VI of the Civil Rights Act of 1964 and its regulations 34 CFR 100 et seq.; Section 504 of the Rehabilitation Act of 1973 and its regulations 34 CFR 104; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq., and its regulations 34 CFR 106 et seq; and the Age Discrimination Act of 1975 and its regulations 34 CFR 110, Murray State University does not discriminate on the basis of race, color, national origin, sex, handicap, or age in its educational programs and activities. This non-discrimination in education programs and activities extends to employment and admissions and to recruitment, financial aid, academic programs, student services, athletics, and housing. Murray State is required by Title IX and 34 CFR part 106 not to discriminate on the basis of sex and the prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. Examples of prohibited sexual harassment and sexual violence can be found in the “Policy Prohibiting Sexual Harassment.”

Inquiries concerning the application of these provisions may be referred to: 1. the Executive Director of the Office of Equal Opportunity and Title IX / Murray State University Title IX Coordinator, Murray State University, 103 Wells Hall, Murray, KY 42071. Telephone: 270-809-3155; Fax: 270-809-6887; TDD: 270-809-3361; Email: msu.titleix@murraystate.edu; or 2. the Assistant Secretary of the United States Department of Education, U.S. Department of Education, Office for Civil Rights, 400 Maryland Avenue, SW, Washington, D.C. 20202-1100; Telephone: 800-421-3481; Fax: 202-453-6012; TDD: 800-877-8339; Email: OCR@ed.gov.

For more information, contact the Title IX Coordinator and Executive Director of the Office of Equal Opportunity and Title IX, 103 Wells Hall, 270-809-3155 (voice), 270-809-3361 (TDD).