Department of BCA

Lesson Plan

Program: BCA   **Semester:** III   **Course Code**: BCA 305   **Course Name: Elements of Statistics**

Course Objectives

(CO1): To enumerate the fundamental knowledge of Population, Sample and Data Condensation
(CO2): To understand concept of Measures of Central Tendency
(CO3): To understand the concept of Measures of Dispersion
(CO4): To understand the concept of Permutations and Combinations
(CO5): To understand the concept of Sample space, Events and Probability
(CO6): To understand the concept of Statistical Quality Control.

Session Duration: 60 minutes

Participants: BCA Third Semester Students

Entry level knowledge and skills of students
    i. General idea about Arithmetic
    ii. General idea about frequency and data

Equipment required in Classroom/ Laboratory/ Workshop
    i. projector
    ii. Marker and white board

Assessment Schemes

S. No.	Criteria	Marks (100)
1	**CCSU End Term Examination**	75
2	**Internal Evaluation Scheme**	25
2(a)	**Teacher Assessment (Continuous Evaluation) (Assignment & attendance)**	25
2(a)(i)	**Assignment -1**	10
2(a)(ii)	**Assignment -2**	10
2(a)(iii)	**Attendance (compulsory)**	5

Course Outcomes (starting with action-oriented observable and measurable verb)

(CO1): Able to understood the concept of Population, Sample Data   **Understanding (K2)**

(CO2): Able to understand the meaning of Central tendency   **Understanding (K2)**

(CO3): Able to understood the concept of Dispersion and Variation

Understanding (K2), Applying (K3)

(CO4): Able to understood the concept of Permutation & Combination Problems, Real Life Uses.

Applying (K3)

(CO5): Able to understand the concept Probability and its application.   **Understanding (K2)**

(CO6): Able to understand the concept of Quality Control.   **Understanding (K2)**

L. No.	Topics	Sub Topics	Date of implementation	Pedagogy	CO-Covered	Faculty Sign	HoD's Remark with Date
Unit - 1							
1.	Discussion about the Subject Syllabus and Learning outcomes	Course Objective & Course Outcome			CO-1 TO CO-6		
2.	Population, Sample and Data Condensation	concept of population and simple		lecture	Co-1		
3.		Raw data, attributes and variables		lecture	Co-1		
4.		classification					
5.		frequency distribution		lecture	Co-1		
6.		Comulative frequency distribution		lecture	Co-1		
7.	University ques and Assignment			Brainstorming lecture	Co-1		
8.	Revision						
Unit - 2							
9.	**Measures of**	Concept of		lecture	Co-2		

	Central Tendency	central Tendency					
10.		requirements of a good measures of central tendency		lecture	Co-2		
11.		Arithmetic mean		lecture	Co-2		
12.		Median		lecture	Co-2		
13.		Mode, Harmonic Mean, Geometric mean for grouped and ungrouped data.		lecture	Co-2		
14.	University ques and Assignment			Lecture Brainstorming	Co-2		
15.	Doubt class			Lecture Brainstorming	Co-2		
16.	Class test				Co-2		
17.	Revision						
Unit - 3							
18.	**Measures of Dispersion**	Concept of dispersion		lecture	Co-3		
19.		Absolute and relative measure of dispersion		lecture	Co-3		
20.		range variance		lecture	Co-3		
21.		Standard deviation		lecture	Co-3		
22.		Coefficient of variation		lecture	Co-3		
23.	University ques and Assignment			Lecture Brainstorming	Co-3		
24.	Doubt class			Lecture Brainstorming	Co-3		
25.	Revision						

Unit - 4							
26.	**Permutations and Combinations**	Concept of permutation		lecture	C0-4		
27.		Concept of combination		lecture	C0-4		
28.		Permutations of 'n' dissimilar objects taken 'r' at a time (with or without repetitions). $^{n}P_r = n!/(n-r$		lecture	C0-4		
29.		Combinations of 'r' objects taken from 'n' objects. $^{n}C_r = n!/(r!(n-r)!)$		lecture	C0-4		
30.		Nunerical based on above		lecture	C0-4		
31.	University Ques and Assignment			Lecture Brainstorming	C0-4		
32.	Doubt class			Lecture Brainstorming	C0-4		
33.	Class test				C0-4		
34.	Revision						
Unit - 5							
35.	**Sample space, Events and Probability**	Experiments and random experiments, Ideas of deterministic and non-deterministic experiments		lecture	CO-5		
36.		Definition of sample space, discrete sample space,		lecture	CO-5		

		events;					
37.		Types of events		lecture	CO-5		
38.		Classical definition of probability, Addition theorem of probability without Proof		lecture	CO-5		
39.		Definition of conditional probability Definition of independence of two events, simple numerical problems		lecture	CO-5		
40.	University ques and Assignment			Lecture Brainstorming	CO-5		
41.	Doubt class			Lecture Brainstorming	CO-5		
42.	Revision						
UNIT-6							
43.	**Statistical Quality Control**	Introduction, control limits, specification limits, tolerance limits		lecture	Co-6		
44.		process and product control		lecture	Co-6		
45.		Control charts for X and R		lecture	Co-6		
46.		Control charts for number of defective {n-p chart}		lecture	Co-6		

47.		control charts for number of defects {c -chart}		lecture	Co-6		
48.	University ques and Assignment			lecture	Co-6		
49.	Doubt class			lecture	Co-6		
50.	**Revision**			lecture	Co-6		

Text Books: J.K.Sharma "Introduction of Statistics"

Reference Books: Dr. SP Gupta "Introduction of Statistics"

Journals: Statistical Theory and Applications