ECE 585: MICROWAVE ENGINEERING II
Spring 2011

Major Course Topics
- Multi-port Microwave Devices: Power Dividers, Directional Couplers, Hybrids [Chap 7, ~3 weeks]
- Microwave Filters: Periodic Structures, Filter Design by Image Parameter and Insertion Loss Methods, Filter Implementations [Chap 8, ~3 weeks]
- Ferrimagnetic Components: Properties, Gyrator, Isolator, Circulator, Phase Shifter. [Chap 9, ~2 weeks]
- Noise Figure & Temperature, Dynamic Range, Distortion [Chap 10, 2 weeks]
- Basic Amplifiers & Oscillators: 2-Port Power Gains, Stability, Phase Noise, Mixers [Chaps. 11-12, ~3 weeks]

Prerequisites:
Microwave Engineering I (ECE 584) or equivalent

Instructor:
Stephen Frasier  frasier@ecs.umass.edu – please include ECE-585 in subject line
Office hours: By appointment.

Teaching Assistant:
Anthony Swochak

Textbook:

Homework:
Periodic assignments will be announced in class. Some assignments will be computer exercises.

Schedule:
Lecture: TR 1:00--2:15 PM in sunny ELAB 325

Grading:
Homework: 20%  Midterm Exam: 40%  Final Exam: 40%
Course Objectives:

Students completing this course should be able to:

1. Understand the theoretical principles behind microwave devices and networks.
2. Design microwave circuit components such as power dividers, hybrids, and filters.
3. Understand the basic properties of components employing ferrimagnetic materials.
4. Understand and quantify the effects of noise in active microwave circuits.
5. Understand concepts of Power gain and stability in microwave circuits.