STAT2056 Probability and Random Variables (3+0)
Spring 2018

Class Schedule: Tuesday 12:30 – 13:20, Wednesday 09:30 - 11:20, MB654
Instructor : Dr. Murat Doğruel, (216) 348 0292 /1655, mdogruel@marmara.edu.tr
Office Hours : Tuesday 9:30 – 11:20

Course Outline: Basic probability, conditional probability, discrete and continuous random variables, expected values for discrete and continuous random variables, multiple discrete and continuous random variables, conditional probability mass function, conditional probability density function, basic random processes, linear systems and wide sense stationary random processes.

Prerequisite: MATH 101 (Calculus I)

Objectives:
1. To familiarize students with random variables.
2. To educate students on multiple random variables.
3. To teach students wide sense stationary random processes.

Outcomes: By the end of the course the student should be able to
1. Learn the concept of a random variable,
2. Distinguish discrete and continuous random variables,
3. Apply probability models to real world problems,
4. Comprehend wide sense stationary random processes.

Textbook: S. M. Kay, *Intiutive Probability and Random Processes Using MATLAB*, Springer, 2006.

References:
1. A. Papoulis, S. U. Pillai, Probability, *Random Variables and Stochastic Processes*, McGraw Hill, 2002.
2. A. Leon-Garcia, *Probability, Statistics and Random Processes for Electrical Engineering*, Prentice Hall, 2008.
3. J. A. Gubner, *Probability and Random Processes for Electrical and Computer Engineers*, Cambridge, 2006.

Honor Code: All work done on the exams will be done on your own and pledged.

Attendance: Attendance is mandatory. No make-ups will be arranged for the random pop-quizzes.

Homework: Several homework (theoretical and computer) may be assigned. No late homework.

Grading:

Attendance and pop quizzes	10 %
Midterm exam	30 %
In-term exam	20 %
Final exam	40 %

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Tentative Schedule

Week	Date	Subject	Chapters
1	February 6	Introduction and computer simulation	1,2
2	February 13	Basic probability	3
3	February 20	Conditional probability	4
4	February 27	Discrete random variables	5
5	March 6	Expected values for discrete random variables	6
6	March 13	Multiple discrete random variables	7
7	March 20	Conditional probability mass functions	8
8		*Midterm Exam*	
9	April 10	Continuous random variables	10
10	April 17	Expected values for continuous random variables	11
11	April 24	Multiple continuous random variables	12
12	May 2	*In-term Exam*	
13	May 8	Conditional prabability density function	13
14	May 15	Basic random processes	16
15	May 22	Wide sense stationary random processes	17