Tarih: 3 Şubat 2026 19:01

Year

Department of Mathematics Education / Department of Mathematics and Science Education /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
İMEAE 106	ABSTRACT MATHEMATICS	2.00	0.00	0.00	2.00	5.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	Bachelor
Course Type	:	Compulsory
Preconditions	:	Not
Objectives of the Course	:	To ensure that prospective teachers develop the basic concepts of mathematics such as logic, proof, set, relation, function and their operational and conceptual skills regarding these concepts.
Course Contents	:	This course covers Symbolic logic and proof techniques; It covers sets, algebra of sets, relations, functions.
Recommended or Required Reading	:	1.Soyut Matematik Ders Notları, Hüseyin Bilgiç 2.Arıkan, A., Halıcıoğlu, S. (2016) . Soyut matematik, palme yayıncılık.
Planned Learning Activities and Teaching Methods	:	Lecture; Discussion; Brainstorming; Question-answer; Case study
Recommended Optional Programme Components	:	There are no suggested topics for the course.
Course Instructors	:	Prof. Dr. Şenol Kartal
Instructor's Assistants	:	It is not available
Presentation Of Course	:	Face to face
Update Date	:	2/3/2026 6:56:51 PM
Dosya İndirilme Tarihi	:	2/3/2026

Course Outcomes

Upon the completion of this course a student :

1 Knows symbolic logic and proof techniques and makes different proof applications.

2 Comprehends set, algebra of sets, sets of sets, fragmentation of set sets, product sets, makes different applications and proves theorems related to them.

3 Understands the relation, the reverse of the relation, the resultant of the relations and makes different applications.

4 It defines equivalence and order relation and explains and exemplifies some basic concepts such as partially ordered set, fully ordered set.

5 Knows the concept of function, which is a special relation, as well as some special concepts such as surjective and one-to-one functions, and proves theorems related to them.

Pre / Side Conditions

Course Code	Course Name	Condition	Teorical	Practice	Laboratory	Credits	ECTS

Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*Symbolic Logic and Proof Techniques			*1. Study the topics "Propositions and Proof Methods" between pages 1-5 in your source book.		Ö.Ç.1
2.Week	*Symbolic Logic and Proof Techniques			*Study the topics "Propositions and Proof Methods" between pages 5-8 in your source book.		Ö.Ç.1
3.Week	*Concept of set, intersection and union of sets			*Study the topics "Set concept, intersection and union of sets" between pages 14-15 in your Primary Source book.		Ö.Ç.2
4.Week	*Subset and its properties			*Study the "Subset" topics between pages 16-18 in your Primary Source book.		Ö.Ç.2
5.Week	*Complement of a Set			*Study the topics "Complement of a Set" between pages 20-22 in your Primary Reference book.		Ö.Ç.2
6.Week	*Difference of two sets, Finite and Infinite sets			*Study the topics "Difference of Two Sets, Finite and Infinite Sets" between pages 22-24 in your Primary Source book.		Ö.Ç.2
7.Week	*Relation and its properties			*Study the topics "Relations and Their Properties" between pages 29-37 in your Primary Source book.		Ö.Ç.3
8.Week	*Midterm Exam					
9.Week	*Equivalence Relation			*Study the topics "Equivalence Relations" on pages 42-49 in your Primary Source book.		Ö.Ç.3
10.Week	*Equivalence Relation			*Study the topics "Equivalence Relations" on pages 42-49 in your Primary Source book.		Ö.Ç.3
11.Week	*Ordering Relation			*Study the topics "Order Relation" between pages 50-57 in your Primary Source book.		Ö.Ç.3 Ö.Ç.4
12.Week	*Concept of Function			*Study the "Function Concept" topics between pages 61-63 in your Primary Source book.		Ö.Ç.5
13.Week	*Inverse of a Function			*Study the topics "Inverse of a Function" on pages 64-65 in your Primary Reference book.		Ö.Ç.5
14.Week	*One-to-One and Onto Functions			*Study the topics "One-to-One and Onto Functions" between pages 65-67 in your Primary Reference book.		Ö.Ç.5
15.Week	*Composition of Functions			*Study the topics "Composition of Functions" between pages 68-71 in your Primary Reference book.		Ö.Ç.5 Ö.Ç.5 Ö.Ç.5

Assesment Methods %

1 Ara Sınav : 40.000

3 Final : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Final	1	1.00	1.00
Final Sınavı Hazırlık	12	2.00	24.00
Vize	1	1.00	1.00
Ders Öncesi Bireysel Çalışma	12	2.00	24.00
Derse Katılım	12	2.00	24.00
Ders Sonrası Bireysel Çalışma	12	2.00	24.00
Teorik Ders Anlatım	12	2.00	24.00
Uygulama / Pratik	12	2.00	24.00
		Total :	146.00
		Sum of Workload / 30 (Hour) :	5
		ECTS :	5.00

Program And OutcomeRelation

	P.O.1	P.O.2	P.O.3	P.O.4	P.O.5	P.O.6	P.O.7	P.O.8	P.O.9	P.O.10	P.O.11	P.O.12	P.O.13	P.O.14	P.O.15	P.O.16	P.O.17	P.O.18	P.O.19	P.O.20	P.O.21	P.O.22	P.O.23	P.O.24
	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 2
L.O. 1	0	0	5	0	0	0	5	0	0	4	0	4	0	0	0	0	0	2	0	0	0	0	0	0
L.O. 2	0	0	5	0	0	0	5	0	0	4	0	4	0	0	0	0	0	2	0	0	0	0	0	0
L.O. 3	0	0	5	0	0	0	5	0	0	4	0	4	0	0	0	0	0	2	0	0	0	0	0	0
L.O. 4	0	0	5	0	0	0	5	0	0	4	0	4	0	0	0	0	0	2	0	0	0	0	0	0
L.O. 5	0	0	5	0	0	0	5	0	0	4	0	4	0	0	0	0	0	2	0	0	0	0	0	0
Avarage	5.00	5.00	3.80	0.00	4.00	0.00	4.20	2.00	0.00	3.00	0.00	5.00	0.00	1.00	0.00	0.00	3.00	3.00	0.00	0.00	3.00	0.00	0.00	0.00

Ders/Program Çıktıları İlişkisi

P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24
25	25	19	0	20	0	21	10	0	15	0	25	0	5	0	0	15	15	0	0	15	0	0	0

BEWARE OF PLAGIARISM! Please pay attention to proper academic citation rules and avoid plagiarism, an unethical and academically fraudulent behavior, when completing reports, assignments, or other academic works, and it is treated with the same disciplinary action as cheating in a classroom setting. It is imperative to refrain from presenting another person s ideas, language, expressions, or any other form of intellectual property as your own. Regardless of quality, your assignments/projects/research should reflect your original work. Perfection is not a requirement, and in case of any uncertainties regarding academic writing guidelines, you may seek clarification from your course instructor.

Engel Durumu/Uyarlama Talebi : Engel durumuna ilişkin herhangi bir uyarlama talebinde bulunmak isteyen öğrenciler, dersin öğretim elemanı ya da Nevsehir Engelli Öğrenci Birimi ile en kısa sürede iletişime geçmelidir.