

Year

Department of Electricity and Energy / Department of Electricity and Energy /						
Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
AEK102	VOCATIONAL MATHEMATİCS	3.00	0.00	0.00	3.00	3.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: PreBachelor					
Course Type	: Compulsory					
Preconditions	: Not					
Objectives of the Course	: To provide the ability to apply the mathematical knowledge and skills required for the profession.					
Course Contents	: Complex numbers, trigonometry, logarithms, derivatives and integrals					
Recommended or Required Reading	: Lecture Notes, Mathematics for Vocational Schools, Lecturer Dr. Birkan Durak, January 2021, Nobel Academic Publishing, Puza Mathematics- Puza Publishing December-2019 Ankara, General Mathematics with Solutions-2, Arif Sabuncuoğlu, June 2021, Nobel Academic Publishing, Basic and General Mathematics, Sıddık Arslan, August 2019, Nobel Academic Publishing					
Planned Learning Activities and Teaching Methods	: Lecture, problem-solving, applied learning, individual and group work, question-and-answer sessions, interactive learning, and assignment studies.					
Recommended Optional Programme Components	: No absences, no disruption of assigned homework and study questions					
Course Instructors	: Öğr. Gör. Tahir Karakoç					
Instructor's Assistants	:					
Presentation Of Course	: Face to face					
Update Date	: 2/7/2026 11:01:47 PM					
Dosya İndirilme Tarihi	: 2/7/2026					

Course Outcomes
Upon the completion of this course a student :
1 Can use complex numbers in professional areas.
2 Can use the logarithm in their vocational areas.
3 Can apply the rules of derivative in the professional field.
4 Can do integral applications in the professional field.
5 Can solve trigonometric problems.

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	*Angles, angle measurements, unit circle, and trigonometric functions.			*Study the lecture notes in the range of pages (1-10).	*Explanation, problem-solving, question-and-answer	Ö.Ç.5 Ö.Ç.5 Ö.Ç.5
2.Week	*Trigonometric ratios of angles in the unit circle and triangle, and inverse trigonometric functions.			*Study the lecture notes on pages (11-16) and (33-36).	*Explanation, problem-solving, question-and-answer	Ö.Ç.5 Ö.Ç.5 Ö.Ç.5
3.Week	*Trigonometric identities and transformation formulas			*Study the lecture notes on pages (51-59).	*Explanation, problem-solving, question-and-answer	Ö.Ç.5 Ö.Ç.5 Ö.Ç.5
4.Week	*Definition, properties, and operations on complex numbers.			*Study the lecture notes in the range of pages (85-96).	*Explanation, problem-solving, question-and-answer	Ö.Ç.1 Ö.Ç.1 Ö.Ç.1
5.Week	*Complex number representations, rotating complex numbers, and roots of complex numbers.			*Study the lecture notes on pages (96-103).	*Explanation, problem-solving, question-and-answer	Ö.Ç.1 Ö.Ç.1 Ö.Ç.1
6.Week	*Logarithm function: definition and properties			*Study the lecture notes on pages (117-123).	*Explanation, problem-solving, question-and-answer	Ö.Ç.2 Ö.Ç.2 Ö.Ç.2
7.Week	*Types of logarithms, logarithmic equations and inequalities.			*Study the lecture notes on pages (123-131).	*Explanation, problem-solving, question-and-answer	Ö.Ç.2 Ö.Ç.2 Ö.Ç.2
9.Week	*Definition and properties of derivatives.			*Study the lecture notes from pages (140-145).	*Explanation, problem-solving, question-and-answer	Ö.Ç.3 Ö.Ç.3 Ö.Ç.3
10.Week	*Rules for taking derivatives			*Study the lecture notes on pages (146-152).	*Explanation, problem-solving, question-and-answer	Ö.Ç.3 Ö.Ç.3 Ö.Ç.3
11.Week	*Rules for taking derivatives			*Study the lecture notes on pages (153-161).	*Explanation, problem-solving, question-and-answer	Ö.Ç.3 Ö.Ç.3 Ö.Ç.3
12.Week	*Indefinite integral: definition, properties, and integration rules.			*Study the lecture notes on pages (174-178).	*Explanation, problem-solving, question-and-answer	Ö.Ç.4 Ö.Ç.4 Ö.Ç.4
13.Week	*Integration methods			*Study the lecture notes from pages (179-190).	*Explanation, problem-solving, question-and-answer	Ö.Ç.4 Ö.Ç.4 Ö.Ç.4
14.Week	*Definite integrals and their properties.			*Study the lecture notes from pages (202-206).	*Explanation, problem-solving, question-and-answer	Ö.Ç.4 Ö.Ç.4 Ö.Ç.4
15.Week	*Area-volume relationships using integrals			*Study the lecture notes in page range (218-225).	*Explanation, problem-solving, question-and-answer	Ö.Ç.4 Ö.Ç.4 Ö.Ç.4

Assesment Methods %
1 Ara Sınav : 40.000
3 Final : 60.000

ECTS Workload			
Activities	Count	Time(Hour)	Sum of Workload
Ödev	14	1.00	14.00
Ara Sınav Hazırlık	2	5.00	10.00
Vize	1	1.00	1.00
Final Sınavı Hazırlık	2	5.00	10.00
Final	1	1.00	1.00
Teorik Ders Anlatım	3	14.00	42.00
Derse Katılım	4	1.00	4.00
Ders Öncesi Bireysel Çalışma	8	1.00	8.00
Total : 90.00			
Sum of Workload / 30 (Hour) : 3			
ECTS : 3.00			

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. 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
L.O. 1	4	0	2	1	4	1	1	2	0	0	3	3	5	2
L.O. 2	3	0	2	1	3	1	1	2	0	0	3	2	4	1
L.O. 3	3	0	2	1	5	1	1	3	0	0	5	3	3	1
L.O. 4	3	0	2	1	4	1	1	3	0	0	4	5	3	2
L.O. 5	4	0	2	1	4	1	1	2	0	0	3	3	5	2
Avarage	3.60	1.20	3.40	1.80	4.80	1.80	2.40	3.00	1.00	0.60	4.60	3.80	5.00	2.80

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	
1	6	7	4	4	4	7	3	5	3	5	3	5	6	

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 Nevşehir Engelli Öğrenci Birimi ile en kısa sürede iletişime geçmelidir.