

OSTİM TECHNICAL UNIVERSITY ENGINEERING FACULTY

IENG 203 - PROBABILITY AND STATISTICS I COURSE CURRICULUM FORM 2022-2023

IENG 203 – Probability and Statistics I							
Course Name	Course Code	Period	Hour	Application Time	Lab Time	Credit	ECTS
Probability and Statistics I	IENG 203	1	3	0	0	3	4

Precondition	No
Language of the Course	English
Type of the Course	Compulsory
Course Level	Bachelor Degree
Method of Teaching	Face to face, Online
Course Learning and Teaching Techniques	Lecture, Question and Answer, Application

The Aim of Course

The aim of this course is to introduce the place and importance of probability theory in engineering applications and to teach the methods (probability distributions) used to describe random systems. With the completion of the course, it is aimed that students will be able to model random processes and make probability calculations of the situations that occur in the processes.

Course Education/Learning Outcomes

Students who successfully complete this course;

- 1. They learn to use basic probability concepts.
- 2 They can analyze and calculate probability types, conditional probabilities, independent events and Bayes rule.
- 3 They know the concept of random variables, properties of random variables, modeling processes using random variables, and using random variables in probability calculations.
- 4 Can make calculations with discrete and continuous random variables, discrete and random variables, use these variables in the definition of processes and make necessary probability calculations.

5 They learn the distributions of continuous and random variables and the basic information necessary for defining processes from multivariate distributions and making probability calculations.



Course Content

Counting rules, basic probability concepts, conditional probability and Bayes rule, random variables and their properties, discrete random variables and distributions, continuous random variables and distributions, multivariate distributions.



Weekly Topics and Related Preparation Studies					
Week	Topics	Preliminary			
1	Probability, set and sample space definitions				
2	Counting Rules				
3	Basic Probability Concepts				
4	Conditional Probability				
5	Random Variables and Their Properties				
6	Discrete Random Variables and Their Distributions				
7	Discrete Random Variables and Their Distributions				
8	Midterm Exam				
9	Discrete Random Variables and Their Distributions				
10	Discrete Random Variables and Their Distributions				
11	Continuous Random Variables and Their Distributions				
12	Continuous Random Variables and Their Distributions				
13	Continuous Random Variables and Their Distributions				
14	Continuous Random Variables and Their Distributions				
15	Bi- and Multivariate Distributions				
16	Final Exam				

Resources (Textbook and Supplementary Books)

Türkçe Kaynaklar Fikri AKDENİZ, "Olasılık ve İstatistik", Nobel Kitabevi, Adana, 2010.

Yabancı Kaynaklar

Ross, S. M. (2014). Introduction to probability models. Academic press. Devore, J. L. (2011). Probability and Statistics for Engineering and the Sciences. Cengage learning.

Evaluation System				
Studies	Number	Contribution Margin		
Continue				
Laboratory				
Application				
Field Study				
Course Specific Internship (if applicable)				
Quizzes/Studio/Critical				
Homework				
Presentation				
Projects				
Report				
Seminar				
Midterm Exams/Midterm Jury	1	% 40		
General Exam/Final Jury	1	% 60		
	Total	% 100		
Contribution to the Success Grade of Mid-Semester Studies		% 40		
Contribution of End of Semester Studies to Success Grade		% 60		
	Total	% 100		

Course Category				
Basic Vocational Courses	Х			
Specialization/Field Courses				
Support Lessons				
Communication and Management Skills Lessons				
Transferable Skills Lessons				



Relation of Course Learning Outcomes and Program Qualification								
No. Drogram Qualifications / Quitagmas			Co	Contribution Level				
NO	No Program Qualifications / Outcomes		1	2	3	4	5	
	Ability to design, conduct experiments, collect data, evaluate and interpret							
1	1 results for the analysis and solution of Industrial Engineering problems.						х	
2	2 To be able to use course information in solving industrial engineering problems.						х	
3	3 Acquisition of analytical thinking skills					х		
4	Ability to use information technologies required for Industrial Engineering				x			
5	Having an up-to-date and sufficient background in engineering, mathematics, science and social sciences related to industrial engineering; To be able to use the theoretical and applied knowledge in these fields together in solving industrial engineering problems.						x	
	ECTS/Workload Tab	le						
	Activities	Number	Duration (Hours)		w	Total Workload		
Lesso	n hours (Including the exam week: 16 x total lesson hours)	16	3		48	48		
Labor	Laboratory							
Applic	cation							
Cours	e Specific Internship							
Field Study								
Out of	Out of Class Study Time		3	3 48				
Presentation/Seminar Preparation								
Projects								
Repor	Reports							
Homeworks								
Quizzes/Studio Critic								
Preparation Time for Midterm Exams/Midterm Jury 1		1	16	6		16		
Preparation Time for the General Exam/General Jury		1	16		16			
Total Workload		(128/30 :	J = 4)		128	3		