

Jordan University of Science and Technology
Faculty of Engineering
Department of Electrical Engineering

EE 321 Principles Of Electronics For Non EE Student

Credits	Contact hours	Room no.
3	3	C2011
Instructors: Dr. Walid Shahab	Email Shahab@just.edu.jo	Office hours
Dr. Esraa Al Sharoa	emalsharoa@just.edu.jo	

- *Modular Series In Solid State Electronics*
- *Microelectronics; Circuit Analysis and Design, 4th Edition, Donald A. Neamen, McGraw-Hill, 2010.*

Other supplemental materials.

1. D. Schilling and Belove; Electronic Circuits, 3^d Edition, McGraw-Hill, 1989
2. Bogart; Electronic Devices and Circuits, 1st Edition, Merrill, 1992
3. Sedra and Smith; Microelectronic circuits

Specific course information

Catalog description: 3 Credit hours (3 h lectures). Diodes, clipping, clamping and rectification circuits, bi-polar junction transistor (BJT), BJT amplifiers, field-effect transistors (FET), FET amplifiers and operational amplifiers and their Applications..

Prerequisite course(s): EE 212 or EE303 – Electric Circuits

Course type required course

Specific goals for the course

Outcomes:

1. Ability to understand, and analyze semiconductor and pn junctions properties, conduction, and operation. [1]
2. Study and design small-signal and large-signal diode circuits. [1]
3. Study operation and structure of BJT and FET transistors. [1]
4. Understand operation and load-lines of BJT and FET transistor circuits. [1]

ABET SLO's:

5. Understand, design, and analyze single-stage BJT and FET amplifiers. [1]
6. Understand, design, and analyze multi-stage BJT and FET amplifiers. [1]
7. Understand, the theory and limitations of Operational Amplifiers. [1]
8. Study and design applications of Operational Amplifiers. [1]

Course schedule/topics to be covered:

Week	Subject	Chapter no.
Weeks 1-3	Semiconductors: properties, carriers actions and conduction, pn junctions: operation, depletion region, potential and electric fields and Current.	Modular series
Weeks 4-5	Small signal and large signal analysis of diode circuits.	
Week 5-8	Structure, operation, Dc analysis. Operating point, Dc and AC loadlines, and symmetrical swing of BJT and FET transistors.	
Week 9-10	Small-Signal Low-Frequency Analysis and Design of BJT and FET amplifiers.	Problems Ch. 4-6
Week 11	Multi-Stage Amplifiers	Problems Ch. 4-6
Week 12-13	Operational Amplifiers Theory	Problems Ch.13
Week 13-15	Operational Amplifiers Applications	Problems Ch.13-15

Exam/Assessment schedule

First Exam **25%,**
Second Exam **25%,**
Final Exam **50%.**

Additional Information

This course syllabus provides a general plan for the course; deviations may be necessary.

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