



**KOÇ  
ÜNİVERSİTESİ**

**ELEC 501/402**

**Random Processes**

**Lecture 0 – Introduction to**

**ELEC 501/402**

Dr. Ertuğrul Başar

Department of Electrical and Electronics  
Engineering

Fall 2019

# Course Information

- Instructor  
Associate Professor (Doç. Dr.) Ertuğrul Başar  
[ebasar@ku.edu.tr](mailto:ebasar@ku.edu.tr) – ENG 168 - <https://corelab.ku.edu.tr/>
- Meeting Information:  
SCI Z07– **Mo We 1:00 PM - 2:15 PM** (two 75-min lectures)
- Lecture notes will be available weekly on the course website.  
*Please download and bring them with you to take further notes.*
- Course website: Blackboard
- Problem Session (*on selected weeks*):  
SOS B10 - **Fr 2:30 PM - 3:45 PM**
- TA: Ali Tuğberk Doğukan, ENG 267, [adogukan18@ku.edu.tr](mailto:adogukan18@ku.edu.tr)
- Office Hours: We 11:30 PM -1:00 PM (or by appointment)

# Prerequisites and Resources:

- Strong motivation, basic calculus and basic probability knowledge (ENGR 200)
- MATLAB and Mathematica are the programming environment.
- **Text Book:** Probability, Statistics, and Random Processes for Electrical Engineering, 3rd Ed, Alberto Leon-Garcia, Pearson Education, 2008.
- **Recommended Books:**
  - Probability, Random Variables and Stochastic Processes, A. Papoulis and S. Pillai, 4th Edition, McGraw-Hill, 2002.
  - Schaum's Outlines, Probability, Random Variables, and Random Processes, Hwei Hsu, 1997.
  - ELEC 501 Lecture Notes, A. M. Tekalp, 2017.

# Evaluation Methodology

<b>Item</b>	<b>%</b>	<b>DATE</b>
Midterm Exam	35	Week 8 (6-Nov-19)
HWs & Quizzes	15	
Final Exam	50	TBA

- Make-up Exam Policy: Students with a university-approved excuse for the Midterm Exam or the Final Exam will be allowed to take the single Make-up Exam at the end of the semester (after final exams, date to be announced).
- Make-up Exam will cover all semester topics!
- Conditions for the entrance to the Final Exam:
  - Entrance to the Midterm Exam and obtaining a minimum score of 30

Asking questions is the key to learning !!!

# Academic Dishonesty

- Academic dishonesty is a serious violation of the trust upon which an academic community depends.
- The students must submit their own work in all exams, quizzes, and homeworks.
- In exams and quizzes, all forms of information exchange and talking between students is forbidden.
- KU Statement on Academic Dishonesty  
[https://vpaa.ku.edu.tr/wp-content/uploads/2019/08/Akademik\\_Durustluk\\_Beyani\\_VPAA.pdf](https://vpaa.ku.edu.tr/wp-content/uploads/2019/08/Akademik_Durustluk_Beyani_VPAA.pdf)

WEEK	Course Outline	DATE
1	Intro. to ELEC 501 (Lecture 0) & Probability Models in Elec. Eng. (Lecture 1)	16-18 Sep
2	Basic Concepts in Probability (Lecture 2)	23-25 Sep
3	Discrete Random Variables (Lecture 3)	30-2 Sep
4	One Random Variable (Lecture 4)	7-9 Oct
5	One Random Variable (Lecture 4) & Pairs of Rand. Variables (Lecture 5)	14-16 Oct
6	Pairs of Random Variables (Lecture 5)	21-23 Oct
7	Vector Random Variables (Lec. 6) & Sums of Random Variables (Lec. 7)	28-30 Oct
8	No Lecture (Mo-We) & Midterm Exam (We)	4-6 Nov
9	Statistics & Introduction to Estimation Theory (Lecture 8)	11-13 Nov
10	Random Processes Part I (Lecture 9)	18-20 Nov
11	Random Processes Part II (Lecture 10)	25-27 Nov
12	Random Processes Part II (Lecture 11)	2-4 Dec
13	Analysis and Processing of Random Signals (Lecture 12)	9-11 Dec
14	Markov Chains (Lecture 13)	16-18 Dec