Math 341 **Elementary Linear Algebra I** **Fall 2017**

2:00-2:50pm; MTWF 105 Fenton Hall

Instructor: Jennifer Thorenson

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Office Hours: Monday and Wednesday at 11am-12pm, Tuesday at 3-4pm or by appointment.

Textbook: *Linear Algebra and Its Applications*, 5th edition, David C. Lay, Steven R. Lay, and Judi J. McDonald.

Prerequisite: C- or better in Math 252.

Homework: Homework will be due at the beginning of class every Tuesday starting the second week of class. The assignments will be from the text book and can be found on the canvas page for the class. Late homework assignments will not be accepted.

Exams: There will be two in-class exams during the term; the first exam is on October 18 and the second exam is on November 15. The final exam is cumulative. It is scheduled for 2:45-4:45pm on Thursday, December 7 in our regular classroom, 105 Fenton Hall. Exams can only be taken other than the scheduled time if arrangements are made in **advance** and a valid and admissible reason for not attending the scheduled time is provided. However, the final exam will not be administered early.

Bring your UO student ID to all exams.

Grade: The final grade will be based on homework (25%), midterm exams (20% each) and the final exam (35%). Based on the following table, you are guaranteed to earn at least that grade, but grades may be adjusted at the end of the term depending on the outcomes of the course.

Percentage	Grade	Percentage	Grade	Percentage	Grade
90-92%	A-	93-96%	A	97-100%	A+
80-82%	B-	83-86%	B	87-89%	B+
70-72%	C-	73-76%	C	77-79%	C+
60-62%	D-	63-66%	D	67-69%	D+
0-59%	F				

Learning Environment: The University of Oregon strives for inclusive learning environments. Please notify me if the instruction or design of this course results in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center in 164 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu.

Classroom Environment: Disruptive behavior in the classroom will not be tolerated. Leaving class early or arriving late, unless by prior agreement with the instructor, is considered disruptive behavior. All cell phones and music players must be turned off during the class period.

Calculator and Electronic Device Policy: Calculators are not required for this course but students are encouraged to use calculators and computers as educational aids. However, calculators and other portable electronic devices (laptops, tablets and cellphones) cannot be used during exams.

Academic Misconduct: The code of student conduct and community standards is at conduct.uoregon.edu. In this course, it is appropriate to help each other on homework as long as the work you are submitting is your own and you understand it. It is not appropriate to help each other on exams, to look at other students' exams, or to bring unauthorized material to exams. In the event of academic dishonesty, the offense will be reported to the Office of Student Conduct and Community Standards and the student will be sanctioned up to receiving a failing grade in the course.

Tentative Schedule

We will cover most of chapters 1-4 during the course.

Week 1	1.1-1.3	Week 6	3.2-3.3, 4.1
Week 2	1.4-1.6	Week 7	4.1-4.3
Week 3	1.7-1.9	Week 8	4.4 (exam 2)
Week 4	2.1-2.2 (exam 1)	Week 9	4.5-4.6
Week 5	2.3, 3.1-3.2	Week 10	4.6, review

Learning Outcomes: Math 341 begins with the study of solving systems of linear equations by manipulating vectors and matrices. Then it introduces properties of matrices including operations, existence of an inverse, and determinants. The main goal is the introduction of vector spaces and linear transformations defined by matrices. A successful student in this course should have an understanding of the following concepts.

1. Find the general solution of a system of linear equations using row reduction.
2. Express a system of linear equations as a matrix equation.
3. Determine if a set of vectors in $\mathbb{R}^n$ is linearly independent or linearly dependent.
4. Find the determinant of a matrix by using a cofactor expansion or by performing row operations.
5. Understand the definitions of vector space, subspace, basis, and dimension.
6. Understand how to convert a spanning set for a subspace into a basis for the subspace.
7. Determine if a vector lies in a span.
8. Find the dimension of a span.
9. Find the coordinates of a vector with respect to a basis.
10. Find the null space and range of a linear transformation.