

**MATH 2270**

**FALL 2015**

**LINEAR ALGEBRA**

**CRN# 40129**

TR 1:00PM – 2:15PM (SNOW125)

**Instructor:** Jie Liu

**Email address:** [liu@dixie.edu](mailto:liu@dixie.edu)

**Office Room #:** SNOW143

**Office Hours:** TR 2:30-4:00PM

W 1:00-4:00PM

**Office Phone #:** 652-7983

Or by appointment

**Course Prerequisites**

C or better in Math 1210.

**Text Book**

**Linear Algebra and its application, 4th** edition by David C. Lay.

**Course Description**

All mathematics classes at Dixie State University support the general education goal of the college, and will:

1. Require students to perform mathematical processes including fractions, percentages, decimals, proportions/ratios, algebraic equations and/or calculus techniques.
2. Provide students with application problems that use a variety of methods including arithmetical, algebraic and geometric methods.
3. Challenge students to make inferences from mathematical models that include formulas, graphs and tables.
4. Provide students with real-life applications that use a variety of mathematical functions.

**Objectives**

Upon successful completion of Math 2270, a student will demonstrate through testing the ability to:

- Use matrices to solve linear systems of equations.
- Show a basic understanding of the general concepts of a vector space such as linear dependence, the span of a set of vectors, and the notion of subspace.
- Find standard and nonstandard inner-products of vectors.
- Obtain an orthonormal basis for an inner-products space.
- Compute the matrix of a linear transformation.
- Find the matrix of a linear transformation.
- Find the kernel and range of a linear transformation.
- Compute the eigenvalues, associated eigenvectors, and the characteristic polynomial for a square matrix.
- Carry out the procedure for diagonalizing a symmetric matrix.

**Disability Accommodations**

Students with medical, psychological, learning or other disabilities desiring reasonable academic adjustment, accommodations, or auxiliary aids to be successful in this class will need to contact the DISABILITY RESOURCE CENTER Coordinator for eligibility determination. Proper documentation of impairment is required in order to receive services or accommodations. DRC is located in the North Plaza Building. Visit or call 652-7516 to

schedule appointment to discuss the process. DRC Coordinator determines eligibility for and authorizes the provision of services. <https://dixie.edu/drcenter/>

### **Dmail**

Important class and college information will be sent to your Dmail account. All DSC students are automatically assigned a Dmail account. If you don't know your user name and password, go to [www.dixie.edu](http://www.dixie.edu) and select "Dmail," for complete instructions. You will be held responsible for information sent to your Dmail email, so please check it often.

### **Important dates/deadlines**

<http://www.dixie.edu/reg/calendar.html>

### **Resources**

Library - <http://library.dixie.edu>

Writing Center - [http://dixie.edu/dsc\\_writing\\_center/](http://dixie.edu/dsc_writing_center/)

Testing Center - <http://dixie.edu/testing>

Tutoring Center - <http://dixie.edu/tutoring/>

### **Policy for Absences Related to College Functions**

<http://www.dixie.edu/humanres/policy/sec5/523.html>

### **Policy for Student Rights and Responsibilities**

<http://www.dixie.edu/humanres/policy/sec5/533.html>

### **Course Work:**

The student's final grade will be determined by her/his performance on homework, exams, class activities & projects.

- Preview Reading: Reading math textbook can be challenge. Students are required to read textbook according to our schedule before show up in the class. Reading assignments will be posted on Canvas. Please submit your finished reading assignment at the beginning of each class.
- Homework: Homework will be collected every Tuesday. **No late homework will be accepted.** Random homework problems will be graded each time. A list of answers is not sufficient, you must show your work to get full credit.
- Exams: There will be 3 exams and a comprehensive final. Each student is expected to take the exams (except final) during the designated period in the testing center. **Make-up exams will be given at the discretion of instructor, and only if prior arrangements have been made.**
- Project: A project with relate to application will be assigned and required to be presented to class at the end of the semester.
- Grading: Exams – 15% each, Final – 20%, Reading assignments – 10%, Homework – 15%. Project Presentation- 10%. Grades will be assigned as follows: **A** (94-100%), **A-** (90-93%), **B+** (87-89%), **B** (83-86%), **B-**(80-82%), **C+**(75-79%), **C** (70-74%), **C-**(65-69%), **D+**(60-64%), **D**(55-59%), **D-**(50-54%), **F**(0-49%)

The following course schedules, assignments, and exam dates are subject to change as circumstances dictate. It is the responsibility of each student to attend the class and get the updated info.

### Assignment & Tentative Schedule

	Date	Section	Homework
Week1	T 8/25	1.1	1-27 odd, 33, 34
	Th 8/27	1.2	1, 3, 7, 13, 19, 21, 22, 29, 31
Week2	T 9/01	1.3	1~27 odd
	Th 9/03	1.4 1.5	1-31 odd 1~23 odd, 33, 35
Week3	T 9/08	1.6	1, 3, 9, 12
	Th 9/10	1.7 1.8	1~31 odd 1~31 odd
Week4	T 9/15	1.9	1~31 odd
	Th 9/17	Review	<b>Test 1 (9/17 - 9/21)</b>
Week5	T 9/22	2.1	1~29 odd
	Th 9/24	2.2	1~33 odd
Week6	T 9/29	2.3 2.5(O)	1, 3, 5, 8, 11, 13, 15, 16, 23, 24, 26,35, 40 2, 7, 15, 17, 24
	Th 10/1	3.1 3.2	1, 7, 13, 19, 25 1~41 odd
Week7	T 10/6	4.1	1, 3, 7, 8, 11, 13, 15, 17, 22, 23, 31, 32
	Th 10/8	4.2 4.3	1~33 odd 1~13 odd, 19, 21, 23, 31, 33, 35
Week8	T 10/13	Review	<b>Test 2 (10/13 - 10/19)</b>
	Th 10/15		Fall Break
Week9	T 10/20	4.4	1~31 odd <b>Project 1<sup>st</sup> draft</b>
	Th 10/22	4.5	1~29 odd
Week10	T 10/27	4.6	1~27 odd
	Th 10/29	4.7	1~15 odd
Week11	T 11/3	5.1 5.2	1, 5, 7, 11, 13, 15, 19, 21, 23, 25, 27 2, 5, 9, 12, 15, 19, 21, 24, 25
	Th 11/5	5.3	1, 4, 5, 9, 11, 15, 17, 21, 24, 26, 31
Week12	T 11/10	5.4	1~23 odd
	Th 11/12	Review	<b>Test 3 Project 2<sup>nd</sup> draft</b>
Week13	T 11/17	6.1	3, 5, 10, 16, 18, 19, 23, 25, 27, 29, 31
	Th 11/19	6.2	3, 6, 8, 9, 11, 14, 20, 21, 23
Week14	T 11/24	6.3	1-21 odd
	Th 11/26		Thanksgiving
Week15	T 12/01	6.4	1, 5, 7, 9, 13, 15, 17, 19
	Th 12/03		<b>Project Presentation</b>
Week16	T 12/08		Final Review
	Th 12/10		Final Review
<b>Final Exam: Tuesday, December 15th 1-3PM</b>			