Aydın Adnan Menderes University
Electrical and Electronics Engineering Department
EE201 – CIRCUIT THEORY I (2026-2027, Fall)

Instructors

Dr. Yılmaz KALKAN (Section AA01) / Dr. İsmail YARİÇİ (Section AA02)

Schedule

Tuesday 08:30 - 12:15 (Section AA01 **@MA212**) (Section AA02 **@MA106**)

Office Hours

Wednesday 09:30-11:30, Office: C-319 (Section AA01)
Tuesday 13:30-15:30, Wednesday 13:30-15:30, Office: C-318 (Section AA02)
(!!!!! No office hours in exam weeks.)

Textbook

1. Electric Circuits, J. W. Nilsson and S. A. Riedel, Pearson Prentice Hall.

Reference Books

1. Fundamentals of Electric Circuits, C. K. Alexander and M. N. O. Sadiku, McGraw-Hill Book Company.
2. Linear and Nonlinear Circuits, L. O. Chua, C. A. Desoer, E. S. Kuh, McGraw-Hill Book Company.

Grading

Midterm	**: 25%**
Final	**: 60%**
Homeworks	**: 10%**
Attendance	**: 5%**

Grade	Letter	Grade	Letter	Important Dates (~approximately)
95 – 100	A1	65 – 69	C1	
90 – 94	A2	60 – 64	C2	Midterm: In MT weeks (announced later)
85 – 89	A3	55 – 59	C3	
80 – 84	B1	50 – 54	D1	
75 – 79	B2	0 – 49	F1	Final: In Final weeks 11-24 Jan. 2027
70 – 74	B3	Irregular	F2	

- For midterm and final exams, scores greater than 49 will be multiplied with a constant multiplication factor (μ) where **μ=100/(maximum score in that exam.) (and max μ=1.3)**
- Final score must be greater than or equal to **50 (without scaling) to pass this course.**

Course Outline

I. Basic Concepts (Chapter 1 of Nilsson - 3 Hrs.)

1. Introduction
2. System of Units
3. Current and Voltage
4. The Ideal Basic Circuit Element
5. Power and Energy

II. Basic Laws (Chapter 2&3 of Nilsson - 3 Hrs.)

1. Voltage and Current Sources
2. Ohm's Law
3. Kirchhoff's Laws
4. Resistors in parallel and in series
5. Voltage and Current Division

III. Techniques of Circuit Analysis (Chapter 4 of Nilsson - 12 Hrs.)

1. Node Analysis
   a. Node-Voltage Method and Dependent Sources

   b. Some Special Cases
2. Mesh Analysis
   a. Mesh-Current Method and Dependent Sources
   b. Some Special Cases
3. Source Transformations
4. Thevenin and Norton Equivalents
5. Maximum Power Transfer
6. Superposition Theorem

IV. Operational Amplifier (Chapter 5 of Nilsson - 6 Hrs.)

1. Op-Amp Terminals
2. Ideal Op-Amp
3. Basic Op-Amp Circuits
   Buffer circuit, Inverting and Non-inverting Amplifiers, Summing Inverter, Difference Amplifier,
4. Cascade Op-Amp Circuits

V. Capacitors and Inductors (Chapter 6 of Nilsson - 3 Hrs.)

1. Inductors
2. Capacitors
3. Series and Parallel Combinations of Inductors and Capacitors

VI. First Order Circuits (Chapter 7 of Nilsson - 6 Hrs.)

1. First Order Linear Differential Equations with Constant Coefficients
2. The Natural Response of an RL Circuit
3. The Natural Response of an RC Circuit
4. The Step Response of RL and RC Circuits
5. A General Solution for Step and Natural Responses
6. Integrating Amplifier Circuit

VII. Second Order Circuits (Chapter 8 of Nilsson - 6 Hrs.)

1. The Natural Response of a Parallel RLC Circuit
2. The Forms of Natural Response of a Parallel RLC Circuit
3. The Step Response of a Parallel RLC Circuit
4. The Natural and Step Responses of a Series RLC Circuit

Homeworks

Usually there is a homework for each 2-3 weeks. **Homeworks won't be collected and evaluated.** They give idea about the exams. It is advised to you solving that questions before the exams by yourselves.

Expectations

We expect you to make an honest effort to do exams and submit on time. Also we expect that the work you submit to us under your name is yours. Interactions of students on the problems are useful and are encouraged, but each person should work on his/her solution. Copying from others is immature, dishonest and waste of everyone's time. **Attendance is mandatory**. A Student has to attend 70% of the lectures in a semester. If a student does not attend more than 30% of the lectures, it fails and it is not permitted to enter the final examination. (10 weeks/10 signs required) (**You need to attend at least 9 weeks**)

"Bir öğretim üyesinin güvenini kaybekmetense, not kaybetmeyi tercih edin ve kopya çekmeyin." Prefer to lose grade but do not loose reliance of any instructor, DO NOT CHEAT.