


Curriculum Plan (EVEN SEM 2025): B.A. (Prog) III Year (Semester VI)
DSC-6: Probability and Statistics

<p>Dr. Tajender Kumar</p> <p>Assistant Professor Department of Mathematics Kalindi College (University of Delhi) Delhi- 110008 Mobile: +91 7417837644 E- mail: tajenderkumar@kalindi.du.ac.in</p>		<p>Marks Distribution</p>	<p>Theory</p>	90 Marks	
			<p>Tutorial</p>	40 Marks	
			<p>Internal Assessment</p>	<p>Assignment</p>	12 Marks
				<p>Home Exam/ Class Test</p>	12 Marks
		<p>Classes Assigned</p>	<p>Lectures</p>	3 per week (Theory)	
			<p>Lab</p>	2 per week	
<p>References</p>	<p>1. Devore, Jay L. (2016). <i>Probability and Statistics for Engineering and the Sciences</i> (9th ed.). Cengage Learning India Private Limited. Delhi. Indian Reprint 2020.</p>				
	<p>Week</p>	<p>Topics</p>			
	<p>Beginning/1st week with 3 days 02nd Jan. - 11th Jan.</p>	<p>Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dotplots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots. [1]: Chapter 1.</p>			
	<p>2nd week 13th Jan. – 18th Jan</p>	<p>Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dotplots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots. [1]: Chapter 1.</p>			

	3rd week 20 th Jan. – 25 th Jan.	Sample spaces and events, Probability axioms and properties, Conditional probability, Bayes' theorem and independent events. [1]: Chapter 2.	
	4th week 27 th Jan. – 01 st Feb.	Sample spaces and events, Probability axioms and properties, Conditional probability, Bayes' theorem and independent events. [1]: Chapter 2.	
	5th week 03 rd Feb.- 08 th Feb.	Discrete random variables and probability distributions, Expected values; Probability distributions with their mean and variance: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit. [1]: Chapter 3.	
	6th week 10 th Feb. – 15 th Feb.	Discrete random variables and probability distributions, Expected values; Probability distributions with their mean and variance: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit. [1]: Chapter 3.	
	7th week 17 th Feb. – 22 nd Feb.	Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values. [1]: Chapter 4 (Sections 4.1, and 4.2).	
	8th week 24 th Feb. – 01 st Mar.	Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values. [1]: Chapter 4 (Sections 4.1, and 4.2).	
	9th week 03 rd Mar.– 08 th Mar.	Normal and standard normal distributions with their percentiles, Approximating the binomial distribution; Exponential distribution, Lognormal distribution.	

		[1]: Chapter 4 [Sections 4.3, 4.4 (up to Example 4.22 page 172), and 4.5 (Definition page 179 to Example 4.27)].	
	10th week 17 th March. – 22 th Mar.	Normal and standard normal distributions with their percentiles, Approximating the binomial distribution; Exponential distribution, Lognormal distribution. [1]: Chapter 4 [Sections 4.3, 4.4 (up to Example 4.22 page 172), and 4.5 (Definition page 179 to Example 4.27)].	
	11th week 24 th Mar. – 29 th Mar.	Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications. [1]: Chapter 5 (Section 5.4).	
	12th week 31 st Mar. – 05 th Apr.	Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications. [1]: Chapter 5 (Section 5.4).	
	13th week 07 th Apr. – 12 th Apr.	Scatterplot of bivariate data, Regression line using principle of least squares (statement with normal equations), Predicted values and the residuals, Error sum of squares, Coefficient of determination, The sample correlation coefficient and properties. [1]: Chapter 12 [Sections 12.1 (up to Example 12.2), 12.2, and 12.5 (up to page number 529)].	
	14th week 14 th Apr. – 19 th Apr.	Scatterplot of bivariate data, Regression line using principle of least squares (statement with normal equations), Predicted values and the residuals, Error sum of squares, Coefficient of	

		determination, The sample correlation coefficient and properties. [1]: Chapter 12 [Sections 12.1 (up to Example 12.2), 12.2, and 12.5 (up to page number 529)].	
	15th week with 2 Days 21 st Apr. – 29 th Apr.	Revision	
Dispersal of classes, preparation leave and practical examination begin- 30 April, 2025.			