REEL ANALYSIS I

1	Course Title:	REEL ANALYSIS I
2	Course Code:	MAT5101
3	Type of Course:	Compulsory
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
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 this course is to review student's undergradute analysis courses and to correct the deficiencies. So students can be su have succsessful in graduate studies.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Learns the real number system, Euclidean Spaces, metric spaces, basic topological properties of R.
	2	Learns compact and connected sets and their properties, sequences and series.
	3	Learns power series, absolute convergence.
	4	Learns countinuity and continous functions and their properties
	5	Learns differentiation and properties of the differentiable functions.
	6	Learns The Riemann-Stieltjes integral and its properties.
	7	Learns sequences and series of functions and their properties, uniform convergence,
	8	
	9	
	10	

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	The real and complex number system, Euclidean Spaces, metric spaces and their properties	

2	Basic topological properties of R, compact and connected sets and their properties	
3	Sequences and series in R and C, and their properties	
4	Power series and absolute convergence, addition and multiplicatio of series	
5	Countinuity and continous functions and their properties	
6	Differentiation and properties of the differentiable functions	
7	Mean value theorem and its applications	
8	Vector-valued functions and their properties	
9	The Riemann-Stieltjes integral and its properties	
10	Integration of vector-valued functions	
11	Sequences and series of functions and their properties, uniform convergence, The Stone-Weierstrass theorem, some special functions.	
12	Uniform convergence of sequences and series of functions	
13	The Stone-Weierstrass theorem and its applications	
14	Some special functions, the exponential and the logarithmic functions, the trigonometric functions, Fourier series, the Gamma function and their properties	

22	Textbooks, References and/or Other Materials:	[1] Principles of Mathematical Analysis, W. Rudin, [2] Real and Complex Analysis, W. Rudin, [3] Real Analysis, H. L. Royden, [4] Introduction to Real Analysis, W. F. Trench.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	100.00
Total	1	100.00
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	10.00	140.00
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	18.00	18.00
Total Work Load			270.00
Total work load/ 30 hr			9.00
ECTS Credit of the Course			6.00

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**				