Instructor: Reyhan Baktur
Office/Phone: EL 150/ 797-2955
Office Hours:
Thursday 1:30-4:30, open door policy (you can come in while my door is open),
via e-mail: reyhan.baktur@usu.edu
Course: ECE 5850 — Antennas I
Class Time: 9 am to 10:15 am TTH
Class Location: Engineering 202
Textbook:
Notes by Instructor.
Suggested Texts:
Antenna Theory and Design, Stutzman and Thiele, 2nd Ed., Wiley
Antenna and EM Modeling with MATLAB, Sergey N. Makarov
Objectives:
To provide students with an understanding of antenna theory, design and basic
measurement techniques. This includes introduction to antenna fundamentals and theory,
important types of antennas, antenna modeling, as well as the operation of some basic RF
equipments to perform antenna measurements plus some design aspects of antennas.
Topics:
1. Introduction to Antennas 1
2. Antenna math (Vector potentials, computation of antenna fields) 3
3. Antenna parameters 4
4. Antenna theory (Image theory, Reciprocity, Radar Cross Section) 3
5. Linear wire antennas 4
6. Loop antennas 2
7. Antenna arrays 5
8. Introduction to antennas modeling, measurement and matching techniques 1
9. Important types of antennas (Horn, Helical, Yagi-Uda, Microstrip Patch) 1
In class exams:
Three mid-term exams (approx. Sep. 19, Oct. 19, Nov. 21)
No final exam.
Total class meeting including exams: 27

Course Policy:

- You may discuss out-of-class projects problems with each other, but you must turn in your own solutions on assignments. All computer assignments and projects must be the result of your own work. You may discuss issues regarding the use of computer workstations and MATLAB but you must not share code and/or results. If you turn in code or results developed fully or in part by someone else, then you will not get any credit for the homework or projects.
- Students will need access to a computer with MATLAB loaded on it for programming homework.
- Notes will be posted on my website and I will send an email to remind you about the new posts. It is important that you check the website for new updates before coming to the class. The website is: http://www.engineering.usu.edu/ece/faculty/rbaktur/
- You are asked to turn in the ELECTRONIC COPY (MS Word) of programming homework and literature review homework. Good grammar and proper English is a requirement for homework.
- The homework with electronic version is to be turned it via e-mail attachment or flash drive. Please do not imbed the attachment to the email text.
- Reasonable neatness is required on handwritten assignments and exams.
- Only one exam will be close book/note, the other two are open book/note.
- Your final grade depends on the 3 midterm exams, homework, paper and final project. The weighting will be:

  Exams 50 %, Homework 15 %, Paper 5%, Final project 30%

  Total 100 %

Attendance:
Attendance is optional except during exams. If you miss a class, see a classmate about any assignments that may have been given and/or check the website. If the instructor is late to class by more than 15 minutes, then students may leave without penalty.

Course Accessibility:
In cooperation with the Disability Resource Center, reasonable accommodation will be provided for qualified students with disabilities. Please meet with the instructor during the first week of class to make arrangements. Alternate format print materials (large print, audio, diskette or Braille) will be available through the Disability Resource Center.
About programming homework:

- You can copy graphs and plots out of MATLAB or ADV and paste them into your document.

- Make sure the graphs and plots you include came about as the result of your work. Do not use any images that you didn’t generate yourself.

- Any graph or plot you include must have sufficient label/caption information for the reader to follow. For example, if you intend to include a plot of a pattern of an antenna, then you need to show antenna geometry (with captions) and the pattern plot (with captions). The axes should be labeled. Figures of graphs should be referred to in the commentary by figure number (or table number) if included. Look in any decent engineering book for copious examples. Emulate them in your work. If you make a series of runs on an antenna for different parameter values, then you must present results such that they can be distinguished from one another. Labels and captions help with this.