

# MATH 3753-101 : VECTOR SPACES

## FALL 2026

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### GENERAL COURSE INFORMATION

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#### INSTRUCTOR INFORMATION

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Instructor: Office: BO 122P

Office hours: Monday 1:30-3:20 PM,  
Wednesday 3:30-4:20 PM,  
Thursday 10:00 AM – 11:50 AM,  
Or by appointment

Office phone: 940-397-4441

E-mail: [sarah.cobb@msutexas.edu](mailto:sarah.cobb@msutexas.edu)

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#### CLASS MEETINGS

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Class meetings: dates, times: MWF 11:00-11:50 AM, Bolin 316

Exams: September 23, October 14, November 4, and December 2, in class

Final exam: Monday, December 7, 10:30 AM – 12:30 PM, Bolin 316

Proof Portfolio Due: Thursday, December 10, 5:00 PM

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#### COURSE DESCRIPTION

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A mathematically rigorous approach to Abstract Vector Spaces and Linear Transformations.

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#### PREREQUISITES

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MATH 1634 and 2753 with grades of C or better in each.

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#### TEXTBOOK & INSTRUCTIONAL MATERIALS

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There is no required text for this course. We'll refer to a variety of sources, all available free online.

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#### CALCULATOR

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A calculator is not required for this course. You may generally use a scientific (not graphing) calculator on exams, but you won't need one.

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#### GENERAL SUPPLIES

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You should arrive each day with a pen or pencil and paper. You will want to keep material for this course organized, including returned homework and occasional handouts.

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#### D2L LEARNING MANAGEMENT SYSTEM

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Additional materials needed will be posted or linked through D2L. Make sure that you check for updates regularly. I recommend downloading the Brightspace Pulse app to ensure you are receiving D2L communications.

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### ACADEMIC MISCONDUCT POLICY & PROCEDURES

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Any incident in which a student submits work for grading that does not reflect their own effort is considered academic dishonesty. This includes using sources (by paraphrase or direct quotation) without proper attribution; collaborating on work where collaboration is not authorized; use of sources on an assignment or test where those sources are not authorized; and turning in work completed by another person.

Cheating on any work in this course will result in no credit for that work. Egregious or repeated incidents will result in more serious consequences, such as a failing grade in the course or dismissal from your academic program. All incidents of academic misconduct will be reported as specified in your student handbook.

Please refer to the homework information sheet for guidance on allowable sources and collaboration on homework assignments.

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### CHANGES

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Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor. Changes will be announced during class meetings, posted on D2L, and/or sent to your university email address. Be sure that you are receiving messages through these channels.

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## ASSIGNMENTS, ASSESSMENTS, AND GRADING POLICIES

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### GRADING

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Your grade will be determined using the categories below:

| Grade Category        | Weight |
|-----------------------|--------|
| Homework              | 20%    |
| Unit Exams (4)        | 40%    |
| Proof Portfolio       | 15%    |
| Cumulative Final Exam | 25%    |

Your final letter grade will be based on the percentage earned. The table below shows the minimum percentages needed to guarantee a specific letter grade, although higher grades may be assigned at the instructor's discretion.

| Grade | Points        |
|-------|---------------|
| A     | At least 90%  |
| B     | At least 80%  |
| C     | At least 70%  |
| D     | At least 60%  |
| F     | Less than 60% |

The material in this course does not lend itself to a standard percentage scale, so there may be some adjustment as the course goes on. Expect additional guidance about interpretation of grades.

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### HOMEWORK

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Homework will be assigned regularly; generally an assignment will be due at the beginning of class every Wednesday, though this is likely to shift some throughout the semester. You should expect to spend a significant amount of time on each assignment, and you should plan to work on it on at least three or four different days, since coming back to a problem later is often more effective than working for an extended time.

Refer to the Homework Information Sheet (available on D2L) for additional guidelines on homework.

Occasional in-class activities or assigned work outside of regular homework may be counted as a portion of your homework grade.

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### LATE HOMEWORK

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Homework is due at the beginning of class on the due date. Homework turned in after this will be considered late. Homework may be turned in electronically as long as it is scanned (not photographed) and turned in as a single pdf document.

Late homework is accepted as follows: you have two penalty-free late days over the course of the semester. This can be two assignments turned in one day late or one assignment turned in two days late. This is intended to account for illness, unexpected circumstances, and all other reasons an assignment might be late—plan accordingly. Beyond those two days, an assignment will lose 25% of the earned points for every day it is late. The number of days late is computed by the number of whole or partial 24-hour periods that have passed since it was due.

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## PROOF PORTFOLIO

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Your proof portfolio for this course will consist of a collection of revised versions of proofs from homework assignments or tests. This is an opportunity for you to show your ability to create polished proofs when you take time and revise—the proofs should represent your best work.

Over the course of the semester, Dr. Cobb will maintain a list of what proofs may be revised for inclusion in the portfolio and guidelines for choosing proofs. There will also be an opportunity to ask Dr. Cobb for feedback on your proofs.

The proof portfolio will be due on Thursday, December 10, at 5:00 PM.

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## EXAMS

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The unit exams for this class are September 23, October 14, November 4, and December 2, during class time. There may be online, take-home, or extended time parts of some exams; information will be communicated closer to the deadline.

If you must miss an exam, please notify me by email at least one week ahead of the test date and arrange to take the test early. In the case of unexpected and unavoidable absences (such as hospitalization), you must let me know on the day of the test, and documentation may be required. At the instructor's discretion a missed exam may be made up, dropped from the final grade, replaced with your grade on the final exam, or counted as a zero. Clear and prompt communication is essential in the case of absence.

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## FINAL EXAM

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The final exam for this course is Monday December 7, 10:30 AM —12:30 PM, Bolin 316. It cannot be taken early or late for anything except an emergency. Please consult the finals schedule before planning end-of-semester travel, as scheduled travel is not an emergency and you will not be able to reschedule the exam.

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## RESOURCES

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### DROP-IN OFFICE HOURS

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Office hours are time that I have set aside to answer questions about the course or course material. You are welcome to drop in during the scheduled office hours, and you do not need an appointment. I am happy to answer questions about homework problems, quizzes and tests, study practices, grades, and other topics. These are intended to be a resource for you, and talking to me during office hours is a good first step if you find yourself struggling.

For advanced math courses such as this one, attending office hours is tremendously beneficial. Most tutors lack experience teaching this kind of material, and often struggle with it themselves. Online resources are likely to lead you wrong at least some of the time. Your professor, on the other hand, knows why particular problems were assigned, which techniques you already understand, and how your previous work has looked. Office hours should be a first resource when you struggle in this course.

If you are unable to attend scheduled office hours, you can email me ([sarah.cobb@msutexas.edu](mailto:sarah.cobb@msutexas.edu)) to set up an appointment at another time. In your email, please include your first and last name and some times that you'd be available. I am also willing to schedule virtual office hours, but it is more difficult to clearly communicate math remotely.

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### EMERGENCY AID RESOURCES FOR BASIC NEEDS

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Unexpected life circumstances can affect anyone. If you are experiencing challenges meeting basic needs—such as housing, utilities, food, transportation, healthcare, technology, textbooks or other life necessities, resources may be available to help. Visit the [Student Emergency Support and Resources webpage](#) to learn more, and explore emergency support opportunities through MSU and how to access them. For additional information, please contact the Office of Student Affairs: Clark Student Center #108, (940) 397-7500, [student.affairs@mstutexas.edu](mailto:student.affairs@mstutexas.edu).

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### MOFFETT LIBRARY

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Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this [Moffett Library webpage](#) to explore these resources and learn how to best utilize the library.

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## COURSE POLICIES AND INFORMATION

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### ATTENDANCE

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Attendance in class is essential for your learning and is therefore required. I do not generally distinguish between excused and unexcused absences, since it is not my role to decide the relative importance of competing priorities in your life; attending class should be a high priority, but it isn't (and shouldn't be) your only priority. The policy below is intended to be flexible enough to allow for minor illness, emergencies for those close to you, transportation difficulties, and other necessary absences. If there are circumstances that cause you to miss a significant amount of class, please communicate promptly with me about it and I will work with you on a plan to stay caught up on course material and remain enrolled in the class.

You are expected to attend every class, in person, if at all possible. This includes arriving on time; staying to the end; being prepared; participating in class; and behaving respectfully. If you must miss class, please consult a classmate to find out what you missed.

At the instructor's discretion, students who miss more than six classes or portions of classes for reasons other than university-excused absences may be dropped from the course with a grade of F.

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### RECORDING CLASSES

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Recording classes is generally prohibited without the professor's explicit permission. Such recordings, when permitted, are for personal use only and may not be uploaded to the internet or otherwise shared, transmitted, or published without the professor's prior consent. Some faculty may not permit recordings of their classes. When it is feasible and appropriate, students may record classes to accommodate disabilities under the Americans With Disabilities Act, with prior approval of Disability Support Services. Such recordings may not be uploaded to the internet or otherwise shared, transmitted, or published.

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### SERVICES FOR STUDENTS WITH DISABILITIES

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In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

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### STUDENT HANDBOOK

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This course will abide by all policies in the [Student Handbook](#). Please make sure you are familiar with its contents.