

Santa Rosa Junior College

Syllabus for Fall 2017

Course name and number: Math 5 / Linear Algebra

Section code: 4481

Class Meeting Days/Times: MW 6:00-7:30PM

Class Location: Shuhaw 1723

Instructor: Dr. Ying Lin

Instructor's webpage: <http://www.santarosa.edu/~ylin>

Office: Shuhaw 1702

Email: ylin@santarosa.edu

Phone/Voicemail: 707-521-6912

Office hours: see the calendar on the instructor's webpage

Key dates for the spring semester:

Day Class Begins: August 21, 2017

Drop/refund deadline: September 3, 2017

Last Day to Drop without W: September 10, 2017

Last Day to Drop with W: November 19, 2017

Final exam date: December 19, 2017, 6:00PM-8:45PM

Course Description:

Sets, matrices, systems of equations and inequalities, linear programming, combinatorial techniques and probability, mathematics of finance, Markov chains, game theory.

Course Objectives:

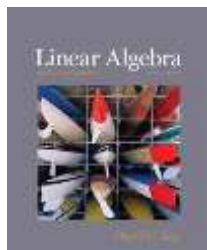
Upon successful completion of the course, students will be able to:

1. Solve systems of linear equations using Gauss-Jordan elimination, matrix inverses and Cramer's rule.
2. Define operations on matrices, invertibility, elementary matrices, orthogonal matrices.
3. Use properties of determinants including row reduction to evaluate determinants.
4. Invert matrices using adjoints and cofactors.
5. Define vector spaces, subspaces, span, linear independence, bases, dimension, inner product spaces, and orthonormal bases.
6. Determine the nullspace or kernel and range of a matrix and linear transformation.
7. Determine the injectivity and surjectivity of linear transformations and linear operators.
8. Define and determine dimension, rank and nullity of a matrix.
9. Determine the matrix representation of a linear transformation using different bases and using change of basis.
10. Determine eigenvalues, eigenvectors and eigenspaces of matrices and linear transformations.
11. Apply proof writing techniques to prove basic results in linear algebra.

Prerequisite:

Completion of MATH 154/155 or higher

Textbook:

	<p>Linear Algebra and Its Applications, 4th Edition by David C. Lay, Addison Wesley/Pearson Publishing, 2012.</p> <p>ISBN: 9780321385178/0321385179 Library Call Number: QA184.2 .L39 2012</p>
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Class website in Canvas:

There is a course website hosted by the college. You must have access to the course website in order to read the announcements, online discussions and grades. Additional problem sets, handouts and files will also be distributed through the course website. The class website is linked to the instructor's webpage, and you can log into your Canvas course using your SRJC ID number and PIN code. You can also directly access the login page through <https://santarosajc.instructure.com>

Class Attendance:

Absences, arriving to class late and leaving class early are counterproductive to learning. If you need to leave class early, notify the instructor **before** class starts, sit close to the exit and leave without disturbing the instructor or other students. You are responsible for obtaining any notes, announcements, etc. If you are absent, arrive late to class or leave early during more than 10 percent of the classes, you may be withdrawn from the course. Missing the first two classes may also result in you being withdrawn from the course to allow other students to enroll. Students are responsible for officially withdrawing from the course if they stop attending.

Graphing Calculators and Software:

A graphing calculator such as ones used in the Calculus sequence may be used. Your calculator should be able to perform matrix operations.

Email is checked twice a day during business hours only. Please include your course number and class time in the subject of your email. Please type your email using complete sentences in a respectful manner to ensure a timely response.

ADA Compliance Statement:

If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, use of service animal, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD is located in Analay Village on the Santa Rosa campus, and Petaluma Village on the Petaluma Campus.

Grading Policies

Grades		Final Grades	
Homework	100 points	90% - 100%	A
Attendance	10 points	80% - 90%	B
Quizzes	90 points	70% - 80%	C
Tests (2X100pts)	200 points	60% - 70%	D
Final Exam	200 points	< 60%	F
Total	600 points		

Incompletes:

The grade of "I" (incomplete) may be requested only with a valid, verifiable excuse and only if the student has successfully completed all but a small portion of the required coursework with a passing grade (at least 70% of the coursework must be complete). A student requesting an incomplete must do so by 24 hours after the final exam. An incomplete may be given only at the discretion of the instructor.

Homework will be assigned from the textbook and collected once a week. The list of homework problems can be downloaded from the class webpage. Late homework will not be accepted.

Quizzes: weekly quizzes may be given in class to test understanding of the homework assignments. Quizzes cannot be made up, but the lowest quiz will be dropped from the overall score.

Tests:

The three tests will be given in class on the dates noted in the syllabus. All tests are closed book, closed note tests, unless noted otherwise. Once you begin a test, you may not leave the classroom until you turn your test in to be graded. **Tests cannot be made up!** If you miss a test, your comprehensive final exam score can replace the score of up to one missed test.

Final Exam will be a comprehensive exam. It is **not** optional and must be taken on the week of classes during the class time. Make your vacation plans accordingly. The final exam replaces your lowest test score, if the percentage is higher.

- Example 1: you have scored 80% in both of your tests and 90% in your final. Then your total test/final scores will be $80+80+180=340$ out of 400 points.
- Example 2: you have scored 80% in both of your tests and 70% in your final. Then your total test/final scores will be $80+80+140=300$ out of 400 points.

If you receive less than 60% in the Final Exam, your final letter grade will be lowered by one full letter grade (e.g. from C to a D).

Cheating:

If a student is caught cheating (see the attached Student Code of Conduct), the student will receive a zero for the assignment, quiz or test in violation.

Student Withdrawal "W" Grades

Students may **withdraw** from class without instructor permission and without incurring any grade penalty until the W deadline. This grade may be requested by the student only during the first two-thirds of any session and may be given by the instructor on or before the official census reporting date to students who have ceased attending class before that date. Students who stop attending class after this date may receive a grade of "F."

Final Grades:

Students may check final grades at the online student portal approximately one week after the final exam. For privacy and security reasons, instructors may **not** post, give grades over the telephone or through e-mail. If you need an official grade report in mail, please submit a self-addressed envelope with sufficient postage. During the semester, your accumulated grade points will be available through the WebAssign grade book. The last day to report any missing grades is indicated in the schedule. No more changes will be made to the grade book after this date.

Help:

- Your questions are welcomed both in and out of class. If you cannot resolve your questions in class, I strongly recommend you coming to see me during office hours.
- Assistance can be found in the Mathematics Computer Lab, the MESA center, and the Tutorial Center in the Library.
- The Math Department office has a list of private tutors. This list can also be found on the Math Department web site at www.santarosa.edu/mathematics.

Student Conduct

We will conduct ourselves in a manner which reflects our awareness of common standards of decency and the rights of others. All students are expected to know the Student Conduct Code (http://www.santarosa.edu/for_students/rules-regulations/scs/section1.shtml) and adhere to it in this class. Students who violate the code may be suspended from 2 classes and referred to Vice President of Student Services for discipline.

Respect

The best way to learn is through active participation; therefore, we respect others when talking by being on-time, listening actively, and by being polite even when we disagree with another's viewpoint. Please turn off all electronic devices. If you use a laptop for note taking, please sit in the front row with the sound off. No food in class please.

Academic Integrity

All written work is to be original; plagiarism of any kind will result in a failing grade on that assignment. Students who plagiarize or cheat may be suspended [for one or two class meetings by the instructor] and referred to the Vice President of Student Services for discipline sanction, in cases of egregious violation. Please read the college policy/procedure on academic integrity at: <http://www.santarosa.edu/polman/3acadpro/3.11P.pdf>

Emergency Evacuation Plan

In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet on the lawn in front of Shuhaw to make sure everyone got out of the building safely and to receive further instructions. (If the class is on a second or higher floor, provide clear directions to the stairs). If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

Caveat:

The instructor reserves the right to make changes to the syllabus and will notify students of those changes in class.