AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Riemann Surfaces								
Course Code	MTK555		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The purpose of this course is to present the students with the subjects in the course content at the graduate level								
Course Content	Basic concepts, isometry group of the hyperbolic plane and its discrete subgroups, NEC groups and Fuchsian groups, lattices and tori, hyperbolic translations and Riemann surfaces of genus greater than one, triangle groups and platonic Riemann surfaces, automorphisms of Riemann surfaces, hyperelliptic Riemann surfaces, symmetric Riemann surfaces								
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	Jones G.A. and Singerman D. (1987) Complex Functions, Cambridge University Press
2	Katok S. (1992) Fuchsian groups, The University of Chicago Press

Week	Weekly Detailed Course Contents	
1	Theoretical	Riemann surfaces
2	Theoretical	Riemann sphere
3	Theoretical	Lattices and tori
4	Theoretical	Isometry group of the hyperbolic plane and its discrete subgroups
5	Theoretical	Fuchsian groups and quotient spaces
6	Theoretical	Hyperbolic translations and Riemann surfaces
7	Theoretical	Compact Riemann surfaces
8	Intermediate Exam	MIDTERM EXAM
9	Theoretical	Automorphisms of Compact Riemann surfaces
10	Theoretical	Automorphisms of Compact Riemann surfaces
11	Theoretical	Hyperelliptic Riemann surfaces
12	Theoretical	Symmetric Riemann surfaces and NEC groups
13	Theoretical	Triangle groups and platonic Riemann surfaces
14	Theoretical	Hurwitz, Accola-Maclachlan and Wiman surfaces
15	Theoretical	Hurwitz, Accola-Maclachlan and Wiman surfaces
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 the concept of a Riemann surface
2	To be able to explain isometry group of the hyperbolic plane, NEC groups and Fuchsian groups
3	To be able to obtain tori by means of two linearly independent translations in the Euclidean plane
4	To be able to obtain Riemann surfaces of genus greater than one by means of hyperbolic translations
5	To be able to explain the automorphisms of Riemann surfaces
6	To be able to express platonic, hyperelliptic and symmetric Riemann surfaces

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	2	2	2	2	2	2
P2	4	4	4	4	4	4
P3	3	3	3	3	3	3
P4	2	2	2	2	2	2
P5	1	1	1	1	1	1
P9	3	3	3	3	3	3
P14	2	2	2	2	2	2
P15	1	1	1	1	1	1