

Course Description Form

1. Course Name:	
Linear Algebra	
2. Course Code:	
LALG1337	
3. Semester / Year:	
2 nd Semester	
4. Description Preparation Date:	
8/2/2024	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/30	
7. Course administrator's name (mention all, if more than one name)	
Name: Luay Thamir Rasheed Email: luay.t.rasheed@uotechnology.edu.iq	
8. Course Objectives	
Course Objectives	<p>The two central problems about which much of the theory of linear algebra revolves are the problems of:</p> <ul style="list-style-type: none"> • Finding all solutions to a linear system. • Finding eigenvalues and eigenvectors of a system for a square matrix. <p>This course is devoted to teaching the students the mathematical tools of linear algebra that will help them understand and handle many problems in control theory.</p>
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> • Lectures. • Tutorial. • Quizzes.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4		1. Introduction to Systems of Linear Equations 2. Gaussian Elimination and Gauss-Jordan	Lectures + Solve Examples	Discuss and evaluate homework
3-4	4		1. Vector Spaces 2. Subspaces of Vector Spaces	Lectures + Solve Examples	Quiz
5-6	4		1. Spanning Sets and Linear Independence 2. Basis and Dimension	Lectures + Solve Examples	Discuss and evaluate homework
7-8	4		1. Rank of a Matrix and Systems of Linear Equations 2. Coordinates and Change of Basis	Lectures + Solve Examples	Discuss evaluate homework
9	2		Applications of Vector Spaces	Lectures + Solve Examples	Quiz
10-12	6		1. Eigenvalues and Eigenvectors 2. Diagonalization	Lectures + Solve Examples	Discuss and evaluate homework
13-15	6		1. Symmetric Matrices and Orthogonal Diagonalization 2. Applications of Eigenvalues and Eigenvectors	Lectures + Solve Examples	Discuss and evaluate homework

11. Course Evaluation

20% documented exam
5% Quizzes
5% reports and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

Ron Larson and David C. Falvo. Elementary Linear Algebra. 4th ed. Houghton Mifflin Harcourt Publishing Company, 2009

Main references (sources)	Strang, Gilbert. Introduction to Linear Algebra. 4th ed. Wellesley, MA: Wellesley–Cambridge Press, February 2009.
Recommended books and references (scientific journals, reports...)	Erwin Kreyszig. Advanced Engineering Mathematics. 9th ed. 2006.
Electronic References, Websites	