

EE 5348
Spring 2009

In this day of wireless communication, more interest has been generated in circuit design techniques that are applicable to 800 - 2000 MHz band where most of the cellular communication bands are located. The RF design course is designed to address the special techniques that are required for building circuits at these frequencies. Among the topics that are expected to be covered are resonance, impedance transformation, small signal amplifiers, oscillators, mixers, phase locked loops, transmission line transformers, and power amplifiers. Students will be able to design an active circuit using the Agilent program called ADS (Advanced Design System) on the unix work stations. The purpose of the course is to provide tools to engineers that are or will be active in hardware design of circuits in the RF frequency range.

Text: **Radio Frequency Circuit Design**, W. A. Davis, K. K. Agarwal

Reference: **Solid State Radio Engineering**, H. L. Krauss, C. W. Bostian, F. H. Raab

Time: Tue. Thurs. 3:30 PM - 4:50 PM, Room 105 NH

Chapter	Topic
1	Communication Channel
2	Resistors, Capacitors, and Inductors
3	Resonance and Impedance Transformation
4	Multiports, Transmission Lines, and S Parameters
7,notes	Small-Signal Amplifiers Project Assignment
Notes	Advanced Design System
8	Noise
5	Filter Approximation
6	Transmission Line Transformers
9	RF Power Amplifiers
10	Oscillators
11	Mixers

Computer software that you will be using includes Advanced Design System (ADS) on the Unix gamma computer system. Documentation available on line.

Grading

Homework	10%
2 - 1 hour exams each	20%
Computer Project	20%
Final Exam	30%

Spring Vacation: March 16 - 20

Last Day of Class: May 7, 2008

Final Exam: Probably Thursday May 14, 2:00 - 4:30 PM

Class web page: <http://www-ee.uta.edu/online/adavis/ee5348>

Software/errata on <http://www-ee.uta.edu/online/adavis/rfsoftware>

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