

Subject code: - BS 202

Probability statistics and Linear Programming

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CO	Statement	Blooms Level
CO1	To understand and analyze probability and statistical modelling	Understand
CO2	Ability to analyze and understand data summarize and sampling theory	Analyze
CO3	Ability to apply test for hypothesis in real life statistical models.	Apply
CO4	To understand the concept of linear programming problem and able to create linear models	Design

COs-POs matrices of selected course in 4th Semester

Course outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Course Code:- BS 202												
CO1	2	2	1	1	1	2		--	--	1	1	2
CO2		1	1	1	1	--	2	--	2	1	1	2
CO3		1	2	2	1	2	1	--	1	--	2	2
CO4		3	3	3	3	--	--	--	2	3	2	

Justification of CO-PO mapping

Mapping	LOW/ MEDIUM/ HIGH	Justification
BS202.1-PO1	MEDIUM	The concept of basic probability is acquired for finding the solution of major engineering problems. It's essential in areas like Quality Control, Risk Assessment, System Reliability, and Data Analysis..
BS 202.1-PO2	MEDIUM	The knowledge of probability and statistical analysis are adopted to identify the consequential responsibilities relevant to professional engineering practices.
BS 202.1-PO3	LOW	The concept of probability needed in managing projects and in multidisciplinary environments.
BS 202.1-PO4	LOW	The Comprehension of random variables and joint probability are needed for finding the solution of complex engineering problems.
BS 202.1-PO6	MEDIUM	Numerical summaries of data helps to understand the latest technologies, software tools and their limitations for modelling in complex engineering activities like data handling, data mining.
BS 202.1-PO10	LOW	The knowledge of probability distributions are adopted to identify the consequential responsibilities relevant to professional engineering practices.

BS 202.1-PO11	LOW	The Knowledge of random variables and distributions are important for finding the solution of complex real life problems which are helpful in managing projects and in Multidisciplinary environments.
BS 202.1-PO12	MEDIUM	The analysis technique of the given random variables be applied in the broadest context of technological change.
BS 202.2-PO2	LOW	Various data analysis technique in statistical methods are used to conduct investigations of complex engineering problems
BS 202.2-PO3	LOW	The data analysis technique is helpful in managing projects and in multidisciplinary environments of complex engineering problems.
BS 202.2-PO4	LOW	Different techniques of sampling distribution are analysing the role in engineering field like dynamical systems, risk analysis, quality testing etc.
BS 202.2-PO5	LOW	To interpretation of the data, performing the analysis and drawing the conclusions in various research related problems, fundamental knowledge of statistical techniques are required.
BS 202.2-PO7	MEDIUM	The data summaries techniques are also needful for preparation and ability to engage in independent and life-long learning in the broadest context of technological change
BS 202.2-PO9	MEDIUM	Methods of central limit theorem for finding the solution of engineering problem function effectively as an individual or in diverse teams.
BS 202.2-PO10	LOW	The numerical integration and numerical differentiation very needful for designing solutions to engineering problems and develop solutions that meet the specific needs of society.
BS 202.2-PO11	LOW	Logics related with statistical tools like covariance and correlation are used for designing solutions to many multidisciplinary settings.
BS 202.2-PO12	MEDIUM	Exact sampling distributions are used to analyse data related to environmental factors such as pollution levels, climate change, and ecological trends.
BS 202.3-PO2	LOW	Hypothesis testing are used to determine the effectiveness of a new product in manufacturing fields.
BS 202.3-PO3	MEDIUM	Logics related with numerical methods are used for designing solutions to engineering problems and develop solutions that meet the specific needs of society.
BS 202.3-PO4	MEDIUM	Regression allows researchers to predict or explain the variation in one variable based on another variable. This allows the best interpretation of large data set.
BS 202.3-PO5	LOW	Regression technique also helps to work on the latest technologies, resources and software tools including prediction and modelling to complex engineering activities
BS 202.3-PO6	MEDIUM	The knowledge of testing of hypothesis is adopted to identify the consequential responsibilities relevant to professional engineering practices
BS 202.3-PO9	LOW	Regression has a wide range of real life applications. In correlating and developing a relation between two different data set it is widely used.
BS 202.3-PO11	MEDIUM	The investigation of statistical constants for various probability distributions is widely used for the solution of complex engineering problems

BS 202.3-PO12	MEDIUM	Various LPP techniques are also helpful to research-based knowledge and research methods, including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
BS 202.4-PO2	HIGH	The transportation technique also very effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
BS 202.4-PO3	HIGH	LPP techniques are also helps for the analysis of engineering problems and develop solutions that meet the specific needs of society.
BS 202.4-PO4	LOW	Linear programming problems are helps to design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
BS 202.4-PO5	LOW	Linear programming problems also helps to work on the latest technologies, resources and software tools including prediction and modelling to complex engineering activities
BS 202.4-PO9	MEDIUM	Linear programming problems are very effective to work in multidisciplinary field of engineering and sciences as individual or teams work.
BS 202.4-PO10	HIGH	Mathematical programming problems effectively apply on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations
BS 202.4-PO11	MEDIUM	The Knowledge of Linear programming problem are important for finding the solution of complex engineering problems which are helpful in managing projects and in Multidisciplinary environments

Mapping	LOW/ MEDIUM/ HIGH	Justification
BS 202.1-PSO1	HIGH	Concepts of probability and statistics helps in analysing and designing of circuits.
BS 202.2-PSO1	HIGH	Fundamental knowledge statistical techniques forms the basis of computer engineering problems encountered in research industry and designing of engineering circuits.
BS 202.2-PSO2	MEDIUM	Fundamental knowledge statistical methods are helpful in understanding the role of devices in communication.
BS 202.3-PSO2	HIGH	The fundamental knowledge of statistical data interpretation required functionality in Communication systems.
BS 202.4-PSO2	HIGH	Linear programming approaches tools are much capable to design and analyse circuits for analog and digital systems.