

South Plains College
Mathematics Department
Linear Algebra – MATH 2318
Course Syllabus
Spring 2018

Instructor: Jay Driver
Office: M114 (mathematics building)
Telephone: (806) 716-2780
Email: jdriver@southplainscollege.edu

Office Hours: MW 12:45-1:15pm, 2:00-2:30pm
TR 1:30-3:00pm
F 9:00am-12:00pm
And by appointment!

Course Description: MATH 2318. LINEAR ALGEBRA. (3:3:0) Prerequisite: MATH 2413.
This course is a survey of finite dimensional vector spaces, linear transformations and matrices, eigenvalues and eigenvectors. (copied from the current SPC catalog)

Course Objectives: Successful completion of this course should reflect mastery of the following objectives.

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

Textbook: Textbook references for this course may be any one of the following:

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

Attendance: Attendance and effort are the most important activities for success in this course. Class attendance may be taken at any time during the class period, so please do not arrive late or leave early. You may be dropped from this course with a grade of X or F if you are absent four consecutive classes or if you exceed six absences throughout the semester. Be on time and silence any cell phones before entering the classroom.

Assignments & Grading: Homework assignments will be made at each class meeting. Quizzes may be administered at any time. Keep all class materials (notes, handouts, homework, quizzes, and exams) organized in a notebook (3-ring binder). These materials are subject to be turned in for grading at any time. Please make certain all materials accompany you to each class meeting. No late assignments will be accepted. Daily work (homework, quizzes, notebook) will count for 20% of the final grade, while all exams count for 80% of the final grade. Expect four major exams (15% each) throughout the course and a cumulative final exam (20%) at the end of 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%).

Format for submitting assignments:

1. Write the problem.
2. Show all necessary work.
3. Clearly mark your answer.
4. Check your answers on Blackboard to make certain you are practicing correctly.

Blackboard: Blackboard is the online course management system that will be utilized for this course. This course syllabus, as well as any class handouts 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.

Supplies: You will need a calculator capable of matrix algebra (a TI-graphing calculator such as the TI-84 works well), a minimal supply of graph paper, and a 3-ring binder. Calculators on cell phones or other electronic devices are strongly discouraged and will not be allowed during testing without permission.

Disability: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College -1401 College Avenue, Box 5, Levelland, TX 79336, 806-894-9611.

Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College 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 South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at: (http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php).

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

Linear Algebra Tentative Course Outline

MATH 2318.001 (TR 11:00 – 12:15pm)

Spring 2018

Week	Day	Date	Lesson Topic
1	Tuesday	January 16	<i>Assignment 1: Linear Systems</i>
	Thursday	January 18	<i>Assignment 2: Gauss-Jordan Elimination (GJE)</i>
2	Tuesday	January 23	<i>Assignment 3: Applications of Linear Systems</i>
	Thursday	January 25	<i>Assignment 4: Summations</i>
3	Tuesday	January 30	<i>Assignment 5: Matrix Operations & Properties</i>
	Thursday	February 1	<i>Assignment 6: Matlab #1</i>
4	Tuesday	February 6	Exam 1 (15%)
	Thursday	February 8	<i>Assignment 7: Matrix Inverses</i>
5	Tuesday	February 13	<i>Assignment 8: Special Matrices</i>
	Thursday	February 15	<i>Assignment 9: Determinants</i>
6	Tuesday	February 20	<i>Assignment 10: Determinant Properties</i>
	Thursday	February 22	<i>Assignment 11: Determinant Applications</i>
7	Tuesday	February 27	Exam 2 (15%)
	Thursday	March 1	<i>Assignment 12a: Vector Spaces (Part 1 of 2)</i>
8	Tuesday	March 6	<i>Assignment 12b: Vector Spaces (Part 2 of 2)</i>
	Thursday	March 8	<i>Assignment 13: Linear Independence</i>
Monday-Friday, March 12-16			<i>South Plains College Spring Break</i>
9	Tuesday	March 20	<i>Assignment 14: Basis / Dimension</i>
	Thursday	March 22	<i>Assignment 15 Rank / Change of Basis</i>
10	Tuesday	March 27	<i>Assignment 16 Vector Operations part 1 of 2</i>
	Thursday	March 29	<i>Assignment 17 Vector Operations part 2 of 2</i>
11	Monday	April 2	<i>Easter Holiday</i>
	Tuesday	April 3	<i>Assignment 18: Matlab #2</i>
	Thursday	April 5	Exam 3 (15%)
12	Tuesday	April 10	<i>Assignment 19: Linear Transformations & Matrices of Linear Transformations</i>
	Thursday	April 12	<i>Assignment 20: Transition Matrices & Similarity</i>
13	Tuesday	April 17	<i>Assignment 21: Eigenvalues / Eigenvectors</i>
	Thursday	April 19	<i>Assignment 22: Diagonalization & Orthogonal Diagonalization</i>
14	Tuesday	April 24	Exam 4 (15%)
	Thursday	April 26	<i>Assignment 23a: Applications of Eigenvalues and Eigenvectors (Part 1 of 2)</i> <i>Last day to drop a class at SPC</i>
15	Tuesday	May 1	<i>Assignment 23b: Applications of Eigenvalues and Eigenvectors (Part 2 of 2)</i>
	Thursday	May 3	<i>Assignment 24: Review for comprehensive final exam</i>
16	Tuesday	May 8	Final Exam (20%) from 10:15am-12:15pm