

EEE5364-11C3(12316) - Fund Data Converters

EEL 5934: Fundamentals of Data Converters

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Course Description

This course explores fundamentals of data converter systems and circuits. Most of the commonly used ADC and DAC architectures such as flash, two-step, pipelined, algorithmic, successive-approximation, R-2R DACs and other widely used structures are discussed in great details. The effects of circuit non-idealities are analyzed and various system and circuit techniques will be discussed to enhance the performance of these converters. Circuit design techniques, layout issues and other practical limitations of analog IC design will be also discussed in this course.

The course objective is to provide a thorough background of data converter systems and circuits, discuss the real world applications, IC design challenges and prepares students for other areas of analog and digital IC design.

Class Schedule

Tuesdays 8:45m-10:30am

Thursdays 9:35am-10:25am

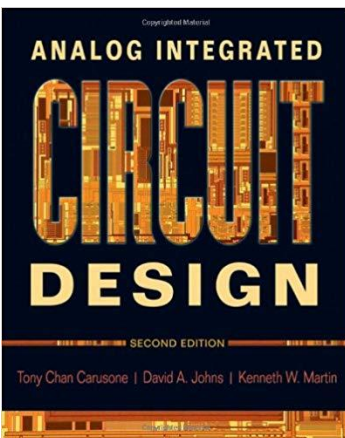
Location: [MAE-A 0327](#) [_\(http://campusmap.ufl.edu/?loc=0725\)](http://campusmap.ufl.edu/?loc=0725)

Pre-requisite:

EEE 5320 BIPOLAR ANALOG IC DESIGN (Analog IC Design I)

or equivalent knowledge of this topic (see the instructor)

Textbooks(not required)



Analog Integrated Circuit Design (2nd edition) (highly recommended)

By Tony Chan Carusone, David Johns and Kenneth Martin

Publisher: Wiley; 2 edition (December 13, 2011)

· **ISBN-10:** 0470770104

· **ISBN-13:** 978-0470770108

Hardcover: 816 pages

Software

Matlab R8 and above

Cadence (if you do not know Cadence, please contact me ASAP)

What you should know

Analog IC Design (Opamps, frequency response, settling, slew rate ...)

Basic Probability and stochastic signals (WSS, Gaussian, PDF, PSD ..)

Frequency Response (bode plot, pole-zero)

Analog Layout Basics (LVS/DRC)

Grading basis






Homework 20% (5-6 series)

Mini Projects 25%

Midterm 25%

Project 35% (total 105%, 5% extra)

Course Summary:

Date	Details	
Mon Jan 29, 2018	 HW1 (https://ufl.instructure.com/courses/363835/assignments/3754202)	due by 9am
Sun Feb 11, 2018	 HW2 (https://ufl.instructure.com/courses/363835/assignments/3754203)	due by 11:59am
Fri Mar 2, 2018	 HW3 (https://ufl.instructure.com/courses/363835/assignments/3754204)	due by 11:59pm
Wed Mar 21, 2018	 HW4 (https://ufl.instructure.com/courses/363835/assignments/3754205)	due by 12pm
Mon Apr 2, 2018	 HW5 (https://ufl.instructure.com/courses/363835/assignments/3754206)	due by 8am