ETE 282 ELECTRONIC CIRCUITS

Marmara University
Tecnical Education Faculty
Department of Electronics and Computer Education

Assoc. Prof. Dr. Hayriye Korkmaz
Office : D513, D509
Course Information

- Homepage
  http://mimoza.marmara.edu.tr/~hkorkmaz/edl.swf
Assessment Scheme

- Experiments (%25)
- Midterm Exam (%25)
- Final Exam (%50)
Reference Books

- Electronics Devices and Circuits, Theodore F. Bogart
- Electronics Devices and Circuit Theory, Robert Boylestad, Louis Nashelsky
- Electronic Devices, Thomas L. Floyd
- Elektronik Cihazlar ve Devre Teorisi, Robert Boylestad, Louis Nashelsky (çeviri, Palme Yayınıcılık)
- Experiments in Electronic Devices and Circuits by Theodore F. Bogart
Experiment List

- Exp. No:1 Diode Characteristics
- Exp. No:2 Large-Signal Diode Circuits (Halfwave and fullwave Rectifiers, Filters and Ripple)
- Exp. No:3 Clipping and Clamping Circuits, Logic Gates
- Exp. No:4 Zener Diodes
- Exp. No:5 BJT Biasing
- Exp. No:6 Common Emitter Amplifier
Experiment List

- Exp. No: 7  JFET Biasing
- Exp. No: 8  JFET Amplifiers
- Exp. No: 9  Multistage Amplifiers
- Exp. No: 10 Lower Cutoff Frequency
- Exp. No: 11 Upper Cutoff Frequency
- Exp. No: 12 Differential Amplifier
Overview of Course

- Introduction to Semiconductor Theory
- The P-N Junction Diode
- Diode Applications (Rectifiers, Clipppers, clamps, Logic gate applications)
- The Bipolar Junction Transistors
- Common Base, Common Collector and Common Emitter Characteristics
- Biasing Types, Stability factor (Temperature dependence)
- BJT Amplifiers
Overview of Course

- JFET and MOSFET transistors: structure, theory of operation.
- JFET Configurations: Input and Output Characteristics, biasing methods, stability analysis and comparison between them.
- JFET amplifiers: Small signal models, voltage gain and phase relations.
- Multistage Amplifiers: Small signal model, voltage gain and phase relations, loading effect.
Frequency response of the amplifiers:
- Midband, low and high frequency regions, bandwidth, dB, decade and octave concepts, Bode plots
- Effects of the internal and external capacitances on gain,
- Lower and higher cutoff frequencies, Miller effect on higher cutoff frequency.


Operational Amplifiers and applications (inverting, noninverting amplifiers, summation, subtraction circuits etc)