Lecture Plan – Academic Year 2019-20

Semester: IV

Course: SYIT Class: Subject: Computer Oriented Statistical Techniques

(Lecturer: Mr. Yogesh D. Patil)

Unit No.	Topic	Plan	Teaching Methodology with Time Frame	Learning Outcome
1.	**The Mean, Median, Mode, and Other Measures of Central Tendency**	**Learning Objective** To introduce the concept Protection of The Mean, Median, Mode, and Other Measures of Central Tendency	**Contact Sessions** 12 Lectures **Interactive modes** PPT, Computer and BB, Extra problem solving **Date** (25/11/2019 14/12/2019)	By the end of this unit, students will be learn to calculate The Mean, Median, Mode, and Other Measures of Central Tendency and their properties.
2.	**Moments, Skewness, and Kurtosis**	To explain Relations Between Moments , Computation of Moments for Grouped Data, Charlie's Check and Sheppard's Corrections, Moments in Dimensionless Form, Skewness, Kurtosis, Population Moments, Skewness, and Kurtosis, Software Computation of Skewness and Kurtosis. Elementary Probability Theory: Definitions of Probability, Conditional Probability; Independent and Dependent Events, Mutually Exclusive Events, Probability Distributions, Mathematical Expectation,Relation Between Population, Sample Mean, and 12 30 Variance, Combinatorial Analysis, Combinations, Stirling's Approximation to n!, Relation of Probability to Point Set Theory, Euler or Venn Diagrams and Probability. Elementary Sampling Theory : Sampling Theory, Random Samples and Random Numbers, Sampling With and Without Replacement, Sampling Distributions, Sampling Distribution of Means, Sampling Distribution of Proportions, Sampling Distributions of Diff erences and Sums	**Contact Sessions** 12 Lectures **Interactive modes** PPT, Computer and BB, Extra problem solving **Date** (02/01/2020 16/01/2020)	By the end of this unit, students will be able to describe the various methods to find Moments Skewness and Kurtosis

3.	**Statistical Estimation Theory**	To understand the concepts of Estimation of Parameters, Unbiased Estimates, Efficient Estimates, Point Estimates and Interval Estimates; Their Reliability, Confidence-Interval Estimates of Population Parameters, Probable Error. Statistical Decision Theory: Statistical Decisions, Statistical Hypotheses, Tests of Hypotheses and Significance, or Decision Rules, Type I and Type II Errors, Level of Significance, Tests Involving Normal Distributions, Two-Tailed and One-Tailed Tests, Special Tests, Operating-Characteristic Curves; the Power of a Test, pValues for Hypotheses Tests, Control Charts, Tests Involving Sample Differences	**Contact Sessions** 12 Lectures **Interactive modes** PPT, Computer and BB, Extra problem solving **Date** (17/01/2020 28/01/2020)	By the end of this unit, students will be able to calculate all statistical estimates and solve the mathematical problems
4.	**Small Sampling Theory**	To learn to make sampling and to acknowledged about Small Samples, Student's t Distribution, Confidence Intervals, Tests of Hypotheses and Significance, The ChiSquare Distribution, Confidence Intervals for Sigma , Degrees of Freedom, The F Distribution. The Chi-Square Test: Observed and Theoretical Frequencies, Definition of chi-square, Significance Tests, The Chi-Square Test for Goodness of Fit, Contingency Tables, Yates' Correction for Continuity, Simple Formulas for Computing chi-square, Coefficient of Contingency, Correlation of Attributes, Additive Property of chisquare.	**Contact Sessions** 12 Lectures **Interactive modes** PPT, Computer and BB, Extra problem solving **Date** (29/01/2020 11/02/2020)	By the end of this unit, students will be understand how to make Samplings from given data and they will learn to make their own test on data and to create hypothesis and test by appling Chi-Square.
5.	**Curve Fitting and the Method of Least Squares**	To study about Relationship Between Variables, Curve Fitting, Equations of Approximating Curves, Freehand Method of Curve Fitting, The Straight Line, The Method of Least Squares, The Least-Squares Line, Nonlinear Relationships, The Least-	**Contact Sessions** 12 Lectures **Interactive modes** PPT, Computer and BB, Extra problem solving **Date** (12/02/2020 02/03/2020)	By the end of this unit, students will be able to do all calculation on data by drawing graphs.

		Squares Parabola, Regression, Applications to Time Series		
6.	**All unit**	Revision of all unit including practical	**Contact Sessions** 8 Lectures **Interactive modes** BB and Computer, Unit wise Question bank solving. **Date** (03/02/2020 25/03/2020)	By the end of this course, students will be able to solve statistical problems by using computers.