

Electronics III

Department of Electrical Engineering
Amirkabir University of Technology (Tehran Polytechnic)

Instructor: Dr. Mohammad Yavari
Spring 2021

Topics:

1. Introduction to Analog IC Design
2. Basic Physics of MOS Transistors
3. Current Mirrors and Single-Stage Amplifiers
4. Differential Amplifiers
5. Frequency Response of Amplifiers
6. Noise Modeling and Analysis
7. Basic Opamp Design and Frequency Compensation
8. CMOS Operational Amplifiers
9. Nonlinear Analog Circuits
10. Oscillators

References:

1. B. Razavi, *Design of Analog CMOS Integrated Circuits*, McGraw-Hill, Second Edition, 2017.
2. P. Gray, P. Hurst, S. Lewis, and R. Meyer, *Analysis and Design of Analog Integrated Circuits*, John Wiley, 5th Edition, 2009.
3. T. C. Carusone, D. A. Johns, and K. W. Martin, *Analog Integrated Circuit Design*, John Wiley & Sons, Second Edition, 2012.
4. A. Sedra and K. Smith, *Microelectronic Circuits*, 7th Edition, Oxford University Press, 2015.
5. Class Notes and Selected Publications.

Requirement:

Electronics II

Grading:

HWs & Projects: 10%
Final Design Project: 10%
First Midterm: 25%
Second Midterm: 25%
Final Exam: 30%