Syllabus for Math 45 Linear Algebra – Eureka Campus

Semester & Year	Fall 2017
Course ID and Section #	MATH-45-E3189 (033189)
Instructor's Name	Mike Haley
Day/Time	Mon, Tues, Thurs, Fri 2:50PM - 3:55PM
Location	Sciences Building, Room SC205
Number of Credits/Units	4 Credits Lecture

Contact Information	*Office location*	CA 130
	Office hours	Tuesday 4:00-4:30 and Friday 1:50-2:50, & By Appointment
	Phone number	476-4352
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Textbook Information	*Title & Edition*	*Linear Algebra and its Applications, 4th Ed.*
	Author	David Lay
	ISBN	0-321-38517-9

Course Description

A course which develops the techniques and theory needed to solve and classify systems of linear equations. Solution techniques include row operations, Gaussian elimination, and matrix algebra. Properties of vectors are investigated in two and three dimensions, leading to the notion of an abstract vector space. Vector space and matrix theory are presented including topics such as inner products, norms, orthogonality, eigenvalues, eigenspaces, and linear transformations. Selected applications of linear algebra are included.
Computer exploration is an integral component of this course.

Student Learning Outcomes

1. Solve systems of linear equations using Gaussian elimination and matrix algebra, and apply these techniques to real world applications. Interpret the value of a determinant geometrically and use the value to determine the singularity of a matrix.
2. Determine the dimension of a vector space (e.g. the null space, the column space, and the row space of a matrix) and find a basis for the vector space.
3. Determine the matrix of a linear transformation and analyze the geometric action of the transformation and its inverse (if it exists).
4. Determine the eigenvalues and eigenvectors of a matrix and find bases for the eigenspaces. Interpret the definition of eigenvalues and eigenvectors geometrically. Use orthonormal bases to solve problems in linear algebra.

Special Accommodations

College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact Disabled Students Programs and Services. Students may make requests for alternative media by contacting DSPS at 707-476-4280.

Academic Support

Academic support is available at Counseling and Advising and includes academic advising and

educational planning, Academic Support Center for tutoring and proctored tests, and Extended Opportunity Programs & Services, for eligible students, with advising, assistance, tutoring, and more.

Academic Honesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at:
www.redwoods.edu/district/board/new/chapter5/documents/AP5500StudentConductCodeandDisciplinaryProceduresrev1.pdf Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the college catalog and on the College of the Redwoods website.

Disruptive Classroom Behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process a disruptive student may be temporarily removed from class. In addition, he or she may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at:
www.redwoods.edu/district/board/new/chapter5/documents/AP5500StudentConductCodeandDisciplinaryProceduresrev1.pdf
Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the college catalog and on the College of the Redwoods website.

Emergency Procedures for the Eureka campus:

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Eureka **campus emergency map** is available at:
(http://www.redwoods.edu/Eureka/campus-maps/EurekaMap_emergency.pdf). For more information on Public Safety, go to http://redwoods.edu/safety/ In an emergency that requires an evacuation of the building:
- Be aware of all marked exits from your area and building.
- Once outside, move to the nearest evacuation point outside your building:
- Keep streets and walkways clear for emergency vehicles and personnel.
- Do not leave campus, unless it has been deemed safe by the Incident Commander or campus authorities. (CR's lower parking lot and Tompkins Hill Rd are within the Tsunami Zone.)

   RAVE – College of the Redwoods has implemented an emergency alert system. In the event of an emergency on campus you can receive an alert through your personal email and/or phones at your home, office, and cell. Registration is necessary in order to receive emergency alerts. Please go to https://www.GetRave.com/login/Redwoods and use the "Register" button on the top right portion of the registration page to create an account. During the registration process you can elect to add additional

information, such as office phone, home phone, cell phone, and personal email. Please use your CR email address as your primary Registration Email. Your CR email address ends with "redwoods.edu." Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions.

Welcome to Linear Algebra

Course Materials
Textbook
Access to a modern computer from which you can interact with Mathematica, CANVAS, and other resources.

Grading System

Homework	20%
Quiz/Activities	20%
Exams	40%
Project	20%

The plus/minus grade system will be utilized.

A   93-100% B   83-86.9%   C 70-76.9%
A- 90-92.9% B- 80-82.9%   D 60-69.9%
B+ 87-89.9% C+ C+ 77-79.9% F 0-59.9%

In order to earn an A or B, all assignments must be turned in. Additionally, there is a Pass/No Pass Option available, but there are deadlines associated with this option.

Mathematica

Mathematica is a powerful software package created by the engineers at the Wolfram Mathematica. This software can be installed on several platforms, including Linux, Mac OS X, and Windows XP.

Mathematica is installed on the computers in the SC 212 computer lab and on the Computers in the ASC. To obtain a free version of Mathematica for use on your personal, go to Mathematica at College of the Redwoods. Slide down to where it says Student personally owned machines. Make sure you use Student personally owned machines and not the sections for faculty or campus machine use. Once you are at the section Student personally owned machines, perform each of the following tasks:

1. In number one, part (a), click the user.wolfram.com link and fill out (completely) the form using your @mycr.redwoods.edu email address.
2. Once you have completed the first step, go to step 2 and click on the Fill out this form link to request an activation key. It usually takes less than a day or two to receive an email with an activation key and instructions for downloading and installing Mathematica.
3. If you experience any problems, contact me via a Canvas email.

Expectations
I expect that all students that remain enrolled in this class are committed to working in groups, agree to actively participate in discussions and activities, and directly engage the material and other people in the course with a positive attitude.

I expect that everyone is treated with respect in our class. Please go out of your way to be considerate of others since this will enhance the quality of the learning environment in our classroom. I expect that you use cell phones and computers appropriately and in a manner that does not disturb any fellow students or the instructor; this implies that at the very least there should not be any sound coming from your cell phone and you only utilize applications that have course content related material.

Additionally, you should be on time to class and avoid leaving early in order to minimize disruption. If you are asked to leave the class, then be sure to visit me in the office and be prepared to write a paper before returning to class. The Student Code of Conduct addresses many issues that arise on a college campus and you should be aware of the agreement that you have made as an enrolled student.

Homework
Homework is a regular and consequential aspect of math courses. Typically two assignments will be given each week, and will be graded on completeness, quality of the work, and following the directions. Typically homework will be returned within a two class periods.

Quizzes & Activities
Quizzes will be a regular aspect of the course. They will typically be announced in class the day before the quiz. Activities may be utilized throughout the semester and may be either individual or group assignments based upon the specific assignment.

Projects
There will be a project which will require a proposal, a written report and a presentation. Students may work independently, or with one other student. Additional information will be forthcoming during the third week of the semester.

Participation
The structure of this class and the emphasis on small group learning implies that active participation in the course is necessary for success. The participation grade will be assigned by both instructor and classmates, and will be based upon attendance as well the effort placed into the class and activities.

Attendance
To succeed in a mathematics class you need to attend every class meeting. The CR Catalog defines the equivalent of a week's absence as excessive and the Math Department has determined that missing the equivalent of two weeks of class is cause for being dropped from the class. If you have to miss class, make prior arrangements with a fellow student to get any notes or materials covered that day. You are responsible for the all material covered even if you don't attend class. Plan on being in class for the complete duration of the session. Any combination of two occurrences of tardiness or leaving before the end of the course will be considered an absence.

Final Exam

The final exam for our class is scheduled for Monday, December 11 from 3:15 to 5:15. You must attend and participate in the activities scheduled for this class period.

Late Work
The three exam dates, and the three dates associated with the project are posted in the syllabus and should be followed. Homework due dates will be posted when the assignment is given and are to be submitted at the beginning of the class period. Typically there are no make-up quizzes offered.

Disclaimer
While every attempt will be made to keep minimal changes to this document during the semester, like most other things, it is subject to change.

Last update August 28, 2017