ECE 3170 Random Signal Analysis
Second Summer Session 2024 (Online) Syllabus

Class Meetings: This is an asynchronous online course, with the exception of the tests and final exam, which are synchronous. There will be no meetings of this course in a traditional classroom. The course will be conducted entirely online.

Instructor:
Dr. Stephen Hubbard
email: hubbard@clemson.edu
Phone: (864) 656-4387
Office Hours: 11:00 AM - 12:00 Noon EDT MTWThF
(by telephone only)

Communication: Students may communicate with the instructor via email or telephone. Email communication is an essential component of the course, and Clemson University student email accounts must be used for all course-related email correspondence. All students are required to have functioning Clemson email accounts prior to enrolling, and mail from non-Clemson accounts will not be read or acknowledged by the instructor. Students are responsible for checking their Clemson email accounts each weekday for announcements and assignments.

Email for Non-Clemson Students:

Transient students (not enrolled in degree programs at Clemson University) who are enrolled prior to the first day of class will receive an email from the instructor at their Clemson University student email accounts no later than noon EDT on Thursday, June 27. Transient students must reply to this email promptly in order to remain enrolled in the course. A transient student who fails to reply as required by 4:30 PM EDT Friday June 28 will be withdrawn from the course and not permitted to re-enroll.

Transient students who register late will receive an email from the instructor at their Clemson University student email accounts and must reply no later than 4:30 PM EDT Monday, July 1. Students who fail to reply as required will be withdrawn from the course and not permitted to re-enroll. There are no exceptions to this policy, regardless of circumstances.

Text (required): *Random Signal Analysis in Engineering Systems*, by John J. Komo, Academic Press, 1987.

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Goals and Objectives:

The goal of this course is to introduce basic probabilistic techniques used in the analysis of random signals in engineering systems. Upon completion of this course, students should be familiar with the basic theory of random variables and vectors, systems transformations, statistical averages, and estimation of system parameters.

Tentative Course Outline:

1. Introduction to Probability
2. Random Variables and Vectors
3. Functions of Random Variables
4. Statistical Averages
5. Random Processes
6. Statistical Inference

Prerequisites: Students pursuing a degree from Clemson University are required to have completed the following courses with grades of C or better in order to enroll in ECE 3170:

ECE 2620
MTHSC 2080
ECE 3300

Students not enrolled in a degree program at Clemson University must have passed university-level courses in basic DC and AC electric circuits, differential equations, and signals and systems before taking this course.

Reading Assignments and Lectures:

Assignments will be given via email, and videos of all lectures will be available for download on Canvas. More detailed instructions for downloading and viewing videos will be sent to each student via Clemson email. Students are responsible for all material covered in each lecture and all material covered in all reading and homework assignments. Some lectures may cover material not found in the textbook.

Schedule: Two take-home tests and a take-home final exam will be given on the dates listed below. Students must complete and return the tests and final exam during the specified time periods:

Test 1:	Wednesday, July 10, 2:30 - 4:30 PM EDT
Test 2:	Wednesday, July 24, 2:30 - 4:30 PM EDT
Final Exam:	Friday, August 2, 3:00 - 5:30 PM EDT

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Test Policy: An electronic copy of each test and the exam will be made available at the beginning of the period, and students will be notified via Clemson email when each test is available. Each student must download and print a copy of the test paper, solve the problems by hand on the test paper, scan and create a pdf file of the completed test, and submit the pdf file of the completed test on Canvas before the end of the period. More detailed instructions for submitting tests on Canvas will be sent to each student via Clemson email.

Completed test papers must be submitted in pdf format only; no other format will be accepted. All solutions must be handwritten, and each student must supply his or her own solutions in his or her own handwriting. Each student must ensure that his or her returned pdf file is legible. No credit will be awarded for test solutions that are difficult to read.

A penalty of ten points will be deducted from the score of any late test or exam paper received within fifteen minutes after the end of the period. Papers received more than fifteen minutes after the end of the period will not be accepted.

Grading: Final averages will be calculated according to the following weights:

Test 1:	30%
Test 2:	30%
Final Examination:	40%

The final examination is mandatory for all students. The following scale will be used in assigning final letter grades:

Final average	Letter grade
90.00 - 100	A
80.00 - 89.99	B
70.00 - 79.99	C
60.00 - 69.99	D
0 - 59.99	F

Individual test scores may be curved at the discretion of the instructor; however, final averages will **not** be curved or rounded. No test or exam grades will be dropped or substituted.

Makeup Tests: Makeup tests and exams will not be given under any circumstances. Any student who fails to return a test or the final examination according to the above schedule and test policy will receive a grade of 0 for that test or examination.

Collaboration: Students are allowed to use the course text and their own notes in order to complete the tests and exam; however, all forms of collaboration during the tests and final examination are strictly prohibited. Students may ask the instructor questions via email, but they may not communicate with any other person concerning the test. Students may not give or receive aid in any form during the tests and final examination.

Homework Policy: Homework will be assigned but not collected or graded. Students are expected to complete all assignments. Solutions to homework problems will be available for download on Canvas.

Calculators: A scientific calculator will be needed for homework problems, tests, and the final examination.

Disabilities: Any student who needs accommodations for a disability should contact the Clemson University Office of Student Accessibility Services to obtain a signed letter documenting the disability. In order to obtain accommodations, the student must notify the instructor **at least one week** before the accommodations are needed.

Changes to Syllabus:

The instructor reserves the right to make changes to this syllabus during the semester. Students will be notified of any changes via Clemson email.