MATH 341 Online - Spring 2023
Linear Algebra

Professor:Dr. Amy Yielding
Office: Loso Hall 224
E-mail: ayielding@eou.edu
Office Phone: (541)962-3314

Class: Online
Student Drop-In Hours: MTRF 12:00-12:50pm via Zoom
Credit Hours: 4

Prerequisites: Math 252 or consent of the instructor.

Text: *Linear Algebra and Its Applications*, 6^{th} edition, by Lay.

Text Website: Textbook Projects

Lesson Video Series: This course has twelve **interactive videos**, accessible through our canvas page. You should watch these videos, taking notes, in a **distraction free environment**. There are prompts throughout the videos to gauge your understanding. The videos range in length from 7 minutes to 25 minutes, depending on the topic.

Calculators: A basic calculator is recommended. **Graphing/Programmable/Transmittable calculators are not allowed** during exams or quizzes. If you are unsure that your calculator is appropriate for this course, **it is your responsibility** to check with me that it is indeed allowable.

Catalog Description: An introduction to linear algebra including systems of linear equations, vector and matrix algebra, determinants, linear transformations, eigenvalues and eigenvectors, and the concepts of basis and dimension.

Learning Outcomes: Upon successful completion of this course a student should:

- Feel comfortable and familiar with the language of linear algebra.
- Understand the relationship between matrix equations and vector equations, how they relate to solution sets of linear systems, linear combinations of vectors, and linear transformations.
- Be knowledgable of the Invertible Matrix Theorem and proficient in implementing its many uses.
- Compute the determinant of a matrix and understand how the determinant relates to sets of linear independent vectors.
- Determine the column space and null space of a given matrix, representing them as spanning sets, and know their dimensions.
- Compute eigenvalues and eigenvectors and understand their importance in determining algebraic properties of matrices.
- Be able to implement the Gram-Schmidt Process.
- Prove theorems related to all concepts stated above.

Means of Assessment: Outcomes will be assessed through the following means:

- Discussions After watching a Quiz Video Lesson and attempting the corresponding Quiz Practice Problems you should participate in the corresponding Quiz Discussion Board. You must have at least one post about the motivational problem provided in the Discussion Board. You must post at least twice. These can be in the form of posing a question or helping another student. You must upload an image of your work at least once on this discussion board.

- Quizzes All Quiz Video Lessons and corresponding Quiz Practice Problems has an associated Quiz. Each Quiz varies between a 10-15 minute time limit and you are given a 24 hour window to complete the quiz. If you are in the process of answering a question and time expires, Canvas will save all material you have submitted. **Make sure the computer you are using is reliable and you have a full time needed available without distractions**. It is essential that you have your calculator, paper, and pencil while taking the quiz. You must upload your by hand work 5 minutes after submitting the quiz. There are a total of 12 quizzes worth 10 points a piece for a total of 120 points. **Zoom Screen Recording is required for every quiz**. You must start your own Zoom meeting, share your entire screen, have the mic and video on and record the entire time you are taking the quiz. Afterwards you must email me your recording within 1 hour of completing the quiz.

  - After you receive feedback from me on your by hand work, you may integrate this feedback into your solutions and resubmit via email. This resubmission must occur within 24 hours of receiving your feedback and may increase your quiz score.

- Project There will be one project assigned worth 100 points. You must have your project idea chosen and approved by your professor by May 5, 2023(10 points). You are required to submit a rough draft of your project by May 26, 2023(10 points). The final draft of your project is due by Friday, June 9, 2022(80 points). You may turn in your final draft of your project anytime after the project description is given.

- Exams There are a total of 2 exams worth 100 points each, totaling 200 points. There is also a cumulative final exam worth 120 points. A single sided, handwritten, 3" $\times$5" note card is allowed on the exams. As with the quizzes **Zoom Screen Recording is required for every exam** that you must email me your recording within 1 hour of completing the exam. Also similar to the quizzes you must upload your by hand work within 5 minutes of submitting the exam.

NOTE: All discussions, exams, and the project materials may be turned in early!

Assignment Completion: Completing assignments on time is the students responsibility. A complete schedule of the assignments are available on the first day of class. Make-up assignments will only be given to students with documented university excuses. If possible, notify the professor as soon as you are aware of the issue.

Statement of Academic Misconduct: Eastern Oregon University places a high value upon the integrity of its student scholars. Any student found responsible for an act of academic misconduct (including but not limited to cheating, unauthorized collaboration, fabrication, facilitation, plagiarism or tampering) may be subject to having his or her grade reduced in the course in question, being placed on probation or suspended from the University, or a combination of these. (Please see the Student Handbook online at http://www.eou.edu/sse/student-handbook/).

Statement on Americans with Disabilities: Any student who feels he or she may need an accommodation for any type of disability, please make an appointment to see me during my office hours

or contact the Disability Services Office in Loso Hall, Room 234. Phone: 541-962-3081.

Assistance: Your professor has student drop-in hours for assisting you with questions or concepts that you are struggling with and you are encouraged to visit. Your fellow students are a good resource as well, post to the discussion board and help each other out. Considering forming Zoom study groups. Finding solutions online, although may assist you in finding the answers, may result in poor test scores. Being able to read, understand, and solve Linear Algebra problems without assistance from anyone or thing will be required to pass exams.

Grade Distribution: The following is a standard for distribution of grades based on percentage of points earned in the class, the standard may be lowered but never raised.

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