ABSTRACT MATHEMATICS

1	Course Title:	ABSTRACT MATHEMATICS	
2	Course Code:	İMT1009	
3	Type of Course:	Compulsory	
4	Level of Course:	First 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:	Doç. Dr. Atilla Akpınar	
15	Course Lecturers:	Doç.Dr. Atilla AKPINAR	
16	Contact information of the Course Coordinator:	E-posta: aakpinar@uludag.edu.tr Telefon: +90 224 2941774 Adres: Uludağ Üniversitesi Fen-Edebiyat Fakültesi Matematik Bölümü 16059 Görükle-Bursa-TÜRKİYE	
17	Website:		
18	Objective of the Course:	To introduce the basic concepts of mathematics on sets. To able to use mathematics' language. To establish the relationship between spoken language and mathematical language.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Knows detailed information about propositions.
		2	Knows the proving methods.
		3	Students can apply the propositions to basic electric circuits.
		4	Knows open propositions.
		5	Learns the basic information which will be used in set theory.
		6	Learns the logic of quantifiers.
		7	Recognizes the subset, universal set, union of sets, intersection of sets, complement of a set, and the sets of difference and their properties.
		8	Learns the ordered tuples, cartesian product, graphic, relation, the inverse of a relation and their properties.
		9	Learns finest details about graphics and relations, functional relation, function, one to one and onto functions, inverse of a function and permutations.
		10	Learns the image and inverse image properties and the numerical properties of relations and functions.
21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	
1	Description of course.		

2	Mathematical propositions.	
3	Methods of proof. Showing a truth of propositions.	
4	Application of propositions to electric circuits.	
5	Open propositions. Introduction to the concept of set.	
6	The logic of quantifiers.	
7	Subset and universal set.	
8	Union, intersection, complement and difference sets and their properties. Membership table, family of sets and operations.	
9	Midterm and feedback	
10	Ordered tuples, Cartesian product, graphics and their properties.	
11	Relation, graphic and the inverse of a relation.	
12	Composition of graphics and relations, functional relations and functions.	
13	One to one and onto functions. Inverse of a function. Permutations.	
14	Image properties under functions and its inverse. Numeric properties of relations and functions.	

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	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	16.00	16.00
Others	11	8.00	88.00
Final Exams	1	22.00	22.00
Total Work Load			210.00
Total work load/ 30 hr			7.00
ECTS Credit of the Course			5.00

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Zühtü Özel, Arif Sabuncuoğlu, gazi üniversitesi Yayın No:43, 1984, Ankara

23	Assesment	
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	Midterm Exam	40.00
	Quiz	0.00
	Final Exam	60.00
	Home work project	0.00
	Final Exam	60.00
	Total	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	
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	3	1	5	2	5	1	5	1	3	2	1	1	1	1	2	1

ÖK2	3	2	4	2	5	1	5	2	1	1	1	1	1	3	1	1
ÖK3	2	2	4	3	5	1	5	1	2	1	1	1	1	1	3	1
ÖK4	2	2	5	2	5	1	5	2	2	2	1	1	1	1	3	1
ÖK5	2	1	4	2	5	1	5	2	2	1	1	1	1	1	2	1
ÖK6	3	1	5	3	4	1	5	1	3	1	1	1	1	1	2	1
ÖK7	3	1	5	3	5	1	4	2	2	2	1	1	1	1	3	1
ÖK8	3	2	4	2	4	1	4	1	3	1	1	1	1	1	2	1
ÖK9	2	2	5	2	4	1	5	2	3	1	1	1	1	1	3	1
ÖK10	3	1	4	3	5	1	4	2	2	1	1	1	1	1	3	1

LO: Learning Objectives PQ: Program Qualifications

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