INSTRUCTOR: Prof. J. Stevenson Kenney, Office – MiRC Rm. 226
Office Phone: (404) 894-5170
Home Phone: (770) 399-0803 – Emergencies only, before 9 p.m!
e-mail: jskenney@ece.gatech.edu

LAB: Van Leer C-345

CLASS MEETINGS: TTh: 12:00-1:45 PM
OFFICE HOURS: TTh: 2:00-3:30, or by appointment.


PREREQUISITE: ECE6360 Microwave Design

SOFTWARE: You will need to establish an account to use Agilent ADS through help@ee.gatech.edu. You may use another tool of your choice if you prefer.

WEB PAGE: http://users.ece.gatech.edu/~jskenney/

Course Description
This course will discuss the practical aspects of microwave component and subsystem design. In this course, you will learn:

- Passive Microwave Design and Simulation
- Active Circuit Microwave Design and Simulation
- Linear and Nonlinear Microwave Measurements
- Communication System Measurements

Course Grading
The range of GPAs for this course will be 3.3 to 3.7. Your grade will result from your performance in two areas of assignment:

- 1 Individual Design Project (25% of total grade) – Individual Projects
  - Design and simulation of microwave components
  - Deliverable: 5-7 page written report
- 2 Design Implementation Labs (50% of total grade) – Group Projects
  - Design, fabricate, and test a microwave circuit
  - Deliverables: Powerpoint File and 15 minute oral presentation – graded by instructor and possibly and industry affiliates
- Group Participation (25% of total grade) – Individual, graded by peer members in your group
Labs
Most laboratory activity is “unstructured,” in that you will not be given a specific set of experiments to run. There will be tutorial sessions (some mandatory), where instruction will be given on how to use various pieces of equipment. Apart from those, the lab sections which you are registered for are time slots that the equipment is reserved for your use. Besides evaluating your design projects, various components are available for you to learn measurement techniques, and compare to your design.

Individual Design Projects
There will be one individual design project assigned during the term. Simulations and or analytic techniques will be used to design a microwave circuit. The design project will be summarized in a 5-7 page report. The grading criteria on this part will consist of the following items:
- Methodology: Choice and justification of approach (30%)
- Execution: Demonstration of adequate performance in meeting the design goals (40%)
- Organization: Adequate presentation for evaluation (10%)
- Summary and Conclusions (20%)

Group Projects
The group projects will consist of fabricating and testing a circuit. Due to equipment limitations in the lab, these must be performed in groups of 2-3 people. Each group must design a printed circuit board based on the best judgment of the group members. PCBs will then be fabricated, assembled, and tested. The group then will be graded on the same basis as the Individual Projects.

The group will present the results in class in a 15 minute session. PowerPoint files will be required from each group to be posted on the course web page. All members of each group will receive the same grade on the project.

Timeliness in turning in reports and completing lab work is essential. Deductions will be made for late assignments.