EEL 4516 - Noise in Devices and Communication Systems

(I will teach it as 80% Probability and 20% Digital Communications)

Dr. Jianbo Gao

Spring 2007

Pre-requisite: EEL 4514 is a required pre-requisite course. In addition, I expect the following:

- Ability to work and learn independently. Course material may be assigned that is not covered in class but will be evaluated on the homework and the exams.

- Solid understanding of systems theory, including convolution, Fourier transforms, and impulse functions.

- Strong mathematical background, especially differentiation, integration, and working with trigonometric functions.

- Basic knowledge of communication systems. Elementary circuit theory, including transfer function concepts.

Computer requirement: Some problems will require MATLAB or MathCAD. Students may want to purchase student versions of these programs, as departmental computer resources are limited. Not being able to get on a computer is not a valid excuse for late work.

Meeting Time: 4th Period, Tuesday; 4-5 Periods, Thursday
Meeting Room: LAR 239 (Section 2008)
E-mail: gao@ece.ufl.edu
Class Web page: http://www.gao.ece.ufl.edu/eel4516/
Personal Web page: http://www.gao.ece.ufl.edu
Office: 427 New Engineering Building
Phone: (352) 392-0918
Office hours: 5,6 Periods , Tuesday; 6 Period, Thursday, and by appointment
Textbooks:


Goals and Objectives: Upon completion of this course, the student should be able to

- Use probability to analyze various types of problems that involve chance
- Use probability to model and analyze communication phenomena
- Determine the maximum a posteriori and maximum-likelihood decisions for simple sufficient statistics used in communication phenomena

Grading: Grading will be based on two midterm exams (25% each), one final exam (30%), homework and short quizzes (15%), and participation (5%). The participation score will take into account in-class participation, e-mail exchanges, discussions outside of class, etc. If your cell phone rings during class, I may deduct points from the class participation score. A grade of > 90% is guaranteed an A, > 75% is guaranteed a B, etc. Homework will be accepted late up to two times, with an automatic 25% reduction in grade. Bonus points may be awarded on some exams or for optional projects. No formal project is required, but, as mentioned above, students will be required to use MATLAB in solving some homework problems. When students request that a submission (test or homework) be regraded, I reserve the right to regrade the entire submission rather than just a single problem.

Attendance: Attendance is not mandatory. However, students are expected to know all material covered in class, even if it is not in the book. Furthermore, the instructor reserves the right to
give unannounced “pop” quizzes with no make-up option. Students who miss such quizzes will receive zeros for that grade. If an exam must be missed, the student must see the instructor and make arrangements in advance unless an emergency makes this impossible.

Approval for make-up exams is much more likely if the student is willing to take the exam early.

Calculators: Students may bring a calculator to class and to the exams. Cellular phones, PDAs, etc. will NOT be allowed.

Academic Honesty: All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action.

The Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Pledge: On all work submitted for credit by students of the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." This statement is a reminder to uphold your obligation as a student at the University of Florida and to be honest in all work submitted and exams taken in this class and all others. Honor statements on tests must be signed in order to receive any credit for that test. Collaboration on homework is permitted unless explicitly prohibited, provided that:

1. Collaboration is restricted to students currently in this course.
2. Collaboration must be a shared effort. I.e., it is not permissible to copy someone else’s work.
3. Each student must write up his/her homework independently.
4. On problems involving MATLAB programs, each student should write their own program. Students may discuss the implementations of the program, but students should not work as a group in writing the programs.

I have a zero-tolerance policy for cheating in this class. If you talk to anyone other than me during an exam, I will give you a zero. If you plagiarize (copy someone else’s words or
someone else’s work), I will give you a failing grade for the class. Furthermore, I will be forced to bring academic dishonesty charges against anyone who violates the Honor Code.

ADA Statement: The University of Florida provides high-quality services to students with disabilities, and we encourage you to take advantage of them. Students with disabilities needing academic accommodations should 1) Register with and provide documentation to Disability Resources (392-1261), and 2) Bring a letter to the instructor from this office indicating that you need academic accommodations. Please do this as soon as possible, preferably within the first week of class.