COURSE DESCRIPTION FORM	
Course Code and Name	BM207 PROBABILITY AND STATISTICS
Course Semester	3
Catalogue Data of the Course (*Course Content*)	Definition of probability, axioms of probability, some simple propositions, Estimation and Hypothesis testing
Course Textbooks	Probability and Statistics for Engineers and Scientists (9th Edition), Ronald E. Walpole, Pearson, 2011.
Supplementary Textbooks	- Probability and Statistics for Computer Scientists, Michael Baron, Chapman and Hall, 2006. - Probability and Statistics for Computer Science, David Forsyth, Springer, 2017.
Credit (*ECTS*)	4
Prerequisites for the Course (*Attendance Requirements*)	There is no prerequisite or co-requisite for this course.
Course Type	Compulsory
Language of Instruction	Turkish
Course Objectives	To provide students with the ability to apply mathematical knowledge to engineering problems To provide students with the ability to design and conduct experiments Teaching probability computation, distributions and their properties
Course Learning Outcomes	1. Defines basic concepts of probability and statistics 2. Explains probability distributions and their features 3. Explains central tendency and dispersion measures 4. Does sampling and hypothesis testing 5. Does regression analysis
Instruction Method (*Face-to-face, Distance education etc.*)	The mode of delivery of this course is face to face
Weekly Schedule of the Course	Week 1: Sample space, sample points, events, the basic principle of counting, permutation, combination Week 2: Definition of probability, axioms of probability, some simple propositions Week 3: Conditional probability, independent events, Bayes' Formula Week 4: Random variable, distribution of discrete random variable, distribution of continuous random variable Week 5: Distribution functions, expected value and variance of a random variable, moments Week 6: Some discrete probability distributions Week 7: Some continuous probability distributions Week 8: Statistics, data, variable, frequency distributions, graphics Week 9: Central Tendency and Dispersion measures Week 10: Central Tendency and Dispersion measures Week 11: Sampling and sampling distributions Week 12: Estimation and Hypothesis testing Week 13: Estimation and Hypothesis testing Week 14: Regression and correlation
Teaching Activities (*The time spent for the activities listed here will determine the amount of credit required*)	Weekly theoretical course hours: 3 Reading Activities Internet browsing, library work Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam

Assessment Criteria		Number(s)	Weight (%)
	Midterm exam	1	40
	Assignment	1	20
	Application		

	Project			
	Practice			
	Quiz			
	Final exam	1	40	
	Total	3	100	

	Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload
Workload of the Course	Weekly theoretical course hours	14	3	42
	Weekly practical course hours			
	Reading activities	10	2	20
	Internet search and library work	10	1	10
	Designing and implementing materials			
	Making a report			
	Preparing and making presentations			
	Midterm and revision for midterm	1	13	13
	Final exam and revision for final exam	1	15	15
	Total workload			100
	Total workload/ 25			4
	Course Credit (ECTS)			4

	No	Program Outcomes	1	2	3	4	5
Contribution Level between Course Outcomes and Program Outcomes	1	Knowledge of mathematics, science, basic engineering, computing, and computer engineering; ability to use this knowledge in solving complex engineering problems.					X
	2	Ability to define, formulate and analyze complex engineering problems using basic science, mathematics and engineering knowledge and considering the UN Sustainable Development Goals relevant to the problems addressed.					X
	3	Ability to design creative solutions to complex engineering problems; ability to design complex systems, processes, devices, software, algorithms or products to meet current and future requirements, considering realistic constraints and conditions.			X		
	4	Ability to select, use and develop appropriate techniques, resources and modern engineering and informatics tools, including estimation and modeling, for the analysis and solution of complex engineering problems while being aware of their limitations.					X
	5	Ability to use research methods to examine complex engineering problems or research topics in computer engineering, including reviewing the literature, designing experiments, conducting experiments, collecting data, analyzing and interpreting results.					
	6	Knowledge of the effects of engineering practices and the standards used in these practices on society, health and safety, economy, sustainability and environment within the scope of the UN Sustainable Development Goals; awareness of the consequences of engineering solutions in the fields of information security and law.					

	7	Acting in accordance with engineering professional principles and knowledge on ethical responsibility; awareness of acting impartially, without discrimination on any issue, and being inclusive of diversity.		X			
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).					
	9	Ability to conduct effective verbal and written communication on technical issues in Turkish or English, prepare reports, make effective presentations and prepare software documentation, considering the various differences of the target audience (such as education, language, profession).		X			
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.					
	11	Lifelong learning skill that includes the ability to learn independently and continuously, to adapt to new and developing scientific practices and technologies, and to think inquisitively about technological changes.					
Lecturer(s) and Contact Information	Computer Engineering Department Chair bmbb@gazi.edu.tr						