



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

EE321 Fundamentals Of Electronics (Non Ee Students) - JNQF Level: 7

First Semester 2024-2025

Course Catalog

3 Credit Hours. 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..

Teaching Method: On Campus

Text Book

Title	Microelectronic circuit analysis and design
Author(s)	D. Neamen
Edition	4th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#1	Electronic Circuits	D. Schilling and Belove	3rd Edition	
Ref#2	Electronic Devices and Circuits	Bogart	1st Edition	
Ref#3	Microelectronic circuits	Sedra and Smith	7th Edition	
Ref#4	Modular series on solid-state devices	Gerold Neudeck and R. Pierret	1st Edition	

Instructor

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Class Schedule & Room
<p>Section 1: Lecture Time: Sun, Tue, Thu : 12:30 - 13:30 Room: E2114</p> <p>Section 2: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: CH2106</p> <p>Section 3: Lecture Time: Sun, Tue, Thu : 11:30 - 12:30 Room: E2006</p>

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Semiconductor Materials and Diodes	
Weeks 2, 3	Diode Circuits	
Weeks 4, 5	The Bipolar Junction Transistor	
Weeks 6, 7	Basic BJT Amplifiers	
Weeks 8, 9	The Field Effect Transistor	
Weeks 10, 11	Basic FET Amplifiers	
Weeks 12, 13	The Ideal Operational Amplifier	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Illustrate the ability to understand and evaluate the characteristics, conduction, and operation of semiconductors and pn junctions. [10SO1] [1L7K1]	10%	
Explore and investigate the different applications of diodes. Illustrate the ability to analyze small- and large-signal diode circuits. [10SO1] [1L7K1]	10%	

Explore and investigate the physical structure and operation of Bipolar Junction Transistors (BJTs) and Field Effect Transistors (FETs). [10SO1][1L7K1]	10%	
Demonstrate the ability to analyze the different configurations of the amplifier circuits. Investigate various DC biasing schemes of BJT and FET circuits. Apply DC and AC small-signal analysis for single-stage and multistage amplifiers. [50SO1][1L7S2]	50%	
Comprehend the theory of operation and practical considerations of an operational amplifier. Demonstrate the ability to analyze circuits incorporating operational amplifiers. [20SO1][1L7S2]	20%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
100						

Relationship to NQF Outcomes (Out of 100%)	
L7K1	L7S2
30	70

Evaluation	
Assessment Tool	Weight
First	30%
Second	30%
Final	40%

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