

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

**Instructor:** Jay Driver  
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**Office Hours:** MW 3:00-4:00pm  
TR 11:00am-12:00pm, 3:05-3:35pm  
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 three consecutive classes or if you exceed five 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 all assignments:

1. Write the problem on your own paper.
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](mailto: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](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 (MW 11:00 – 12:15pm)

Fall 2018

Week	Day	Date	Lesson Topic
1	Mon	Aug 27	<i>Assignment 1: Linear Systems</i>
	Wed	Aug 29	<i>Assignment 2: Gauss-Jordan Elimination (GJE)</i>
2	Mon	Sep 3	<i>Labor Day Holiday</i>
	Wed	Sep 5	<i>Assignment 3: Applications of Linear Systems</i>
3	Mon	Sep 10	<i>Assignment 4: Summations</i>
	Wed	Sep 12	<i>Assignment 5: Matrix Operations &amp; Properties</i>
4	Mon	Sep 17	<i>Assignment 6: Matlab #1</i>
	Wed	Sep 19	<b>Exam 1 (15%)</b>
5	Mon	Sep 24	<i>Assignment 7: Matrix Inverses</i>
	Wed	Sep 26	<i>Assignment 8: Special Matrices</i>
6	Mon	Oct 1	<i>Assignment 9: Determinants</i>
	Wed	Oct 3	<i>Assignment 10: Determinant Properties</i>
7	Mon	Oct 8	<i>Assignment 11: Determinant Applications</i>
	Wed	Oct 10	<b>Exam 2 (15%)</b>
	Fri	Oct 12	<i>SPC Fall Break (all offices closed)</i>
8	Mon	Oct 15	<i>Assignment 12: Vector Spaces</i>
	Wed	Oct 17	<i>Assignment 13: Linear Independence</i>
9	Mon	Oct 22	<i>Assignment 14: Basis / Dimension</i>
	Wed	Oct 24	<i>Assignment 15 Rank / Change of Basis</i>
10	Mon	Oct 29	<i>Assignment 16 Vector Operations part 1 of 2</i>
	Wed	Oct 31	<i>Assignment 17 Vector Operations part 2 of 2</i>
11	Mon	Nov 5	<i>Assignment 18: Matlab #2</i>
	Wed	Nov 7	<b>Exam 3 (15%)</b>
12	Mon	Nov 12	<i>Assignment 19: Linear Transformations &amp; Matrices of Linear Transformations</i> <i>Online Registration Opens for Winter and Spring Semesters</i>
	Wed	Nov 14	<i>Assignment 20: Transition Matrices &amp; Similarity</i>
	Thur	Nov 15	<i>Last day to drop a class at SPC</i>
13	Mon	Nov 19	<i>Assignment 21: Eigenvalues / Eigenvectors</i>
	Wed-Fri	Nov 21-23	<i>Thanksgiving holiday</i>
14	Mon	Nov 26	<i>Assignment 22: Diagonalization &amp; Orthogonal Diagonalization</i>
	Wed	Nov 28	<b>Exam 4 (15%)</b>
15	Mon	Dec 3	<i>Assignment 23: Applications of Eigenvalues and Eigenvectors (part 1 of 2)</i>
	Wed	Dec 5	<i>Assignment 24: Applications of Eigenvalues and Eigenvectors (part 2 of 2)</i>
16	Mon	Dec 10	<b>Final Exam (20%) from 10:15am-12:15pm</b>