



Math 21 - Summer 2016

Elementary Linear Algebra

TuTh 9:00AM - 12:30 PM in Physical Sciences 130

Instructor: Rob Carman

Email: wcarman[at]ucsc[dot]edu

Class site: <http://people.ucsc.edu/~wcarman/21sum16>

Office: McHenry 1266

Office Hours: MW 10:00AM - 12:00PM

Course Description: The topics covered in this class include systems of linear equations, the vector space \mathbb{R}^n , matrix algebras, determinants, abstract vector spaces, linear transformations, eigenvectors, and eigenvalues.

Prerequisite: One of Math 11A, Math 19A, Math 20A, AMS 11A, or AMS 15A

Credit Hours: 5

Text: *Elementary Linear Algebra an etext*, 4th Edition

Author: Bruce Cooperstein; **ISBN-13:** 978-0-9885572-0-8

This is an e-text available for purchase on Lulu. The first chapter of the book is available for free.

Grade Distribution:

Quizzes	15%
Homework	15%
Midterm Exam	25%
Final Exam	45%

Quizzes: There will be a quiz at the beginning of every lecture over important definitions covered in the previous lectures.

Homework: A small number of homework problems will be assigned weekly and collected at the end of lecture on Thursdays. Additional ungraded homework problems will be suggested each week as well.

Midterm Exam: There will be a single midterm exam on Tuesday August 9 during the first half of class.

Final: A cumulative final exam will be given on the last day of class, Thursday August 25.

Teaching Assistant: Fatemeh Yi

Section: MW 1:00PM - 3:00PM – North Science Annex 101

Email: fyarahma[at]ucsc[dot]edu

Office Hours: MW 3:30PM - 5:00PM – McHenry 4112

Important Summer Session II Dates:

Thursday July 28: enroll deadline
Monday August 1: drop deadline
Friday August 5: deadline to change grade option
Friday August 12: withdraw deadline
Friday September 2: grades due

Students with Disabilities: If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me as soon as possible, preferably within the first week of the Summer Session. Contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu for more information.

Tutoring: If you would like to hire a private tutor for this class, just let me know, and I will put you in contact with possible tutors. Learning Support Services will have small group tutoring sessions. All students are eligible for two hours of tutoring a week and can sign up on the LSS website beginning July 26 at 10:00AM. Additionally, a list of tutors is supplied by the Math Department.

Late Policy: I do not accept late homework or give makeup quizzes. If you know you will have to miss a quiz or will be unable to turn in an assignment on time, let me know as far in advance as possible, and we can try to work something out.

Local Discounts: Check this site for a list of discounts available to summer session students in the Santa Cruz area: <http://summer.ucsc.edu/resources/local-discounts.html>

Tentative Course Outline:

Note that the topic coverage might change as it depends on the progress of the class.

Date	Topics covered
Tuesday 7/26	<ul style="list-style-type: none">• Topics: Systems of Linear Equations, Matrices, Echelon Forms, Vectors in \mathbb{R}^n• Sections: 1.1, 1.2, 2.2
Thursday 7/28	<ul style="list-style-type: none">• Topics: Span, Subspaces, Linear Independence, Bases, Dimension• Sections: 2.3, 2.4, 2.5
Tuesday 8/2	<ul style="list-style-type: none">• Topics: Linear Transformations, Matrix Operations• Sections: 3.1, 3.2, 3.3
Thursday 8/4	<ul style="list-style-type: none">• Topics: Invertible Matrices, Elementary Matrices• Sections: 3.4, 3.5
Tuesday 8/9	<ul style="list-style-type: none">• Midterm• Topic: Determinants• Sections: 4.1, 4.2
Thursday 8/11	<ul style="list-style-type: none">• Topics: Abstract Vector Spaces, Span, Linear Independence, Dimension• Sections: 5.1, 5.3, 5.3
Tuesday 8/16	<ul style="list-style-type: none">• Topics: Coordinate Vectors, Change of Basis, Rank, Nullity• Sections: 5.4, 5.5
Thursday 8/18	<ul style="list-style-type: none">• Topics: Linear Transformations, Image, Kernel, Representing Matrices• Sections: 6.1, 6.2, 6.3
Tuesday 8/23	<ul style="list-style-type: none">• Topics: Eigenvalues, Eigenvectors, Diagonalization• Sections: 7.1, 7.2
Thursday 8/25	<ul style="list-style-type: none">• Final