

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
GEM131	Electronics	2	2	0	0	2	2
Prerequisites							
Admission Requirements							
Language of Instruction	Turkish						
Course Type	Compulsory						
Course Level	Associate Degree						
Objective	Allows electronic circuit elements, know the working principles of electronic circuit elements and uses ship electronic device						
Content	Short atomic information, and types of diodes, BJT's, field-effect transistors. Difference amplifiers, electrical characteristics of operational amplifiers, feedback, frequency response, operational amplifiers, basic operational amplifier circuits, operational amplifier applications, multivibrators and wave shapers.						
References	1) Elektronik elemanlar ve devre teorisi , Robert Boylestad, Louis Nashelsky, temel elektronşk bilgisi. 2) Elektronik 2 atlas yayınları, Elektronik yüce yayınları, Analog Elektronik 1 seçkin yayıncılık. 3) Doğru akım devre analizi Ali Bekir Yıldız 4) Elektrik Makineleri Cilt 1 Adem Atunsaçlı						

## Theory Topics

Week	Weekly Contents
1	Atom Knowledge, conductors, semiconductors, insulators definitions, structure of the PN junction diode, forward and reverse operation.
2	P-N diode D.C applications
3	PN junction diode applications (half-wave, full wave rectifier).
4	Diode applications (clippers, clampers).
5	Zener diode definition, structure, properties
6	LED diode, Varicap diode, tunnel diode, Schottky diode, Photo diode, and the PIN diode structures, varieties, properties and fields of study.
7	BJT transistors and work structures
8	BJT transistors D.C at work.
9	Field Effect Transistors
10	Small signal and large signal amplifiers.
11	Multivibrators RC phase-shift oscillators and LC oscillators and kistal.
12	Definitions of operational amplifiers and their characteristics, uses, inverting, voltage Dreamling, inverting, voltage Dreamling, Toplayacı, the difference amplifier applications.
13	Comparators and their applications, integral, derivative receiver circuits and applications.
14	Active filter with OPAMP , low pass, high pass, band pass, band-extinguishing, RC oscillator with OPAMP and LC oscillators and their applications.