

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-2007	Basic Electronics	4.00	2.00	0.00	5.00	7.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: Bachelor					
Course Type	: Compulsory					
Preconditions	: Not					
Objectives of the Course	: This course aims to teach basic electronic circuit analysis methods.					
Course Contents	: There are two main part for his course: DC circuits and AC circuits. In DC part Kirchhoff, Mesh, Norton and Thevenin circuit analysis methods, in AC part AC practise of mentioned methods, filters and transformers are worked.					
Recommended or Required Reading	: Brophy, J.J., (Türkçesi: Zengin, M.), (1984) "Fenciler İçin Temel Elektronik ", Ankara Üniversitesi Basımevi, Fitzgerald, A.E., Highinbotham, D.E., and Grabel, A., (Türkçesi: Kıymaç, K.), (1982) "Temel Elektrik Mühendisliği", Ankara Üniversitesi Basımevi					
Planned Learning Activities and Teaching Methods	: Computer, projector, other					
Recommended Optional Programme Components	: -					
Course Instructors	: Prof. Dr. Serhat Özder					
Instructor's Assistants	: Res. Ass. Naci ERKAN					
Presentation Of Course	: Lectures, Homework, Discussion, Practice					

Course Outcomes

Upon the completion of this course a student :

1 Knowing that what the circuit
2 Knowing that what the circuit components
3 Learning the circuit analysis by using Kirchhoff mesh, Norton and Thevenin methods
4 Be able to analysis of the circuit devices
5 Learning filters for circuits
6 Learning to work of simple electronic devices
7 To make simple electronic devices

Preconditions

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Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week	*Ohm's Law, kirchhoff's equations, mesh's equations	*Ohm's Law, kirchhoff's equations, mesh's equations			
2.Week	*Voltage current sources, voltage current dividers	*Voltage current sources, voltage current dividers			
3.Week	*Thevenin and norton theorems	*Thevenin and norton theorems			
4.Week	*Superposition theorem, power and energy in resistive Networks	*Superposition theorem, power and energy in resistive Networks			
5.Week	*Maximum power transform	*Maximum power transform			
6.Week	*RC circuits	*RC circuits			
7.Week	*RC circuits	*RC circuits			
8.Week	*Characteristics of sinusoids, phasor presentation, kirchhoff's law in frequency domain	*Characteristics of sinusoids, phasor presentation, kirchhoff's law in frequency domain			
9.Week	*Impedance, Sinusoidal steady state solutions by phasor algebra, average, rms values of current, voltage and power	*Impedance, Sinusoidal steady state solutions by phasor algebra, average, rms values of current, voltage and power			
10.Week	*Real and reactive power in time domain, real and reactive power in frequency domain, maximum power transfer theorem	*Real and reactive power in time domain, real and reactive power in frequency domain, maximum power transfer theorem			
11.Week	*RC, RL filters	*RC, RL filters			
12.Week	*RLC filters, the resonance phenomenon	*RLC filters, the resonance phenomenon			
13.Week	*Mutual inductance	*Mutual inductance			
14.Week	*Transformers	*Transformers			

Assesment Methods %

1 Mid Term Exam 1 : 20.000
2 Mid Term Exam 2 : 20.000
3 Final : 60.000

ECTS Workload			
Activities	Count	Time(Hour)	Sum of Workload
Final	1	2.00	2.00
Individual study after lecture	16	3.00	48.00
Preparation for midterm	2	14.00	28.00
Preparation for final	1	25.00	25.00
Attending lectures	14	6.00	84.00
Homework	6	2.00	12.00
Mid Term Exam 1	1	2.00	2.00
Mid Term Exam 2	1	2.00	2.00
Make-up	1	2.00	2.00
			Total : 205.00
			Sum of Workload / 30 (Hour) : 7
			ECTS : 7.00

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
L.O. 1	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 2	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 3	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 4	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 5	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 6	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4
L.O. 7	5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4

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	P.O. 2
5	4	5	4	3	3	2	2	4	3	2	3	4	3	5	3	4	3	4	2	3	4	2	4	2