RIEMANN SURFACES I

1	Course Title:	RIEMANN SURFACES I	
2	Course Code:	MAT6103	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. OSMAN BİZİM	
15	Course Lecturers:	Prof. Dr. Osman Bizim	
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Fen-Edebiyat Fakültesi Matematik Bölümü, Görükle Bursa-TÜRKİYE 0 224 294 17 57 / obizim@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	The aim of the course is to give basic properties of the theory of the Riemann surfaces. So have the ability conduct original research for future studies.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learns algebraic functions, meromorphic functions and analytic functions.
		2	Learns topological spaces, topological transformation groups and manifolds.
		3	Learns elliptic functions and periodic functions.
		4	Learns general properties of elliptic functions.
		5	Learns analytic and meromorphic continuation.
		6	Learns the Monodromy theorem, fundamental group, branch point and monodromy group.
		7	Learns Riemann surfaces and Riemann surfaces of some special functions.
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Algebraic functions, meromorphic functions and analytic functions and their properties.	

2	Topological spaces, topological transformation groups and manifolds and their properties.	
3	Elliptic functions, periodic and double periodic functions, lattices and fundamental regions.	
4	Topological properties of elliptic functions.	
5	Uniform and normal convergence of function series and sequences and their properties.	
6	Weierstrass Pi function and its properties.	
7	The field of elliptic functions and its properties.	
8	The construction of elliptic functions with given properties.	
9	Topological properties of double periodic elliptic functions.	
10	Meromorphic, analytic and mero-morphic continuation along a path and their properties.	
11	Analytic continuation with power series.	
12	Regular and singüler points and their properties, the Monodromy theorem and its properties.	
13	The fundamental group and its properties.	
14	The Riemann surfaces and its properties.	

22	Textbooks, References and/or Other	[1] Introduction to Riemann Surfaces, G. Springer,

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	5.00	70.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	14	5.00	70.00
Final Exams	1	13.00	13.00
Total Work Load			195.00
ECTS Credit of the Course			5.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Quiz	0	0.00
Final Exam	1	100.00
Contribution of Term (Year) Learning Activities to		0.00
Contribution of Final Exam to Success Grade		100.00
Total work load/ 30 hr		6.50
Measurement and Evaluation Techniques Used in the		

24 ECTS / WORK LOAD TABLE

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK2	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK3	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK4	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0

ÖK5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK6	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0
ÖK7	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**