



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

EE525 Electronic Circuit Design

Second Semester 2022-2023

Course Catalog

3 Credit Hours. Analysis and design of analog integrated circuits; transistor models; simple and advanced current mirrors; single-ended amplifiers; differential amplifiers; operational amplifiers; frequency response.

Text Book

Title	Analysis and Design of Analog Integrated Circuits
Author(s)	Paul Gray et al
Edition	5th Edition
Short Name	Texbook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #1	Design of Analog CMOS Integrated Circuits	Behzad Razavi	1st Edition	
Ref #2	CMOS Circuit Design, Layout, and Simulation	Jacob Baker	3rd Edition	

Instructor

Name	Dr. Fadi Nessir Zghoul
Office Location	E2-L3
Office Hours	
Email	fnessirzghoul@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue : 11:30 - 12:30

Room: C3018

Prerequisites

Line Number	Course Name	Prerequisite Type
243202	EE320 Electronic Circuits	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Long Channel Model	From Textbook
Week 2	Small signal model	From Textbook
Week 3	gm/id methodology	From Textbook
Week 3	Technology characterization	From Textbook
Week 4	gm-id based design	From Textbook
Week 5	Extrinsic capacitance	From Textbook
Week 6	Miller approximation	From Textbook
Weeks 7, 8	Electronic noise	From Ref #1
Week 9	Backgate and common gate	From Ref #2
Week 10	Common drain	From Ref #2
Week 11	Differential pair	From Textbook
Week 12	Current mirror and offset	From Textbook
Week 13	Process variation and feedback	From Textbook
Week 14	Fully differential amplifier	From Textbook
Week 15	Feedback and stability analysis	From Textbook
Week 16	Two-stage OTA	From Textbook

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Analysis and design of analog integrated circuits. [1ABET1]	40%	First, Final Exam, Participation, Second
Understand frequency response [1ABET1]	10%	First, Final Exam, Participation, Second

Understand feedback theory [1ABET1]	10%	First, Final Exam, Participation, Second
Introduce stability analysis [1ABET1]	10%	First, Final Exam, Participation, Second
Introduce nonidealities and noise [1ABET1]	20%	First, Final Exam, Participation, Second
Familiar with CAD tools for circuit analysis and design [1ABET1]	10%	First, Final Exam, Participation, Second

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
100						

Evaluation	
Assessment Tool	Weight
First	20%
Final Exam	40%
Participation	20%
Second	20%

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