ECE 584
Analog CMOS Integrated Circuit Design
Spring 2018

Instructor: Dr. George L. Engel (EB-3043)
Time: M, W (1:30 PM - 2:45 PM)
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Office Hours: M, W 3:00 PM - 4:00 PM and T, R 2:00 - 3:00 pm

Course Description

Course material includes the study of the operating principles of CMOS analog integrated circuits, physics of MOS devices, linearized models of MOSFETs, and circuit design techniques for realizing CMOS operational amplifiers, current references, voltage references, etc.

Grading Policy

Midterm Exam 20 %
Final Exam 20 %
Midterm Project 20 %
Final Project 20 %
Homework Assignments 20 %

Administrative Issues

If you have a documented disability that requires academic accommodations, please go to Disability Support Services (DSS) for coordination of your academic accommodations. DSS is located in the Student Success Center, Room 1270; you may contact them to make an appointment by calling (618) 650-3726 or sending an email to disabilitysupport@siue.edu. Please visit the DSS website located online at www.siue.edu/dss for more information.
Required Texts

Analog Integrated Circuit Design
John Wiley & Sons
Tony Carusone, David A. Johns, Kenneth W. Martin
ISBN Number: 978-0-470-77010-8

Course Outline

M Jan 08  MOS Transistors (Sec. 1.2)
W Jan 10  Advanced MOS Modelling (Sec. 1.4)
M Jan 15  *** Martin Luther King Day (NO CLASS) ***
W Jan 17  Passive Devices (Sec. 1.6)
M Jan 22  Variability and Mismatch (Sec. 2.3)
W Jan 24  Analog Layout Considerations (Sec. 2.4)
M Jan 29  Simple CMOS Current Mirror (Sec. 3.1)
W Jan 31  Common Source Amplifier (Sec 3.2)
M Feb 05  Source Follower (Sec. 3.3)
W Feb 07  Common Gate Amplifier (Sec. 3.4)
M Feb 12  Cascode Current Mirrors (Sec. 3.6)
W Feb 14  Cascode Gain Stage (Sec. 3.7)
M Feb 19  MOS Differential Pair (Sec. 3.8)
W Feb 21  Frequency Response of Linear Systems (Sec. 4.1)
M Feb 26  Frequency Response of Elementary Transistor Circuits (Sec. 4.2)
W Feb 28  Midterm Exam (Chapters 1, 2, 3)
M Mar 05  ***** SPRING BREAK *****
W Mar 07  ***** SPRING BREAK *****
M Mar 12  Cascode Gain Stage (Sec. 4.3)
W Mar 14  Source Follower Amplifier (Sec. 4.4)
M Mar 19  Feedback Amplifiers Review (Chapter 5)
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