

MATH 3110 – 001: LINEAR ALGEBRA

FALL 2018

MWF 9:05am – 9:55 am, MARTIN HALL M102

Instructor Dr. Cynthia Ramiharimanana (nramiha@clemson.edu)

Office: Martin Hall O – 11

Office Hours: MWF 2:30pm – 3:30pm or by appointment

Textbook Linear Algebra and Its Applications, 5th edition, by David C. Lay.
Note(s) will be posted on canvas day(s) before the next class and students are supposed to read them. I will assume that students have read the note(s) before coming to class.

Prerequisites MATH 1080 (Calculus II)

Learning Outcomes Linear Algebra is one of the most fundamental areas in Mathematics due to its broad range of applications. The concepts of Linear Algebra are extremely useful in the areas of Engineering, Physics, Computer Science, and so many more, and it is highly recommended for the students of these fields. This course will be an introduction to Linear Algebra at the undergraduate level. We will concentrate on the mathematical theory and methods of linear algebra as well as discuss some applications. After successfully completing the course, each student is expected to: - be able to solve a system of linear equations through elimination – be able to perform matrix algebra; compute determinants; find eigenvalues and eigenvectors; and to diagonalize – to understand linear transformation and apply their properties – to be able to carry out operations in vector spaces; to connect the concepts of independence, basis, and dimensions – to be able to define the column space, row space, and null space of a matrix – to be able to apply the concepts to solve problems in mathematics, engineering, etc.

The following fundamental topics will be covered:

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| (1) Systems of linear equations; | (5) Linear transformation |
| (2) Matrices and operation on matrices | (6) Eigenvalues and eigenvectors |
| (3) Determinants | (7) Orthogonality and Least squares |
| (4) Vector spaces and subspaces | |

Policies	<ul style="list-style-type: none"> • Class attendance is mandatory. Attendance will be taken and will be used to decide grades in borderline cases. You are responsible for any material covered in classes you miss. No lecture will be repeated during office hours. • All drop/add procedures are your responsibility. • All use of cellphones and laptops is prohibited during lecture and exam. No calculator can be used during exams. • If the instructor has not arrived within 10 minutes of the scheduled class time, you may assume that class has been canceled. 								
Communication	CANVAS will be used to post materials of the course. You should check your email and canvas EVERY DAY. Students are responsible for any information about the course sent out by email or canvas.								
Homework and Quizzes	Homework will accumulate from lecture to lecture, and all must be completed to receive a grade for the course. Homework must be handed in at the beginning of the class, late homework will NOT be accepted. All work must be shown to get credit. Quizzes will be given regularly and unannounced at the beginning of class. Make-up quizzes will not be given. The lowest quiz grade will be dropped.								
Grading	<p>The final grade will be calculated as follows:</p> <table> <tr> <td>Homework and quizzes</td><td>30%</td></tr> <tr> <td>Midterm 1</td><td>20%</td></tr> <tr> <td>Midterm 2</td><td>20%</td></tr> <tr> <td>Final exam</td><td>30%</td></tr> </table> <p>Make up exam, which will not be necessarily the same as the regular exam, will be given only with an official written excuse in advance.</p> <p>Grading scheme: $A \geq 90\% > B \geq 80\% > C \geq 70\% > D \geq 60\% > F$</p>	Homework and quizzes	30%	Midterm 1	20%	Midterm 2	20%	Final exam	30%
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Exam dates	<p>Midterm 1, in class: October 5th (tentative)</p> <p>Midterm 2, in class: November 2nd (tentative)</p> <p>Final exam: December 14th , 8:00am – 10:30am</p>								

Title IX	<p>Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veterans status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at http://www.clemson.edu/campus-life/campus-services/access/title-ix. Mr. Jerry Knight is the Clemson University Title IX Coordinator. He also is the Director of Access and Equity. His office is located at 110 Holtzendorff Hall, 864.656.3184 (voice) or 864.565.0899 (TDD).</p>
Accessibility statement	<p>Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing studentaccess@lists.clemson.edu, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged - drop-ins will be seen if possible, but there could be a significant wait due to scheduled appointments. Students who receive Academic Access Letters are strongly encouraged to request, obtain and present these to their professors as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: http://www.clemson.edu/campus-life/campus-services/sds/</p>
Academic Integrity	<p>As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a <i>high seminary of learning</i>. Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. When in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty including a description of the misconduct, to the Dean of the Graduate School. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.</p>