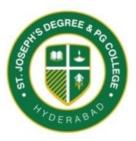
ST. JOSEPH'S DEGREE & PG COLLEGE

(Autonomous) - Affiliated to Osmania University Re-accredited by NAAC (3rd Cycle) Basheerbagh, King Koti Road, Hyderabad – 29

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (LOCF) FOR UNDERGRADUATE PROGRAMMES

FACULTY OF SCIENCES DEPARTMENT OF MATHEMATICS & STATISTICS COURSE: STATISTICS



B.Sc Data Science (Honors) (w.e.f. 2024 – 2025)

Semester-I

Scheme of Instruction	Scheme of Examination
Course Code: BSP-1-ST-24T	Course Title: Basic Statistics and Probability
Credits: 4	Max. Marks: 100 Marks
Category : DSC	Internal Examination : 30 Marks
Hours/Week: 4	SBT :10 Marks
Total duration Hrs: 60 Hrs	External Examination: 60 Marks
Instruction Mode: Lecture + Practical	Exam Duration: 3 Hrs

Course Objectives:

To equip students with the skills to understand, classify, and analyze diverse data types through comprehensive data collection methodologies, fostering proficiency in descriptive statistics and its real-life applications, while establishing a solid foundation in probability theory.

Course Outcomes: By the end of the course the student would be able to	Cognitive Level
CO1: Apply the knowledge of collection, classification, analysis and interpretation of primary and secondary data and to apply the measures of central tendency and dispersion.	BL4
CO 2: Analyze and solve complex probability problems, conditional probability, independence of events, addition and multiplication theorems, Boole's inequality, Bayes' theorem, and counting methods.	BL5
CO 3: Analyze and manipulate random variables, including understanding discrete and continuous distributions, functions of random variables, bivariate distributions, joint, marginal, and conditional distributions.	BL4
CO 4: Analyze and compute mathematical expectations, moments, covariance, and inequalities, as well as understand and apply the central limit theorem and properties of moment generating functions in practical applications.	BL4

Semester-I

Scheme of Instruction	Scheme of Examination
Course Code: BSP-1-ST-24P	Course Title: Basic Statistics and Probability
	(Practical)
Credits: 1	Max. Marks : 50 Marks
Category : DSC	Internal Examination: 20 Marks
Hours/Week:3	External Examination: 30 Marks
Total duration Hrs: 45 Hrs	Exam Duration: 3 Hrs
Instruction Mode: Practical	
Course Objectives	

Course Objective:

To proficiently analyze and present data using diagrammatic and graphical techniques in MS Excel and SPSS, while mastering computation methods for measures of central tendency, dispersion, non-central and central moments, as well as coefficients of skewness and kurtosis.

Course Outcomes: By the end of the course the student would be able to	
CO1: Analyze, visualize, and interpret data using MS-Excel and SPSS, encompassing diagrammatic and graphical presentations such as bar charts, pie charts, histograms, frequency	BI.4
polygons, and ogives to solve manual and practical problems.	DL4
CO 2: Solve problems related to absolute and relative measures of dispersion, central and non-central moments, coefficients of skewness, and kurtosis effectively using MS-Excel and SPSS.	BL5

Semester-II

Scheme of Instruction	Scheme of Examination
Course Code: DCPD-2-ST-24T	Course Title :Discrete and Continuous Probability
	Distributions
Credits: 4	Max. Marks : 100 Marks
Category : DSC	Internal Examination: 30 Marks
Hours/Week: 4	SBT :10 Marks
Total duration Hrs: 60 Hrs	External Examination : 60 Marks
Instruction Mode: Lecture + Practical	Exam Duration : 3 Hrs.
C Oliver	•

Course Objectives:

To equip students with a comprehensive understanding of discrete and continuous probability distributions, emphasizing properties and real-life applications, along with exploring approximations and limiting cases.

Course Outcomes: By the end of the course the student would be able to	
	Level
CO1: Analyze and interpret data related to uniform and Bernoulli distributions, probability	BL4
mass functions of binomial and Poisson distributions, and their respective properties with	
real-life applications.	
CO 2: Analyze and interpret data related to negative binomial, geometric, and hyper	BL4
geometric distributions, exploring their properties with real-life applications.	
CO 3: Analyze and interpret data related to normal distributions, exploring properties with	BL4
real-life applications.	
CO 4: Analyze and interpret data related to rectangular, exponential, gamma, and beta	BL4
distributions, exploring with real-life applications.	

Semester-II

Scheme of Instruction	Scheme of Examination
Course Code: DCD-2-ST-24P	Course Title: Discrete and Continuous Distributions
	(practical)
Credits: 1	Max. Marks : 50 Marks
Category : DSC	Internal Examination : 20 Marks
Hours/Week: 3 Hrs.	SBT :NA
Total duration Hrs : 45 Hrs.	External Examination : 30 Marks
Instruction Mode: Practical	Exam Duration : 3 Hrs.
Course Objectives	·

Course Objectives:

To equip students with a comprehensive understanding of discrete and continuous probability distributions, emphasizing properties and real-life applications, along with exploring approximations and limiting cases.

Course Outcomes: By the end of the course the student would be able to	
	Level
CO1: Solve practical problems manually and also using MS-Excel and SPSS to fit various	BL4
discrete probability distributions.	
CO 2: Apply manual and practical problem-solving techniques using MS-Excel and SPSS to	BL4
fit various continuous probability distributions.	