**South Plains College**
**Common Course Syllabus: Linear Algebra (MATH 2318)**
**Fall 2025**

**Department:** Mathematics, Engineering, and Computer Science
**Discipline:** Mathematics
**Course Number:** MATH 2318
**Section:** 001 (Mondays and Wednesdays, 1:00-2:15pm, Mathematics-Engineering building, room 108)
**Course Title:** Linear Algebra
**Available Formats:** conventional/flex
**Campuses:** Levelland. This class meets face-to-face on the Levelland campus in the Mathematics-Engineering building, room 108.

**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 eigenvectors; and applications in science and engineering.

**Prerequisite:** Successful completion with a grade of 'C' or better in MATH 2414 (Calculus 2).

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

**Instructor:** Jay Driver
**Telephone:** (806) 716-2780
**Office:** Math and Engineering building, office 114
**Email:** The instructor may be emailed through Blackboard or at jdriver@southplainscollege.edu.

**Email Policy:** All students at South Plains College are assigned a standardized SPC e-mail account. Although personal email addresses will continue to be collected, the assigned SPC e-mail account will be used as the official channel of communication for South Plains College. The Student Correspondence Policy can be found at www.southplainscollege.edu. To access the SPC student e-mail account, log in to portal.office.com. (Copied from SPC Student Guide)

- Since all students have an assigned SPC email, the instructor will only acknowledge, respond, and send emails to your assigned SPC email. This ensures all correspondence from the instructor is received by the intended recipient.

**Virtual/Face-to-Face Office Hours:**

- Mondays and Wednesdays, 2:30-3:30pm;
- Tuesdays and Thursdays, 10:45am-12:00pm, 1:30-2:30pm;
- Fridays, 10:00-11:30am.
- And by appointment (contact me).

**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:** You will need a calculator capable of matrix algebra (a TI-graphing calculator such as the TI-84 works well) and a minimal supply of graph paper. A TI-89 calculator is acceptable. Calculators on cell phones or other electronic devices are strongly discouraged and will not be allowed during testing without permission. Make certain you have access to a scanner or scanning app. Gradescope is the recommended app.

**Blackboard:** Blackboard is the online course management system that will be utilized for this course. This course is supplemented online, so all access to course information and your instructor is through the Internet. This course syllabus, as well as all course materials can be accessed through Blackboard. Login at https://southplainscollege.blackboard.com/. The user name and password should be the same as the MySPC and SPC email.

User name: first initial, last name, and last 4 digits of the Student ID
Password: Original CampusConnect Pin No. (found on SPC acceptance letter)

Questions regarding Blackboard support may be emailed to blackboard@southplainscollege.edu or by telephone to 806-716-2180.

**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:** Pre- and post-test questions (assignments, quizzes, and major exams) will be used to determine the extent of improvement that the students have gained during the semester.

**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 the student has more than six (6) absences or missed assignments, the instructor may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student cannot receive an X, the instructor will assign an F.

**Course Evaluation:** There will be departmental final exam questions given by all instructors. Assignments and quizzes will count for 20% of the final grade, while exams count for 80% of the final grade. Expect many assignments, a few quizzes, and 4 scheduled exams throughout the course. Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale: A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

- Assignments/Quizzes = 20%
- Exam 1 (covering Assignments 1-4) = 15%
- Exam 2 (covering Assignments 5-8) = 20%
- Exam 3 (covering Assignments 9-14) = 20%
- Exam 4 (covering Assignments 15-19) = 25%.

**Assignments and Exams:** The following is a sequential list of the assignments and exams.

1. Linear Systems
2. Gauss-Jordan Elimination
3. Applications of Linear Systems
4. Summations

Exam 1 (15%)

5. Matrix Operations
6. Special Matrices
7. Determinants
8. Applications of Determinants

Exam 2 (20%)

9. Vector Spaces
10. Linear Independence
11. Basis & Dimension
12. Rank
13. Change of Basis
14. Vectors

Exam 3 (20%)

15. Linear Transformations
16. Transition Matrices & Similarity
17. Eigenvalues and eigenvectors
18. Diagonalization
19. Applications of Eigenvalues

Exam 4 (25%)

**Assignment/Quiz Format and Policy:**

- Assignments are given after each lesson and are to be completed outside of the class meeting time. In the event of an absence, make certain to get assignment downloaded from Blackboard, worked, and submitted in Gradescope by the beginning of the next class meeting. Late assignments are **not** accepted. Make certain to complete the assignments with enough time to get help, if needed. At the end of the semester, the lowest four daily grades (assignment, quiz) will be dropped.
- With each exercise of the assignment show all necessary work and clearly mark your answer.
- Check your answers in Blackboard to make certain you are practicing the exercises correctly.
- Write your name at the top of each page of your work.
- Submit assignments in Gradescope as a single pdf file, preferably using the Gradescope app.
- The following grading rubric is used for each assignment submission.

| | |
|---|---|
| 100% | Completed assignment; all work shown; selected exercises found accurate |
| 95% | Completed assignment; all work shown; missing accuracy on selected exercise |
| 85% | Completed assignment; all work shown; missing accuracy on a few selected exercises |
| 75% | Completed assignment; all work shown; missing accuracy on several selected exercises |
| 50% | Assignment incomplete and/or no work shown |
| 0% | No assignment submitted |

**Exam Format and Policy:** There are four (4) units of study in this course. At the conclusion of each unit is a face-to-face examination on specified Wednesdays, 1:00-2:15pm and the final exam is schedule for Wednesday, Dec 10, 10:15am-12:15pm.

**SPC Tutors**
Tutoring is FREE for all currently enrolled students. Make an appointment or drop-in for help at any SPC location or online! Visit the link below to learn more about how to book an appointment, view the tutoring schedule, and view tutoring locations.
http://www.southplainscollege.edu/exploreprograms/artsandsciences/teacheredtutoring.php

**Brainfuse Live Tutoring**
You also have 180 FREE minutes of tutoring with Brainfuse Live Tutoring each week, and your hours reset every Monday morning. Log into Blackboard, click on the tools option from the left-hand menu bar. Click on the Brainfuse link and you will automatically be logged in for free tutoring. You may access Brainfuse tutors during the following times:

Monday – Thursday: 8pm-8am
6pm Friday – 8am Monday morning

For questions regarding tutoring, please email tutoring@southplainscollege.edu or call 806-716-2241.

**Academic Integrity (Plagiarism and Cheating Policy):** "Complete honesty is required of the student in the presentation of any and all phases of course work. This idea applies to quizzes of whatever length as well to final examinations, to daily reports, and to term papers" *(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 assignment, quiz, exam, or the course.

**Student Code of Conduct Policy**: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning**.** 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.

**COVID Response:** South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: COVID Response (southplainscollege.edu).

**Diversity, disabilities, non-discrimination, Title IX Pregnancy Accommodations, Campus Concealed Carry:** South Plains College policies concerning diversity, disabilities, non-discrimination, Title IX Pregnancy Accommodations, and Campus Concealed Carry Statements can be found here: Syllabus Statements (southplainscollege.edu)

*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*.

**Tentative Course Calendar:** Below is a calendar view of assignment and exam due dates and times.

| Day (Mon/Wed), Date | What is due before arriving to class that day? | Topic(s) to be discussed that day | Work to be done? |
|---|---|---|---|
| Mon, Aug 25 | | Course Introduction<br>Lsn1: Linear Systems (a review lesson from previous math courses) | Assignment 1 |
| Wed, Aug 27 | Assignment 1 | Lsn2: Gauss-Jordan Elimination and begin Lsn3: Applications of Linear Systems | Assignment 2 |
| Mon, Sep 1 | <---------- *Labor Day holiday* ----------> | | |
| Wed, Sep 3 | Assignment 2 | Continue with Lsn3: Applications of Linear Systems and begin Lsn4: Summations | Assignments 3 and 4 |
| Mon, Sep 8 | Assignment 3 and most of Assignment 4 | Finish Lesson 4 and preparation for Exam 1 | Study for Exam 1 |
| Wed, Sep 10 | | **Exam 1** | |
| Mon, Sep 15 | | Lsn5: Matrix Operations | Assignment 5 |
| Wed, Sep 17 | Assignment 5 | Lsn6: Special Matrices | Assignment 6 |
| Mon, Sep 22 | Assignment 6 | Lsn7: Determinants | Assignment 7 |
| Wed, Sep 24 | | Lsn8: Applications of Determinants | Assignment 8 |
| Mon, Sep 29 | Assignment 7 and most of Assignment 8 | Finish Lesson 8 and preparation for Exam 2 | Study for Exam 2 |
| Wed, Oct 1 | | **Exam 2** | |
| Mon, Oct 6 | | Lsn9: Vector Spaces | Assignment 9 |
| Wed, Oct 8 | | Continue with Lsn9: Vector Spaces | Assignment 9 |
| Mon, Oct 13 | Assignment 9 | Lsn10: Linear Independence | Assignment 10 |
| Wed, Oct 15 | Assignment 10 | Lsn11: Basis & Dimension | Assignment 11 |
| Fri, Oct 17 | <---------- *Fall Break (SPC is closed)* ----------> | | |
| Mon, Oct 20 | Assignment 11 | Lsn12: Rank | Assignment 12 |
| Wed, Oct 22 | Assignment 12 | Lsn13: Change of Basis | Assignment 13 |
| Mon, Oct 27 | Assignment 13 | Lsn14: Vectors | Assignment 14 |
| Wed, Oct 29 | | Continue with Lsn14: Vectors | Assignment 14 |
| Mon, Nov 3 | Assignment 14 | Prepare for Exam 3 | Study for Exam 3 |
| Wed, Nov 5 | | **Exam 3** | |
| Mon, Nov 10 | | Begin Lsn15: Linear Transformations | Assignment 15 |
| Wed, Nov 12 | | Finish Lsn15: Linear Transformations | Assignment 15 |
| Mon, Nov 17 | Assignment 15 | Lsn16: Transition Matrices & Similarity | Assignment 16 |
| Wed, Nov 19 | Assignment 16 | Lsn17: Eigenvalues and Eigenvectors | Assignment 17 |
| Mon, Nov 24 | Assignment 17 | Lsn18: Diagonalization | Assignment 18 |
| Wed, Nov 26 | <---------- *Thanksgiving holiday* ----------> | | |
| Mon, Dec 1 | Assignment 18 | Lsn19: Applications of Eigenvalues | Assignment 19 |
| Wed, Dec 3 | Assignment 19 | Prepare for Exam 4 | Study for Exam 4 |
| Wed, Dec 10 | | **Exam 4**<br>This exam is the cumulative final exam that will be from 10:15am-12:15pm in M108. | Final Exam |