

Course Name	Course Code	Semester	T + P	Credit	ECTS
Electric Circuits		2	2 + 2	3	5

Prerequisite Courses	None
----------------------	------

If the language of Code	Turkish
Course class	Compulsory
If the Coordinator of Code	
Instructor	
Assistant Course	No
Objective of Course	The electrical concept needed in computer engineering department, infrastructure information and basic analysis methods of electrical circuits.
Course Learning Output	The students completed the course: <ul style="list-style-type: none"> • Ability to explain the basic concepts of correct and alternating current circuits • The ability to analyze steady-state condition of linear circuits is gained.
Contents Course	Explanation of resource transformations and superposition theory, Removal of Thevenin and Norton circuits. Performing maximum power transfer calculations.

Weeks	Topics
1	Concepts in Electricity: Atoms and Electrons, Electric Charge, Current, Voltage, Energy and Power; Electric Circuit; Open and Short Circuit Concepts; Resistance and Ohm's Law;
2	Serial and Parallel Connection; Dependent and Independent Current and Voltage Sources; Ideal and Real Resources, Passive Sign System; Kirchhoff's Laws.
3	Superposition Theory
4	Analysis Methods: Environmental analysis, Node point analysis.
5	Thevenin and Norton Equivalent Circuits; Power Transfer. Resource Transformations;
6	Thevenin and Norton Equivalent Circuits; Power Transfer. Resource Transformations;
7	Capacitance and Inductance; Investigation of Time Constant, Filling and Discharge under Direct Current
8	MIDTERM
9	Investigation of Time Constant, Filling and Discharge under Direct Current
10	Semi-conductors; Diode and Some Diode Circuits
11	Alternating Current Circuits. Concept of the Fazer; Impedance and Admittance; AC Circuit Solutions
12	Average and Effective Values. Average, Active, Reactive and Complex Powers; Power Factor; Compensation.
13	Average, Active, Reactive and Complex Powers
14	Power Factor; compensation
15	FINAL EXAM

General Sufficiency
Mathematical substructure: Complex numbers, polar representation
References
<ul style="list-style-type: none"> • Hayt, W.H. , J.E.Kemmerly, Engineering Circuit Analysis, McGraw-Hill Kogakusha Ltd. • Anant Agarwal and Jeffrey H. Lang. foundations of Analog and Digital ElectronicCircuits, Morgan Kaufmann Publishers
Assessment
Midterm: 40% Final exam: 60% of the project or assignment can be made and announced at the beginning of the semester evaluations.