AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Normed Spaces and Inner Product Spaces								
Course Code	MTK567		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	7	Workload	175 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	This course aims to acquaint students with the fundamental notions of Normed and Inner Product Spaces including Normed linear spaces, linear subspaces, infinite series, convex sets, linear functionals, finite-dimensional spaces, dual space and second dual space, weak convergence, inner product spaces, orthogonal complements, Fourier series, Riesz representation theorem								
Course Content	Normed linear spaces, linear subspaces, infinite series, convex sets, linear functionals, finite-dimensional spaces, dual space and second dual space, weak convergence, inner product spaces, orthogonal complements, Fourier series, Riesz representation theorem								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)	Assoc. Prof. Emrah YILDIRIM, Prof. Hülya İNCEBOZ								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading	
1	Topology and Normed Spaces, G. J. O. Jameson.

Week	Weekly Detailed Course Contents	
1	Theoretical	Normed linear spaces
	Preparation Work	Relevant part of course book should be read
2	Theoretical	Linear subspaces
	Preparation Work	Relevant part of course book should be read
3	Theoretical	Infinite series
	Preparation Work	Relevant part of course book should be read
4	Theoretical	Convex sets
	Preparation Work	Relevant part of course book should be read
5	Theoretical	Linear functionals
	Preparation Work	Relevant part of course book should be read
6	Theoretical	Finite-dimensional spaces
	Preparation Work	Relevant part of course book should be read
7	Theoretical	Dual space and second dual space
	Preparation Work	Relevant part of course book should be read
8	Theoretical	Weak convergence
	Preparation Work	Relevant part of course book should be read.
9	Theoretical	Inner product spaces
	Preparation Work	Relevant part of course book should be read
10	Intermediate Exam	Midterm Exam
11	Theoretical	Inner product spaces
	Preparation Work	Relevant part of course book should be read
12	Theoretical	Orthogonal complements
	Preparation Work	Relevant part of course book should be read
13	Theoretical	Fourier series
	Preparation Work	Relevant part of course book should be read
14	Theoretical	Riesz representation theorem
	Preparation Work	Relevant part of course book should be read

15	Theoretical	Riesz representation theorem
	Preparation Work	Relevant part of course book should be read
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 to comprehend Normed spaces
2	To be able to comprehend İnner product spaces
3	To be able to develop mathematical sense
4	To be able to use mathematical concepts in solving certain types of problems
5	To be able to gain the skill of interpreting some interrelations among these concepts

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
P1	4	4	5	5	4
P3	5	5	4	4	4
P5	4	4		4	4
P7			4	4	
P9	4	4		4	4
P13			2	2	2
P15	3	3			