

West Los Angeles College

SLO Addendum

Course Name and Number MATH 270

Course Title LINEAR ALGEBRA

Course Objectives (as stated in the Course Outline of Record)

1. Evaluate Systems of Linear Equations.
2. Demonstrate Row Reduction and Echelon Forms.
3. Solve Vector Equations.
4. Practice The Matrix Equation $Ax = b$.
5. Calculate Solution Sets of Linear Systems.
6. Define Applications of Linear Systems.
7. Recognize Linear Independence.
8. Compute Linear Transformations.
9. Identify Matrix of a Linear Transformation.
10. Perform All Matrix Operations.
11. Compute The Inverse of a Matrix.
12. Identify Characterizations of Invertible Matrices.
13. Describe Subspaces of R^n .
14. Discuss Dimensions and Rank.
15. Evaluate Determinants.
16. Discuss Properties of Determinants.
17. Practice Cramer's Rule, Volume, and Linear Transformations.
18. Construct Vector Spaces and Subspaces.
19. Analyze Null Spaces, Column Spaces, and Linear Transformations.
20. Design Linearly Independent Sets; Bases.
21. Practice Coordinate Systems.
22. Explain The Dimension of Vector Space.
23. Interpret Rank.
24. Perform Change of Basis.
25. Calculate Eigenvectors and Eigenvalues.
26. Solve The Characteristic Equation.
27. Perform Diagonalization.
28. Interpret Inner Product, Length, and Orthogonality.
29. Compute Orthogonal Sets.
30. Evaluate Orthogonal Projections.
31. Perform Diagonalization of Symmetric Matrices.
32. Recognize Quadratic Forms.
33. Compute Constrained Optimization

<p align="center"><u>Course SLO</u></p> <p>One sentence that describes a major piece of knowledge, skill, or ability that students can demonstrate by the end of the course</p> <p><i>Finish the sentence, "At end of the course, the successful student will be able to... "</i></p>	<p align="center"><u>Assessment Method</u></p> <p>Major assignment, project or test used to demonstrate or apply outcome</p> <p><i>Remember to have a mix of qualitative and quantitative assessment methods.</i></p>	<p align="center"><u>Criterion Level</u></p> <p>Reflects satisfactory performance on the SLO</p> <ul style="list-style-type: none"> • <i>At least 80 percent of students achieve this course SLO.</i> • <i>All students achieve at least the B level on this SLO.</i> • <i>At least 70 percent of students achieve the B level on this course SLO.</i>
<p>1. Solve systems of equations using Gauss-Jordan eliminations and Cramer's rule.</p>	<p>Students will answer questions embedded on a final exam. The final exam covers all these four parts. A scantron scanner will be used to access the results for each of the relevant questions.</p>	<p>At least 80% of students will complete the questions (or exercise) with at least 70% accuracy.</p>
<p>2. Understand the concepts vector space, subspace, basis, and dimension.</p>	<p>Students will answer constructed-response question(s) embedded in a final exam or an in-class exercise.</p>	<p>At least 80% of students will complete the questions (or exercise) with at least 70% accuracy.</p>
<p>3. Use the Gram-Schmidt process to find an orthogonal basis in an inner product space, and apply the idea in finding the best approximation of a solution.</p>	<p>Students will answer constructed-response question(s) embedded in a final exam or an in-class exercise.</p>	<p>At least 80% of students will complete the questions (or exercise) with at least 70% accuracy.</p>
<p>4. Given a matrix, students will be compute the null space, column space, row space, eigenvalues, eigenvectors, determinant (if applicable), diagonal representation (if applicable), and inverse (if applicable).</p>	<p>Students will answer constructed-response question(s) embedded in a final exam or an in-class exercise.</p>	<p>At least 80% of students will complete the questions (or exercise) with at least 70% accuracy.</p>

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Mapping to Program SLO and Institutional SLOs

Please indicate with an "X" in the appropriate boxes below, the Course SLO mapping to the corresponding Program and Institutional SLO(s).

Course SLO	Program SLO												Institutional SLO									
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C	D	E	F	G	H	I	
#1		X	X	X	X								X		X							
#2		X	X	X	X								X		X							
#3		X	X	X	X								X		X							
#4		X	X	X	X								X		X							

Course SLO Acknowledgements

Division Chair

Matt Robertson

Date

SLO Coordinator

Todd Matosic

Date

Dean

Judith-Ann Friedman

Date

Curriculum Committee Chair

Judy Chow

Date

Academic Senate President

Adrienne Foster

Date

VP of Academic Affairs (initial) and College President

Date