

PREPARATION OF LESSON PLAN

Subject Name: Statistical Tools for Data Analysis

Lecture hours: 45

Objective: To make the students excel in research analysis through the SPSS package.

Sl. No	UNIT & OBJECTIVES	No. of Lecture Hours	Methodology/Instruc tional techniques	Evaluation/ learning confirmation
<i>Module I</i>				
<i>Basic methods in data</i>				
1.	Basic on variable, data reading and editing	2	Lecture and illustration	Discussion and Practical
2.	Data interpretation	2	Lecture and illustration	Discussion and Practical
3.	Sampling size selection and sampling error	2	Lecture and illustration	Discussion and Practical
4.	Binomial , Poisson and normal distributions	2	Lecture and illustration	Discussion and Practical
Assessment :Theoretical test on concepts				
<i>Module II</i>				
<i>Graphical methods for data interpretation</i>				
5.	Histogram, box and whisker plots	2	Lecture and illustration	Discussion and Practical
6.	Scatter plots, run/time charts ,stem and leaf diagram	2	Lecture and illustration	Discussion and Practical
7.	Probability plots, frequency & cumulative frequency curves	2	Lecture and illustration	Discussion and Practical
Assessment : Practically solved data in SPSS software				

Module III	<i>Descriptive statistics and Analytical</i>			
8.	Measure of central tendency : calculation of Mean, Media and mode	2	Lecture and illustration	Discussion and Practical
9.	Variance ,standard deviation , Range, Sample mean, variance, S.D , Coefficient of variation	2	Lecture and illustration	Discussion and Practical
Assessment : Practically solved data in SPSS software				
Module IV	<i>Hypothesis testing I- Parametric</i>			
10.	Basics : Parametric testing	2	Lecture and illustration	Discussion and Practical
11.	Tests for mean and variance, z test, student's test	2	Lecture and illustration	Discussion and Practical
12.	Paired –comparison test : test the difference between two means (equal and unequal known variances)	2	Lecture and illustration	Discussion and Practical
13.	Test the difference between two means (equal and unequal unknown variances)	3	Lecture and illustration	Discussion and Practical
14.	Chi square test and test for proportions	3	Lecture and illustration	Discussion and Practical
15.	F test	2	Lecture and illustration	Discussion and Practical
Assessment : Practically solved data in SPSS software				
Module v	<i>Non Parametric hypothesis testing</i>			
16.	Mood's Median test , Levene's test, Wilcoxon signed test	3	Lecture and illustration	Discussion and Practical
17.	Kruskal Wallis one way test Anova test	3	Lecture and illustration	Discussion and Practical
18.	Whitney U test, Spearman Rank correlation	3	Lecture and	Discussion and

	coefficient test		illustration	Practical
19.	Anova	2	Lecture and illustration	Discussion and Practical
20.	Simple linear Regression	2	Lecture and illustration	Discussion and Practical
Assessment : Practically solved data in SPSS software				
Final Assessment (Grades): Solving the data (collected from different data source or database) respective to their specialization areas like Finance , Human Resource, marketing, Information Technology and Interdisciplinary topics is Some questions to answer based on the research design and methods are using for their analysis.				

References:s

- i. SPSS for Beginners by Vijay Gupta ,Published by VJBooks Inc.
- ii. Parametric and Nonparametric “Statistical procedures”, Third Edition by David J. Sheskin
- iii. Statistics Principles and Methods, Sixth Edition by Richard A. Johnson *and* Gouri K. Bhattacharyya , John Wiley & Sons, Inc.
- iv. Discovering statistics using SPSS , second edition by Andy Field , Sage publication