SET THEORY

1	Course Title:	SET THEORY
2	Course Code:	MAT2020
3	Type of Course:	Optional
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:	Prof. Dr. BASRİ ÇELİK
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	basri@uludag.edu.tr 0224.2941762
17	Website:	
18	Objective of the Course:	Learns to essentials of set theory and establish the set of natural numbers and other number sets as a mathematical structure.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Knows the concept of set.
	2	Calculates the set operations.
	3	Knows the cardinals of finite and infinite sets.
	4	Knows the concept of ordered sets and equivalent ordered sets.
	5	Can construct the set of Natural numbers with using Peano axioms.
	6	Can construct the set of Natural numbers with using Cardinal numbers.
	7	Knows how to define operations in natural numbers.
	8	Can construct the set of integers.
	9	Can construct the set of rational numbers.
	10	Improves the ability of abstract thinking.

21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Description of course	
2	Cardinal numbers and operations with them.	
3	Construction of the set of Natural numbers with cardinal numbers.	
4	The proof of Induction Theorem and its applications.	

5	Functions.	
6	Combinatoric calculations.	
7	Construction of the set of Natural numbers with axioms of Peano.	
8	The differences between the two methods used in the construction of the set of Natural numbers, and their results.	
9	Midterm and feedback	
10	Construction of the set of integers. Operations with integers.	
11	Construction of the set of rational numbers.	
12	Operations with rational numbers.	
13	Cardinality of infinite sets.	
14	Examples.	

22	Textbooks, References and/or Other Materials:	1)Abstract Algebra, Roger Godement, Hermann Publishers, 1968, Paris. 2)Soyut Matematik, Sait Akkaş, H. Hilmi Hacısalihoğlu, Zühtü Özel, Arif Sabuncuoğlu, gazi üniversitesi Yayın No:43, 1984, Ankara. 3)Sezgisel Kümeler Kuramı, Ali Nesin, Nesin Yayıncılık,2. Baskı, 2008, İstanbul.

Activites	Number	Duration (hour)	Total Work Load (hour)
Midterm Exam	1	40.00	
Theoretical	14	3.00	42.00
Quiz	0	0.00	
Practicals/Labs	0	0.00	0.00
Home work-project	0	0.00	
Self study and preperation	14	3.00	42.00
Final Exam	1	60.00	
Homeworks	0	0.00	0.00
Total	2	100.00	
Projects	0	0.00	0.00
Contribution of Term (Year) Learning Activities to		40.00	
Field Studies	0	0.00	0.00
Midterm exams	1	4.00	4.00
Contribution of Final Exam to Success Grade	60.00		
Others	14	2.00	28.00
Total		100.00	
Final Exams	1	4.00	4.00
Total Work Load			120.00
Total workload / 30 hr			4.00
ECTS Credit of the Course			4.00

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	2	5	1	4	5	1	1	3	3	2	0	0	0	0	0	0
ÖK2	3	4	1	2	4	1	2	2	2	1	0	0	0	0	0	0
ÖK3	1	4	1	3	4	1	2	3	1	1	0	0	0	0	0	0
ÖK4	2	4	1	2	4	1	2	3	2	1	0	0	0	0	0	0

ÖK5	2	5	1	2	5	1	1	2	2	1	0	0	0	0	0	0
ÖK6	1	4	1	3	4	1	2	3	0	0	0	0	0	0	0	0
ÖK7	3	5	1	3	5	1	3	2	2	2	0	0	0	0	0	0
ÖK8	1	3	1	2	4	1	3	3	2	1	0	0	0	0	0	0
ÖK9	2	4	1	4	4	1	2	2	3	1	0	0	0	0	0	0
ÖK10	1	5	1	3	5	1	1	2	2	1	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**