AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Minimal Submanifolds								
Course Code	MTK516		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Our aim is to give some related topics in minimal submanifold.								
Course Content	Differentiable Manifolds,second fundamental form,mean curvature,minimal submanifolds on the sphere,rigidity teorems, Gauss map,minimal hypersurfaces								
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	Xin,Yuanling, Minimal Submanifolds and Related topics, World Scientific

Week	Weekly Detailed Course Contents	
1	Theoretical	Define manifold
2	Theoretical	Define topologies of submanifolds
	Preparation Work	Solve the problems and examples
3	Theoretical	Second fundamental form
	Preparation Work	Solve the problems and examples
4	Theoretical	The mean curvature
	Preparation Work	Solve the problems and examples
5	Theoretical	Minimal submanifold s in Euclidean spaces
	Preparation Work	Solve the problems and examples
6	Theoretical	Minimal submanifold s in the sphere
	Preparation Work	Solve the problems and examples
7	Theoretical	Examples
8	Preparation Work	Solve the problems and examples
9	Theoretical	Solve the problems about what he has
	Preparation Work	Solve the problems and examples
10	Theoretical	Rigidity theorems
	Preparation Work	Solve the problems and examples
11	Theoretical	Gauss map
12	Preparation Work	Solve the problems and examples
	Intermediate Exam	Midterm
13	Theoretical	The Weierstrass representation
	Preparation Work	Solve the problems and examples
14	Theoretical	Minimal hypersurfaces
	Preparation Work	Solve the problems and examples
15	Theoretical	Solve the problems about what he has
	Preparation Work	Solve the problems and examples
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	20	2	22
Midterm Examination	1	40	2	42
Final Examination	1	50	2	52
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To be able to define topolojical and differentiable manifold
2	To be able to define minimal submanifolds on the Euclidean space
3	To be able to comprehend minimal submanifolds on the sphere
4	To be able to define minimal hypersurfaces
5	To be able to write Gauss map

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	5	5	5	5	5
P2	2	2	2	2	2
P3	5	5	5	5	5
P4	1	1	1	1	1
P6	1	1	1	1	1
P9	3	3	3	3	3
P15	4	4	4	4	4