Course title		Code	semester	T+U	credit	ECTS
Probability and Statistics			5	3+0	3	4

Prerequisite Courses	None
Language of the Course	English
Course Level	Undergraduate
Type of Course	Optional
Course Coordinator	
Instructors	
Course Assistants	
The aim of lesson	The aim of the course is to give some basic terms and concepts in probability and statistics and to teach how and why to use statistical methods and probability theory in engineering.
Course Content	Basic concepts and rules of probability, Random variables: Discrete and continuous, Expected value and variance, covariance, Marginal and Conditional distributions with variables, Popular distributions, Sampling and Descriptive Statistics, Introduction to probability theory, Interval estimation, Hypothesis tests, Simple linear regression and correlation
Course Learning Outcomes	Students who successfully complete this course; 1. will be able to use the basic principles of descriptive statistics. 2. Will be able to draw conclusions from random variables and calculate simple probabilities. 3. Will be able to control and/or perform statistical surveys. 4. will be able to use general terminology for this course.

Weeks	Topics
one	Introduction to probability and statistics, its history, interdisciplinary phenomena, general application areas
2	Arrangement of Data (simple, frequency and class series, cumulative-proportional frequencies, graphs)
3	Means (Arithmetic, Mode, Median …) Random variables (Discrete and continuous random variables, density and distributions)
4	Probability (Sample space, event, axioms, set theory, counting, permutation, combination) conditional probability, Bayes' theorem) Measures of Variability and Asymmetry Random variables (Expected value, variance, covariance)
5	Random Variables (Continuous random variables)
6	Random Variables (Discrete random variables)
7	Discrete Probability Distributions (Bernoulli, Binomial, Geometric, Hypergeometric, Poisson)
8	Discrete Probability Distributions (Bernoulli, Binomial, Geometric, Hypergeometric, Poisson)
9	Estimation theory 1(Forecasting and estimation methods, population mean and rate interval estimation)
10	Estimation theory 1 (Confidence interval, population mean, population variance, population ratio interval estimation)
11th	Estimation Theory 2 (Confidence interval of difference between means, confidence interval of difference between ratios)
12	Hypothesis Tests 1(Error types, critical value, decision making, population mean test, population variance test, population ratio test)
13	Hypothesis Tests 2 (Test for difference between means, test for difference between ratios)
14	Simple Regression and Correlation (Parameter estimation, coefficient of determination, regression Model)

15	Simple Regression and Correlation (Parameter estimation, coefficient of determination, regression Model)

General Competencies

To be able to teach basic terms and concepts in probability and statistics, statistical methods in engineering and how and why to use probability theory.

resources

M. Turanlı & S. Güriş, "Basic Statistics", Der Publications, 2010, ISBN : 9789753531993

Evaluation System

The dates, days and hours of the Midterm Exam, Quiz, Final Exam and Evaluations will be announced later, according to the decision of the Faculty Administrative Board.

	WITH PROGRAM LEARNING OUTCOMES COURSE LEARNING OUTCOMES RELATIONSHIP TABLE										
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	4	3	4	4	5	3	4	4	3	4	5
INCREASE 2	4	3	4	4	5	3	4	4	3	4	5
INCREASE 3	4	3	4	4	5	3	4	4	3	4	5
INCREASE 4	4	3	4	4	5	3	4	4	3	4	5
LO: Learning Outcomes OP: Program Outcomes											
Contribution Level	1 Very Low		2 Low		3 Medium		4 High		5 Very High		

Relation of Program Outcomes and Related Course

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
Probability and Statistics	4	3	4	4	5	3	4	4	3	4	5