South Plains College

MATH 2318 – Linear Algebra

Spring 2026, Mondays and Wednesdays 1:00 p.m. – 2:15 p.m. in Math Room 123

Department: Mathematics, Engineering, and Computer Science
Discipline: Mathematics
Course Number: MATH 2318
Course Title: Linear Algebra
Available Formats: Conventional
Campuses: Levelland. This class meets face-to-face on the Levelland campus in the Mathematics Building Room 123.

Course Description: Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 2414.

Credit: 3 **Lecture:** 3 **Lab:** 0

Instructor: Leah Chenault
Office: Math and Engineering Building, Office 106
Office Telephone: (806)716-2740
Email: lchenault@southplainscollege.edu (preferred method of contact)

Office Hours: As listed below or by appointment. I will be in my office on the Levelland campus during face to face (F2F) times listed below if you wish to meet in person. I will be online (via Zoom) during the office hours listed as virtual. You are welcome to pop in and out of my virtual office hours during that virtual time without scheduling a meeting. I will post the virtual office hour information/invite on Blackboard if you wish to join. If you do join virtually and I am helping someone else, please be patient and wait your turn. *If you need to schedule a time to meet outside of the office hours below, please email me to set up a time.*

Monday	Tuesday	Wednesday	Thursday	Friday
F2F: 9:30 a.m. – 10:45 a.m.	F2F: 12:30 p.m. - 1:45 p.m.	F2F: 9:30 a.m. – 10:45 a.m.	F2F: 12:30 p.m. - 1:45 p.m.	Virtual and F2F: 8:00 a.m. –11:00 a.m.

Email Correspondence: Our primary forms of written communication outside of the classroom will be Blackboard announcements as well as email. If you have a private question that you want to ask outside of class, email is the preferred method of contact. You are expected to use your SPC email address to do so. Due to privacy concerns, I will not reply to an email from you from a different email address. Please give me up to 24 hours to respond to questions sent via email during the work week. Starting on Friday at noon and throughout the weekend, please give me up to 48 hours to respond to an email. If you email about a specific homework question, please include a picture of the question and the work that you have tried in the email. If you need/want to set up a meeting because you don't feel your question can be answered adequately via email, either come by during office hours or email me to set up a meeting time (meeting can be either virtual or face-to-face).

Textbook: A textbook is not required; however, textbook references for this course may be any of the following:

- https://sites.ualberta.ca/~jsylvest/books/pdf/JSylvestre-DiscoverLinearAlgebra1-2023-Print.pdf
- Larson, R. (2017). Elementary Linear Algebra, Eighth ed. Boston, MA: Cengage Learning. ISBN 978-1-305-65800-4.
- Larson, R. (2013). Elementary Linear Algebra, Seventh ed. Boston, MA: Brooks/Cole. ISBN 978-1-133-11087-3.
- Larson, R. & Falvo, D. C. (2009). Elementary Linear Algebra, Sixth ed. Boston, MA: Houghton Mifflin Company. ISBN 0-618-78376-8.
- Larson, R., Edwards, B. H. & Falvo, D. C. (2004). Elementary Linear Algebra, Fifth ed. Boston, MA:Houghton Mifflin Company. ISBN 0-618-33567-6

Supplies: Please bring the following to class with you each day:

- Required: A calculator capable of matrix algebra (such as a TI-83, TI-84, or TI-89). Calculator on cell phones or other electronic devices are discouraged and will not be allowed during testing.
- Required: Notebook/copy paper, graph paper (available to print on blackboard), pencils, and erasers.
- Required: The Gradescope app for submitting assignments.
- Recommended: Printed notes handouts to fill out as we work through the notes in class.
- Recommended: Large 3-ring binder. Since this course does not have a textbook, I recommend keeping all notes and assignment in order in a binder. If done correctly, this binder can serve as a course book and is a great resource to have.

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Be able to solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion.
2. Be able to carry out matrix operations, including inverses and determinants.
3. Demonstrate understanding of the concepts of vector space and subspace.
4. Demonstrate understanding of linear independence, span, and basis.
5. Be able to determine eigenvalues and eigenvectors and solve problems involving eigenvalues.
6. Apply principles of matrix algebra to linear transformations.
7. Demonstrate application of inner products and associated norms.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors. Your grade in this course will come from assignments, quizzes, binder checks and exams.

Assignments/Homework:

- Homework will be assigned at each class. Work the problems early enough to seek help if needed.
- Homework is due at the beginning of the next class. Late homework will not be accepted. If you are going to be absent, I will accept your homework via email as long as that email is time-stamped before our scheduled class time and you give me a valid reason for your absence. If the email does not have those two things, you will receive a zero on the assignment.
- Late assignments are not accepted under any circumstances. If an assignment is turned in late, it will be a zero.
- Your assignment grade will be calculated as follows:

100%	Completed assignment with all work shown. Selected exercises found accurate.
95%	Completed assignment with all work shown. Missing accuracy on one selected exercise.
85%	Completed assignment with all work shown. Missing accuracy on a few selected exercises.
75%	Completed assignment with all work shown. Missing accuracy on several selected exercises.
50%	Assignment incomplete and/or no work shown.
0%	No assignment submitted.

- To receive full credit on problems, you must show work that is legible and it must make sense.
- Keys to the homework are posted on Blackboard so that you can check your answers. Please remember that when I grade, not only will I grade the answer, I am grading your work that leads to that answer.
- Assignments will be submitted using the Gradescope app.
- At the end of the semester, the lowest 4 daily assignment/quiz grades will be dropped.

Quizzes:

- Quizzes may be given at any point.
- Most, if not all, quizzes will be pop-quizzes so you will need to be prepared every class period.
- You are not allowed to have any resources out on your desk during quizzes.
- Quizzes will be graded by work and percent accuracy for a maximum grade of 100%.
- Make-up quizzes will NOT be given. If you miss a quiz, your grade on the quiz will be a zero.

Exams:

- 3 Unit Exams and a Final Exam
- Linear Algebra is cumulative so success on one exam will depend on how well you know not only the new material but also the material from previous tests.
- Leaving the class during an exam is not permitted.
- The Final Exam is comprehensive.
- There are no exemptions for the final.
- If you are going to miss an exam, contact your instructor immediately (preferably prior to the exam). Students are only allowed to take an exam outside of the scheduled testing time under extreme and documented circumstances. The instructor will determine if an exam given outside of our regular testing time is warranted based upon the documentation provided by the student.
- If your grade on your final exam is higher than one of the unit tests, I will replace that unit test grade with your final exam grade.
- All electronic communication devices (phones, smart watches, headphones etc) must be off and put away during exams. Failure to do so will result in a grade of zero on the exam.

Grading Formula: Class attendance and a strong work ethic do not guarantee a passing grade. However, these two things are extremely important and do increase the likelihood of passing. The final responsibility for learning lies with the student. The final letter grade for this course will be based on the following:

- Assignment//Quizzes/Binder Average.....15%
- Unit 1 Exam (Sections 1-4)……. 20%
- Unit 2 Exam (Sections 5-8)……..…20%
- Unit 3 Exam (Sections 9-14)……20%
- Final Exam (Sections 1-19).....25%

Final Grade Determination: A 90+ B 80-89 C 70-79 D 60-69 F 59 or below

Showing Work: To receive full credit on an assignment, quiz or exam, you must show all work that leads to your answer(s). The work must be legible, make sense and be easy to follow. All work and answers must be handwritten.

Reviewing Grades on Blackboard: After I grade your exams and daily assignments, I will post that exam/assignment grade to Blackboard. Therefore, you should be able to log into Blackboard to see a current course average.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If you fail to complete and turn in an assignment (***for any reason***) by the specified date and time, then it will count against your 80%. If your number of absences goes above **six**, you may be dropped from the class with either an X (if you exceed that number before the drop date) or an F (if you exceed that number after the drop date). Class attendance may be taken at any time during the class period, so please do not be late or leave early. Leaving early and/or being tardy will be considered ½ absence.

Face-to-Face Course Cancellation: In the event that our face-to-face class is cancelled (due to instructor illness, weather, etc.), I will send out a Blackboard announcement stating what you are responsible for doing online for class that day. Please make sure you check Blackboard and your email.

Academic Integrity (Plagiarism and Cheating Policy): "Complete honesty is required of the student in the presentation of any and all phases of course work." *(SPC General Catalog)*.

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension. *(SPC General Catalog)*

Plagiarism and cheating are not tolerated in this course. Under the policies of South Plains College, punishment for cheating may include no credit (failing) on the submission, quiz, exam, and/or the course. The student may also be subject to other disciplinary actions outlined in the South Plains College Student Code of Conduct.

Resources:

- Blackboard! Outside of the classroom, Blackboard is the hub of the class. The course syllabus, calendar, gradebook, notes handouts, notes videos and assignments will be available on Blackboard.
- I am available to help you! You may visit with me (either face to face or virtually) during office hours. Also, feel free to email me questions at lchenault@southplainscollege.edu. When you email me, please give me up to 24 hours to respond. My response will be faster during the work week than it will be on weekends. When emailing about a specific homework problem, be sure to include a picture of the problem as well as any work you have tried.
- Peer tutoring is available via SPC. However, due to the fact this is a sophomore level math course, please know that you're the best way to get peer tutoring is to form a study group with the students in the room with you.
- You also have 180 FREE minutes of online tutoring with a company named Brainfuse each week. Your hours reset every Monday morning. Log into Blackboard, click on the "Tools" option from the left-hand menu bar. Click on the Brainfuse Live Tutoring link and you will automatically be logged in for free tutoring. You may access tutor.com tutors during the following times:
    - Monday – Thursday: 8:00 p.m. – 8:00 a.m.
    - 6:00 p.m. Friday – 8:00 a.m. Monday

Withdrawal Policy: As required by Texas Education Code Section 51.907, all new students who enroll in a Texas public institution of higher education for the first time beginning with the 2007 fall semester and thereafter, are limited to six course drops throughout their entire undergraduate career. All course drops, including those initiated by students or faculty and any course a transfer student has dropped at another institution, automatically count toward the limit. After six grades of W are received, students must receive grades of A, B, C, D, or F in all courses. There are other exemptions from the six-drop limit and students should consult with a Counselor/Educational Planner before they drop courses to determine these exemptions. Students receiving financial aid must get in touch with the Financial Aid Office before withdrawing from a course. It is the student's responsibility to drop. Excessive absences will result in an administrative withdrawal with a Grade of X or F. If you plan to withdraw, please consult with the instructor immediately. **Note:The last day to drop with a grade of W is Thursday, April 30, 2026.**

Classroom Etiquette:

- Students are expected to be respectful of their fellow classmates and maintain a classroom environment that is conducive to learning. Refrain from using offensive language, talking loudly or off-topic, working on outside assignments, or otherwise being disruptive in class.
- NO tobacco use of any form is allowed in the classroom.
- Food and/or drinks are NOT allowed in the classroom.
- Habitually disruptive students will be asked to leave.
- All electronic communication devices are to be silenced and put away during class unless you are specifically told otherwise by your instructor. You will be given one verbal warning, after which you will be asked to leave.
- If I have to ask you to leave class for any reason (class disruption, cell phone usage etc), you will receive a zero for the day's assignment.

Succeeding in a Math Class:

- Attend class every class period that you are assigned to be here.
- Check your SPC email and Blackboard at least once per day.
- Be mentally present! Pay attention, take notes and ask questions during class.
- Memorize required material as soon as you are asked to do so.
- Plan ahead. Do homework early enough before the due date that you will have time to ask questions or seek help if you need it.
- For every hour spent in class (this class is roughly 3 classroom hours per week), you should expect to spend 2-3 hours outside of class working on this course. This includes time spent on homework and studying for exams. Math takes practice and repetition. Be ready to put in that time and work.
- Get to know at least one other person in class and exchange contact information.
- Get help as soon as you feel yourself falling behind! Don't wait!

Student Code of Conduct Policy: Any successful learning experience requires mutual respect from the student and the instructor. Neither the instructor nor the student should be subject to others' rude, disruptive, intimidating, aggressive, or demeaning behavior**.** Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, please visit https://www.southplainscollege.edu/syllabusstatements/.

South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: https://www.southplainscollege.edu/emergency/covid19-faq.php.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester. Any changes will be announced in class and/or via a Blackboard announcement.

Spring 2026 Schedule for MATH 2318.001
Monday and Wednesday from 1:00 p.m. – 2:15 p.m. in Math Room 123

Week #	Day #	Date	Due at Beginning of Class	Topic for the Day's Class	Work to Be Done After Class
1	1	M – Jan 12th		Course Intro (Syllabus and Blackboard) Lesson 1: Linear Systems	HW 1
	2	W – Jan 14th	Syllabus Form; HW 1	Lesson 2: Gauss-Jordan Elimination	HW 2
2	3	M – Jan 19th		**No School – MLK Holiday**	
	4	W – Jan 21st	HW 2	Lesson 3: Applications of Linear Systems Begin Lesson 4: Summations	HW 3 and begin HW 4
3	5	M – Jan 26th	HW 3	Lesson 4: Summations	HW 4
	6	W – Jan 28th	HW 4	Prepare for Unit 1 Exam	Study for the Unit 1 Exam
4	7	M – Feb 2nd		**Unit 1 Exam**	
	8	W – Feb 4th		Lesson 5: Matrix Operations	HW 5
5	9	M – Feb 9th	HW 5	Lesson 6: Special Matrices	HW 6
	10	W – Feb 11th	HW 6	Lesson 7: Determinants	HW 7
6	11	M – Feb 16th	HW 7	Lesson 8: Special Matrices	HW 8
	12	W – Feb 18th	HW 8	Prepare for the Unit 2 Exam Begin Lesson 9: Vector Spaces	Study for the Unit 2 Exam HW 9
7	13	M – Feb 23rd		**Unit 2 Exam**	
	14	W – Feb 25th		Continuing Lesson 9: Vector Spaces	HW 9
8	15	M – March 2nd	HW 9	Lesson 10: Spanning Sets and Linear Independence	HW 10
	16	W – March 4th	HW 10	Lesson 11: Basis and Dimension	HW 11
9	17	M – March 9th	HW 11	Lesson 12: Rank	HW 12
	18	W – March 11th	HW 12	Lesson 13: Change of Basis	HW 13
10	19	M – March 23rd	HW 13	Lesson 14: Vectors	HW 14
	20	W – March 25th		Continuing Lesson 14: Vectors	HW 14
11	21	M – March 30th	HW 14	Prepare for the Unit 3 Exam	Study for the Unit 3 Exam
	22	W – Apr 1st		**Unit 3 Exam**	
12	23	M – Apr 6th		Lesson 15: Linear Transformations	HW 15
	24	W – Apr 8th		Continuing Lesson 15: Linear Transformations	HW 15
13	25	M – Apr 13th	HW 15	Lesson 16: Transition Matrices and Similarity	HW 16
	26	W – Apr 15th	HW 16	Lesson 17: Eigenvalues and Eigenvectors	HW 17

14	27	M – Apr 20th	HW 17	Lesson 18: Diagonalization	HW 18
	28	W – Apr 22nd		Continuing Lesson 18: Diagonalization Begin Lesson 19: Applications of Eigenvalues and Eigenvectors	HW 18 HW 19
15	29	M – Apr 27th	HW 18	Continue Lesson 19: Applications of Eigenvalues and Eigenvectors	HW 19 Study for the Final Exam
	30	W – Apr 29th	HW 19	Prepare for Final Exam	Study for the Final Exam
16	31	W – May 6th		**Final Exam** – The comprehensive final exam will be from 10:15 a.m. to 12:15 p.m. on Wednesday, May 6th.	

Note: *This schedule is tentative and may be altered as deemed necessary by the instructor. If there are any changes, they will be announced* ***in class and/or via a Blackboard announcement.***

Personal Info and Syllabus Receipt

Printed Name: _____ Age: _____

High School Attended: _____ Current City: _____

Major: _____

1. List the college-level math courses that you have successfully completed.

2. Consider your weekly schedule (school, work, personal). Write the times in which you plan to work on this course during the week. You must account for at least 6 hours outside of our class time.

3. Below, please write anything else you feel I should know about you that pertains to this class.

Syllabus Receipt

I certify that I have read and understood the class syllabus for MATH 2318-001, which is being taught in the spring semester of 2026.

_____ _____

Signature Date