



T.C.
İSTANBUL TEKNİK ÜNİVERSİTESİ
FEN EDEBİYAT FAKÜLTESİ
FİZİK MÜHENDİSLİĞİ BÖLÜMÜ
MASLAK 34469 İSTANBUL



FIZ 233E Electronics I, 42 Total Hours– 2024/2025 Fall
INSTRUCTOR: Özgün Girgin, ogirgin@itu.edu.tr

COURSE OVERVIEW: This course provides the student with the fundamental skills to understand the basic of semiconductor and components like Diode, Transistor, FET, MOSFET and Operational Amplifier It will build mathematical and numerical background for design of electronics circuit & component value. Students equipped with the knowledge and training provided in the course will be able to participate in design, development and operation in the different area of electronics system.

TEXTBOOK:

Microelectronic Circuits, A.S. Sedra, K.C. Smith, 5th ed., Oxford Uni. Press, (2004).

Electronic Devices and Circuit Theory, R.L. Boylestad, L. Nashelsky, 10th ed., Pearson Int. Ed., (2009).

Integrated Electronics Analog Digital Circuits, Jacob Millman and D. Halkias, McGraw Hill

Week	Date	Topics
1	01-02 Oct 2024	Introduction to Electronic Circuit Elements
2	8-9 Oct 2024	Energy Levels and Energy Bands
3	15-16 Oct 2024	Semiconductors and Conduction in Semiconductors
4	22-23 Oct 2024	Semiconductor–diode
5	30 Oct 2024	Applications of Semiconductor-diodes
6	05 Nov 2024	Applications of Semiconductor-diodes and Special Types of Diodes
7	12-13 Nov 2024	Applications of Semiconductor-diodes and Special Types of Diodes
8	Fall Break	
9	26-27 Nov 2024	Transistor (BJT)
10	03-04 Dec 2024	Transistor (BJT) Biasing
11	10-11 Dec 2024	Applications of Transistors (BJT)
12	17 Dec 2024	Field Effect Transistors (FET)
13	24-25 Dec 2024	Field Effect Transistor (FET) Biasing
14	31 Dec 2024	Applications of Field Effect Transistors (FET)
15	07-08 Jan 2025	Operational Amplifiers

Exams

Midterm 1 : 06 Nov 2024, 11:30-12:30. (60 min)

Midterm 2 : 18 Dec 2024, 11:30-13:00. (90 min)

Final Exam : (13 – 26 Jan 2025) Exact date and time will be announced by the Student Administration Office.

Assessment of the Grades

Midterm x 2 : 40 %

Quizzes x 5 : 10 %

Homework : 10 %

Final exam : 40 %

Attention

Students failing to score at least 40 % (i.e. 24 out of 60) on the in-term assessments (midterm 1&2) will not be allowed to attend the final exam and will be graded **VF**.

Please keep track of the web page of Ninova, not to miss any announcements.