SHIVAJI UNIVERSITY, KOLHAPUR.

Estd. 1962

NAAC "A++" Grade

Faculty of Commerce and Management

Syllabus For

BCA Part II (Sem III & IV) (CBCS)

(To be implemented from June 2021 onwards)

(Subject to the modifications that will be made from time to time)

Course code: AEC304	Elements of Statistics	Credit :04	Marks:100
Course Outcomes	After completion of this course student should be able to- 1) Explain various term used in Statistics. 2) Describe the Measures of Central Tendency and Dispersion 3) Understand Analysis of Bivariate data(Correlation and Regression) 4) Elaborate Sampling Techniques and Time Series Analysis.		

UNIT No.	Description	No. of Periods
I	**Introduction to Statistics** 1.1 Meaning and Scope of Statistics, Primary and Secondary data. 1.2 Frequency, Frequency distribution, Qualitative and quantitative data, Discrete and Continuous variables. 1.3 Representation of frequency distribution by graphs: Histogram, Frequency polygon, Frequency curve, O give curve. Representation of Statistical data by Bar diagram and Pie chart. 1.4 Numerical examples based on 1.2, 1.3.	15

II	**Measures of Central Tendency and Dispersion**
	2.1 Measures of central Tendency (Averages)
	    2.1.1 Meaning of averages, Requirements of good average.
	    2.1.2 Definitions of Arithmetic mean (A.M.), Combined mean, Median, Quartiles, Mode, Relation between mean, median and mode.
	    2.1.3 Merits and Demerits of Mean, Median and Mode.
	    2.1.4 Numerical examples based on 2.1.2. 2.1.5 Determination of Median and Mode by Graph.
	2.2 Measures of Dispersion (Variability):
	    2.2.1 Meaning of Variability, Absolute and Relative measures of dispersion.
	    2.2.2 Definitions of Q.D., M.D., S.D. and Variance, Combined variance and their relative measures, Coefficient of Variation (C.V.).
	    2.2.3 Numerical examples based on 2.2.2.
		15

III	**Analysis of Bivariate data:**
	3.1 Correlation:
	    3.1.1 Concept of Correlation, Types of correlation (Positive, Negative, Linear and Non-linear), Methods of studying correlation: Scatter diagram, Karl Pearson's Correlation Coefficient (r) and Spearman's Rank Correlation Coefficient (R).
	    3.1.2 Interpretation of r = + 1, r = -1, r = 0.
	    3.1.3 Numerical examples on 3.1.1and 3.1.2
	3.2 Regression:
	    3.2.1. Concept of Regression, Definitions of regression coefficients and Equations of regression lines. Properties of regression coefficients (Statements only)
	    3.2.2 Numerical examples on 3.2.1.
		15

IV	**Sampling Techniques and Time Series Analysis:**	15
	4.1 Sampling Techniques:	

Sampling Techniques and Time Series Analysis: 15

4.1 Sampling Techniques:
  4.1.1 Definitions of Sample, Population, Sampling, Sampling Method and Census method. Advantages of sampling method over census method.
  4.1.2 Types of sampling: Simple Random Sampling (with and without replacement), Stratified Random Sampling, Merits and Demerits of S.R.S. and Stratified Sampling.
  4.1.3 Simple examples on Stratified Sampling.

4.2 Time Series: (Analysis and Forecasting)
  4.2.1 Meaning and components of Time Series
  4.2.2 Methods of determination of trend by
    (I) Method of Moving Averages.
    (II) Method of Progressive Averages. (III) Method of Least Squares (St.Line only)
  4.2.3 Numerical examples on 4.2.2.

Note: Use of Nonprogrammable calculator is allowed.
Reference Books:
1) Mathematical Statistics by H.C. Saxena and J. N. Kapur
2) Business Statistics by G. V. Kumbhojkar
3) Fundamentals of Statistics by S. C. Gupta
4) Business Statistics by S. S. Desai
5) Business Statistics - SIM-Shivaji University, Kolhapur