

RIEMANN SURFACES II

1	Course Title:	RIEMANN SURFACES II	
2	Course Code:	MAT6104	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
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 the sheaf of germs of meromorphic functions, Riemann surfaces of algebraic functions.
		2	Learns orientable and non-orientable Riemann surfaces.
		3	Learns compact Riemann surfaces and their genus.
		4	Learns automorphisms of Riemann surfaces and conformal equivalences of Riemann surfaces.
		5	Learns covering surfaces of Riemann surfaces, differentials of second order, surface integrals.
		6	Learns harmonic and analytic differentials.
		7	Learns Hilbert spaces of differentials, the existence theorem of harmonic and analytic differentials.
		8	
		9	
		10	
21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	The sheaf of germs of meromorphic functions, Riemann surfaces of algebraic functions		

2	Orientable and non-orientable Riemann surfaces and their properties	
3	Compact Riemann surfaces and their genus	
4	Automorphisms of Riemann surfaces and conformal equivalences of Riemann surfaces	
5	Covering surfaces of Riemann surfaces, differentials of second order, surface integrals	
6	Harmonic and analytic differentials and their properties	
7	Harmonic and analytic differentials, Hilbert spaces of differentials and their properties	
8	The existence theorem of harmonic and analytic differentials, the Riemann-Roch theorem	
9	Construction Riemann surfaces of logarithm function and its properties	
10	Construction Riemann surfaces of polynomial and root functions and their properties	
11	Riemann surfaces of algebraic functions and their properties	
12	Conformal equivalences of Riemann surfaces	
13	Automorphisms of Riemann surfaces and their properties.	
14	Conformal equivalence of tori and covering surfaces of Riemann surfaces and their properties	
22	Textbooks, References and/or Other Materials:	[1] Introduction to Riemann Surfaces, G. Springer, [2] Complex Functions, G.A. Jones, D. Singerman.
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBER
		WEIGHT
Midterm Exam		0
Quiz		0
Homeworks, Performances		0
Final Exam		1
Total		1
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		100.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		
24	ECTS / WORK LOAD TABLE	

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, Performances	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
Total work load/ 30 hr			6.50
ECTS Credit of the Course			5.00

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							