EEE – 602: RANDOM SIGNAL & NOISE

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Office Hours: Posted

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Course Structure: Lecture Hours = 2.5/wk, Total Credits = 3
Pre-requisites: Graduate standing or permission of instructor

Course Description:
In this course the student is introduced to random variables and stochastic processes. Topics covered are probability theory, conditional probability and Bayes theorem, discrete and continuous random variables, distribution and density functions, moments and characteristic functions, functions of one and several random variables, Gaussian random variables and the central limit theorem, estimation theory, random processes, stationarity and ergodicity, auto correlation, cross-correlation and power spectrum density, response of linear prediction, Wiener filtering, elements of detection, matched filters.


Course Outline

1. Introduction.
2. Random variables
3. Operations on one random variable
4. Multiple Random Variables
5. Sequence of random variables
6. Introduction to Stochastic Processes
7. Mean Square Estimation

Grading Policy:
Homework 10%
Midterm 35%
Final Examination 40%
Active Learning Quizzes 15%

Course Grade Evaluation Criteria:
1) Homework:
   a. Weekly mandatory homework will be assigned and collected on the agreed upon due date.
   b. All work details must be shown step by step.
   c. Solutions will be made available in a timely manner.

2) Exams:
   a. One midterm and a final exam will be given during the quarter.
   b. The exams will be based on the homework, lectures, and assigned reading.
General Guidelines:
1) Please do not wait to the last minute to do the homework, projects or study for the exams.
2) It is highly recommended that you make every effort to attend every lecture. The material covered in the lecture is designed to focus on the most pertinent concepts of the course. If you should miss a lecture, please make every effort to get a copy of the lecture material from your fellow students.
3) If you are having trouble with the material or need more personal attention, please do not hesitate to make use of my office hours as early as possible. Please do not wait to the last minute.
4) Bring your text book to each class.
5) **Turn off or set to vibrate all cell phones.**

Kate Gleason College of Engineering Policy on Academic Honesty
The College of Engineering has set a high standard of academic excellence for the students we serve. Our goal is to prepare students as highly skilled and talented engineers by providing a quality education that includes lectures, laboratory experience, and exams. It is for this reason that the College of Engineering has the following academic honesty policy:

Rochester Institute of Technology does not condone any form of academic dishonesty. Any act of improperly representing another person's work as one's own is construed as an act of academic dishonesty. These acts include, but are not limited to:
- Plagiarism in any form (including the use of all or parts of computer programs created by others without clearly indicating that you are not the author)
- The use of information and materials not authorized by the instructor during an examination.

If a faculty member judges a student to be guilty of some form of academic dishonesty, the student may be given a failing grade for that piece of work, or for the entire course, depending upon the severity of the misconduct.

If the student believes that the action taken by the instructor is incorrect, or that the penalty is too severe, the student may appeal to the Academic Conduct Committee of the college in which the course is offered.

Special Needs:
Students that have special needs that go beyond those of the usual student – aside from students who are already classified as deaf or hearing-impaired and are listed as such on the class roster – must present documentation to the instructor to certify the nature of his/her needs at the beginning of the quarter. This will allow the instructor to plan ahead in order to assist the student(s) meet his/her course objectives.