METRIC SPACES

1	Course Title:	METRIC SPACES
2	Course Code:	MAT2028
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	4.00
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:	Doç. Dr. AYSUN YURTTAŞ GÜNEŞ
15	Course Lecturers:	Doç. Dr. Yeliz KARA ŞEN
16	Contact information of the Course Coordinator:	Uludag University, Art and Science Faculty Department of Mathematics, 16059 Görükle Bursa-TURKEY 0 224 294 17 69/ ayurttas@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of the course is to make the students gain the basic subjects of the metric sapaces and normed spaces. The goals are to teach the metric spaces, normed spaces and topological spaces, their examples and properties. To teach the related notions and results so that the students can make their applications, and let them know about the historical background of the topics.
19	Contribution of the Course to Professional Development:	Students have the necessary equipment about toplogy courses in undergraduate education.
20	Learning Outcomes:	

	1	Learns metric spaces, normed spaces, topology and topological spaces.
	2	Learns the interior, the exterior, the boundary and the closure of a set in metric, normed and topological spaces.
	3	Learns sequences and convergence of the sequences in the metric and normed sapaces.
	4	Learns continuity of functions in metric and normed spaces.
	5	Learns complete metric spaces.
	6	
	7	
	8	
	9	
	10	

21	Course Content:	
	Course Content:	
Week	Theoretical	Practice

1	Metric spaces, their properties and examples.	
2	Normed spaces, their properties and examples.	
3	Open and closed sets in metric and the normed spaces.	
4	Accumulation and closure points of metric and normed spaces.	
5	Sequences and their convergence in metric and normed spaces.	
6	Submetric and subnormed spaces, their properties and examples.	
7	Continuity and uniform continuity in metric and normed spaces.	
8	Midterm exam.	
9	Equivalent metrics and their properties.	
10	Complete metric spaces and their properties.	
11	The completions of metric spaces.	
12	Topological spaces, their properties and examples.	
13	Open and closed sets in topological spaces.	
14	Accumulation and closure points of topological spaces.	

22	Textbooks, References and/or Other Materials:	[1] Topoloji, O. Bizim [2] Topoloji, O. Mucuk [3] Genel topoloji, N. Yıldız [4] Topology, J. Munkers
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		The system of relative evaluation is applied.

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	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	25.00	25.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

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	4	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	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**