Syllabus: EEE 554 Random Signal Theory Spring 2023

Instructor:	Dr. Cihan Tepedelenlioğlu
Contact Info:	e-mail: `cihan@asu.edu` Office: GWC 411 D Tel:(480) 965-6623
Office Hours:	By appointment on zoom (**send e-mail**). I will make sure we find a common time to meet.
Zoom Link:	`https://asu.zoom.us/j/3872654027`
Meeting Info:	Tu,Th, 10:30-11:45, COOR 184. You can come to class or attend via zoom.
Midterm Exam:	Feb. 28
Final Exam:	Tuesday, May 2, 9:50-11:40, same room.
Textbook:	*Intuitive Probability and Random Processes using* MATLAB by S. Kay, Springer 2005.

Class Web Site: Login from `https://webapp4.asu.edu/myasu/` with your ASU login and password to canvas

Course Objective: The objective is for the students to be able to reason about random phenomena using tools from probability theory.

Prerequisites: No official prerequisite. Solid knowledge of calculus. Previous exposure to probability theory will be helpful.

Topics: We will be covering the following topics:

1. Introduction, probability basics
2. Monte Carlo simulations
3. Random variables
4. Expected value, variance, moments, characteristic functions
5. Multiple random variables
6. Conditional probability functions
7. N dimensional random vectors
8. Law of large numbers, central limit theorem
9. Random processes
10. Filtering random processes
11. Multivariate random processes
12. Gaussian random processes
13. Poisson random processes
14. Markov chains

Homework and Project: There will be about 5 homework sets, and a project throughout the semester.

Grading:		
	Homework	10 %
	Midterm Exam	30 %
	Project	20 %
	Final Exam	35 %
	Participation	5 %

Participation in the classroom, or virtually on Ed Discussion counts. Ed Discussion is a forum accessible via canvas where you can post your questions or comments throughout the semester.