Tarih: 2 Ekim 2025 10:38

Department of Electronics and Automation / Department of Electronics and Automation /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
KNT103	Direct Current Circuit Analysis	3.00	1.00	0.00	4.00	4.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	PreBachelor
Course Type	:	Compulsory
Preconditions	:	Not
Objectives of the Course	:	The aim of this course is to acquire the competencies of applying the principles of electric current and making solutions of all direct current electric circuits.
Course Contents	:	Resistance, Ohm's Law, Power, Series Circuits And Kirchoff's Voltage Law, Parallel Circuits And Kirchoff's Voltage Law, Series Parallel (Mixed) Circuits, Power Supplies, Circuit Solution Methods, Circuit Theorems, Capacitors, Direct Current Transient Analysis, Tests related to the subject.
Recommended or Required Reading	:	Ders Kitabı; 1) Selek, H. S. (2025). Doğru akım (DC) devre analizi. Seçkin Yayıncılık. 2) Özdemir, A. (2022). DC Devre Analizi (Elektroteknik 1). Ali Özdemir. 3) Karakoç, T. (2019). Doğru akım devre analizi. Seçkin Yayıncılık.
Planned Learning Activities and Teaching Methods	:	Presentation Method, Problem Solving Method, Experimentation Method
Recommended Optional Programme Components	:	Due to the course content, students must use a scientific calculator.
Course Instructors	:	Öğr. Gör. Dr. Yunus Kara
Instructor's Assistants	:	Öğr. Gör. Dr. Yunus KARA
Presentation Of Course	:	Face-to-face education
Update Date	:	9/4/2025 5:02:19 PM
Dosya İndirilme Tarihi	:	10/2/2025

Course Outcomes

Upon the completion of this course a student :

1 Can know the basic concepts of electricity.

2 Can make basic circuit solutions.

3 Can make complex electrical circuit solutions.

4 Can calculate the effects of direct current on the circuit elements.

Preconditions

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Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*The Structure of the Atom and Electric Charge.	*The Structure of the Atom and Electric Charge.	*The Structure of the Atom and Electric Charge.	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 1-19	*Presentation Method	Ö.Ç.1
2.Week	*Conductors, Insulators, and Semiconductors	*Conductors, Insulators, and Semiconductors	*Conductors, Insulators, and Semiconductors	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 20-38	*Presentation Method	Ö.Ç.1
3.Week	*Current, Voltage, and Resistance	*Current, Voltage, and Resistance	*Current, Voltage, and Resistance	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 39-51	*Presentation Method, Problem Solving Method	Ö.Ç.1
4.Week	*Ohm's Law and Kirchhoff's Law, Energy and Power	*Ohm's Law and Kirchhoff's Law, Energy and Power	*Ohm's Law and Kirchhoff's Law, Energy and Power	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 52-78	*Presentation Method, Problem Solving Method, Experimentation Method	Ö.Ç.1 Ö.Ç.2
5.Week	*Series Circuits	*Series Circuits	*Series Circuits	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 80-98	*Presentation Method, Problem Solving Method, Experimentation Method	Ö.Ç.2 Ö.Ç.2
6.Week	*Parallel Circuits	*Parallel Circuits	*Parallel Circuits	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 99-116	*Presentation Method, Problem Solving Method, Experimentation Method	Ö.Ç.2
7.Week	*Series–Parallel Mixed Circuits	*Series–Parallel Mixed Circuits	*Series–Parallel Mixed Circuits	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 117-162	*Presentation Method, Problem Solving Method, Experimentation Method	Ö.Ç.2 Ö.Ç.3
8.Week	*Environmental Currents Method	*Environmental Currents Method	*Environmental Currents Method	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 209-222	*Presentation Method, Problem Solving Method	Ö.Ç.3
9.Week	*Node voltage method	*Node voltage method	*Node voltage method	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 223-242	*Presentation Method, Problem Solving Method	Ö.Ç.3
10.Week	*Superposition Theorem	*Superposition Theorem	*Superposition Theorem	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 165-182	*Presentation Method, Problem Solving Method	Ö.Ç.3
11.Week	*Thevenin Theorem	*Thevenin Theorem	*Thevenin Theorem	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 183-198	*Presentation Method, Problem Solving Method	Ö.Ç.3
12.Week	*Norton Theorem	*Norton Theorem	*Norton Theorem	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 199-208	*Presentation Method, Problem Solving Method	Ö.Ç.3
13.Week	*Capacitors in DC Circuits	*Capacitors in DC Circuits	*Capacitors in DC Circuits	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 243-260	*Presentation Method, Problem Solving Method	Ö.Ç.3 Ö.Ç.4
14.Week	*Coils in DC Circuits	*Coils in DC Circuits	*Coils in DC Circuits	*Direct Current (DC) Circuit Analysis (Dr. Hasan Selçuk Selek), Pages 261-272	*Presentation Method, Problem Solving Method	Ö.Ç.3 Ö.Ç.4

Assesment Methods %

1 Ara Sınav : 40.000

3 Final : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	1.00	1.00
Final	1	1.00	1.00
Ara Sınav Hazırlık	3	5.00	15.00
Final Sınavı Hazırlık	3	5.00	15.00
Uygulama / Pratik	14	1.00	14.00
Teorik Ders Anlatım	14	3.00	42.00
Ders Öncesi Bireysel Çalışma	14	1.00	14.00
Ödev	9	2.00	18.00
		Total :	120.00
		Sum of Workload / 30 (Hour) :	4
		ECTS :	4.00

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
L.O. 1	4	0	0	0	1	1	1	0	1	0	0	0	0	0
L.O. 2	2	0	0	0	4	3	3	0	1	0	0	0	0	0
L.O. 3	1	0	0	0	4	3	3	0	0	0	0	0	0	0
L.O. 4	1	0	1	0	2	1	2	0	0	0	0	0	0	0
Avarage	2.00	0	0.25	0	2.75	2.00	2.25	0	0.50	0	0	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.