AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Linear Algebra						
Course Code	MTK566		Couse Level	Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	175 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	This basic course includes some concepts of linear algebra, which is essential in all branches of science. The purpose of this course the student to teach the basic and general concepts.						
Course Content	Systems of Linear Equations, Linear Transformations, Diagonalization, inner product spaces						
Work Placement	N/A						
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Discussion, Individual Study, Problem Solving				
Name of Lecturer(s)							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading

1	Linear Algebra, K. Hoffman and R. Kunze
2	Topics in Linear Algebra, Cemal Koç

Week	Weekly Detailed Course Contents	
1	Theoretical	Linear Equations
2	Theoretical	Vektor Spaces
3	Theoretical	Linear İndependence, Base
4	Theoretical	Linear Transformations
5	Theoretical	Determinants
6	Theoretical	Aplications of Determinants
7	Theoretical	Karakteristik and minimal polinoms
8	Intermediate Exam	MIDTERM EXAM
9	Theoretical	Eigenvalue, Eigenvector, Diagonalization
10	Theoretical	Rational and Jordan Forms
11	Theoretical	Jordan forms
12	Theoretical	Dioganalization of Comlex Matrices
13	Theoretical	İnner Products, Norm and Orthogonality
14	Theoretical	Aplication of inner products
15	Theoretical	Normal, unitery and orthagonal operators
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	10	2	12
Midterm Examination	1	32	2	34
Final Examination	1	43	2	45
			Total Workload (Hours)	175
			[Total Workload (Hours) / 25*] = **ECTS**	7

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able extract the characteristic and minimal polynomials of an operator

2	To be able to obtain eigenvalues and canonical forms of a matrix
3	To be able to find Jordan and rational forms of matrices
4	To be able to define an inner product space
5	To be able to define the linear operator on inner product spaces
6	To be able to obtain the form of a quadratic transformation

Programme Outcomes *(Mathematics Master)*

1	To be able to have an adequate theoretical and practical domain knowledge.
2	To be able to comprehend the interdisciplinary interaction associated with Mathematics.
3	To be able to use theoretical and practical domain knowledge gained in the field of Mathematics.
4	To be able to interpret knowledge from different disciplines integrating knowledge in the field of mathematics and produce new information.
5	To be able to define, analyse, model and to solve the problems by scientific methods in Mathematics.
6	To be able to conduct a math related specialistic study independently.
7	To be able to develop new strategic approaches to solve problems occurred in unforeseen and complex math-related applications by taking responsibility.
8	To be able to lead in situations that require solving problems related to the mathematics.
9	To be able to criticize his/her knowledge and skills acquired in the field mathematics.
10	To be able to transfer his/her ideas and suggestions for solutions to problems by supporting quantitative or qualitative data verbally and in writing.
11	To be able to communicate both orally and written in a foreign language.
12	To be able to use computer hardware and information technologies with software required by Mathematics.
13	To be able to contribute to the solution of the social, scientific, cultural and ethical problems related to the Mathematics, and being able to support the development of social, scientific, cultural and ethical values.
14	To be able to develop mathematics-related strategies, policies and operational plans, and to evaluate the results obtained within the framework of quality processes.
15	To be able to use his/her knowledge in the field of mathematics and practical problem-solving skills in interdisciplinary studies.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6
P1	5	3	4	5	5	5
P2	5	5	4	4	5	5
P3	4	4	5	5	4	4
P4	5	4	5	5	5	5
P5	4	5	5	5	4	4
P6	3	3	3	3	3	3
P7	2	3	4	5	3	3
P11					4	4
P15	2	4	4	5	5	5