

# CMOS Analog Integrated Circuit and System Design

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

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## Topics:

1. Basic MOS Physics and Modeling
2. Current-Mirrors and Single-Stage Amplifiers
3. Noise in Analog Integrated Circuits
4. CMOS Operational Amplifiers and Compensation
5. Introduction to Switched-Capacitor Circuits
6. Fundamentals on A/D and D/A Converters
7. Basic Concepts in RF Design
8. Transceiver Architectures
9. CMOS Low-Noise Amplifiers and Mixers
10. CMOS Processing Technology, Layout and Packaging

## References:

1. B. Razavi, *Design of Analog CMOS Integrated Circuits*, McGraw-Hill, 2001.
2. M. Gustavsson, J. Jacob Wikner, and N. N. Tan, *CMOS Data Converters for Communications*, Kluwer Academic Publishers, 2002.
3. B. Razavi, *RF Microelectronics*, New Jersey: Prentice-Hall, 1998.
4. D. Johns and K. Martin, *Analog Integrated Circuit Design*, John & Wiley, 1997.
5. B. Razavi, *Principles of Data Conversion System Design*, IEEE Press, 1995.
6. Class Notes and Selected Publications.

## Requirement:

Electronics III

## Grading:

HWs: 10%  
Design Projects: 20%  
Midterm Exam: 30%  
Final Exam: 40%