Palestine Technical University -Kadoorie
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جامعة فلسطين التقنية – خضوري
دائرة الجودة والنوعية
طولكرم- ص.ب 7
هاتف: 09/2671026 -09/2677923
فاكس: 09/2677922
بريد إلكتروني: quality@ptuk.edu.ps

College	College of information Technology		
Course Title	Linear Algebra	**Course Number:**	19041222
Year	2023/2024	**Semester:**	Second Semester
Prerequisite(s)	Calculus 2		
Instructor	Dr. Taqwa Al-Khader		
Instructor's e-mail	t.alkhader@ptuk.edu.ps		
Office Hours			
Class Time	**[12:30_2:00] Mon / Wed**	**Class Room:**	
Course description	Linear equations, matrices, determinants, vector spaces and subspaces, linear transformation, eigenvalues and eigenvectors, similarity of square matrices, diagonalization. First order differential equation. The existence and uniqueness theorem differential equation of Higher order.		
Objectives	**On successful completion of this course the student will be able to achieve the following objectives:** • how to analyze and solve a linear system of equations. • important characteristics of matrices, such as fundamental subspaces, rank, determinant, eigenvalues and eigenvectors. • how to recognize linear transformation. • important concepts of vector spaces such as independence, basis, dimensions. • recognize and classify ordinary differential equations. • solve linear first-order ordinary differential equations. • solve constant-coefficient linear second-order differential equations.		
Course Intended Learning Outcomes (CILOs)			

Textbook	Linear Algebra with Applications, 8th Edition, Steven J. Leon.
Other required material (References):	
Other Resources used (e.g. e-learning, field visits, periodicals, software, etc.)	

Academic Quality Assurance Department

Course Syllabus Form

Course Teaching Methods	
Teaching Method	**CILOs**
Zoom Online Meetings	
Recorded Lectures	

Assessment Type	**Details/Explanation of assessment in relation to CILOs**	**Weight**	**Date(s)**
Midterm Exam		35%	
Second Exam			
Quizzes			
Laboratory/Practical			
Assignments			
Project		20%	
Final Exam		45%	
Total		100%	

Course Intended Learning Outcomes (CILOs)										
CILOs	**Mapping to Program ILOs**									
On successful completion of the course, students will be able to:	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**H**	**I**	**j**

Course Weekly Breakdown					
Week	**Date**	**Topics Covered**	**CIL Os**	**Lab Activities**	**Assessment**
1-4		**Matrices and Systems of Linear Equat** 1.1 Systems of linear equations. 1.2 Row echelon form. 1.3 Matrix Arithmetic. 1.4 Matrix algebra.			
5,6		**Determinants.** 2.1 Determinant of a matrix. 2.2 Properties of determinants. 2.3 Cramer's rule.			
7-10		**Vector Spaces.** 3.1 Definition and examples. 3.2 Subspaces. 3.3 Linear independence. 3.4 Basis and dimension. 3.6 Row space and column space.			
11		**Linear Transformations**. 4.1 Definition and examples			
12,13		**Eigenvalues**. 6.1 Eigenvalues and eigenvectors. .			
14,15					

Prepared by:	**Dr. Taqwa Al-Khader**	**Signature**	
Head of Department	**Dr. Sherin Hejazi**	**Signature**	
Date	**3/3/2024**		