



INSPIRING EXCELLENCE

Integral University, Lucknow

Department of Mathematics and Statistics

Offers a Value Added Course on

Statistical Data Analysis Using SPSS (MTV01)

(w.e.f. July 20, 2021)

Course Duration: Thirty Hours

Course Platform: ILI-LMS

Link for Registration: <https://forms.gle/HZPiHTi6kZyoS8Dc9>

About the Course

The field of Statistics is the science of learning from data. Statistical knowledge helps to use the proper methods to collect the data, employ the correct analyses, and effectively present the results. Statistics is a crucial process behind how we make discoveries in science, make decisions based on data, and make predictions. In recent years due to the rise of computational advances the statistical analysis of data for research purposes has been made possible with the use of different software programs. One of these software packages is SPSS that assists in analyzing and interpreting large amounts of data and present the results in a simplified manner.

Department of Mathematics & Statistics, Integral University, Lucknow has specially designed a certificate course in "**Statistical Data Analysis using SPSS**" for those students who are pursuing their Graduate, Post graduate & Research in Science, Social sciences, Medical sciences, Biological sciences, and Management sciences etc. In this course the candidates shall undergo hands on training in SPSS software. The course is of 30 hours duration and course will be taught on computer using SPSS software. After successful completion, the students will be given a certificate.

Course Objective

The main objective of the course is to find the descriptive solution of the statistical data using SPSS software. As we know that the students are facing problem specially who are working on data analysis for their project and research and are interested in how to manage and analyze the data after collection of survey questionnaire. This Course will focus on how to analyze survey questionnaire using SPSS software. Also students should make aware to chose appropriate statistical techniques and interpret results.

Eligibility

Graduate, Post graduate & Research students of any disciplines of Integral University

Modules

Module-1 Introduction to Data & SPSS

L T P: 5 1 0

- ❖ Types & Sources of Data
- ❖ Scale of Measurements
- ❖ Methods of data collection
- ❖ Starting SPSS
- ❖ Working with data file
- ❖ SPSS windows, Menus & Dialogue boxes
- ❖ Creating data file and entering data
- ❖ Defining the variables
- ❖ Modifying data file & import file
- ❖ **VAC Quiz1**

Module-2 Classification & Presentation of Data

L T P: 5 1 0

- ❖ Geographical classification
- ❖ Chronological classification
- ❖ Qualitative classification
- ❖ Quantitative classification
- ❖ Bar diagram
- ❖ Histogram
- ❖ Pie chart
- ❖ Box plot
- ❖ **VAC Quiz2**

Module-3 Descriptive Statistics

L T P: 5 1 0

- ❖ Central Tendency and its measures: Mean, Median, Mode & Partition values
- ❖ Dispersion and its measures: Range, Quartiles deviation, Standard deviation & Variance
- ❖ Measures of Skewness
- ❖ Measures of Kurtosis
- ❖ **VAC Quiz 3**

Module-4 Bivariate Data Analysis

L T P: 5 1 0

- ❖ Definition and types of Correlation & Scatter diagram
- ❖ Karl Pearson's Coefficient of correlation
- ❖ Spearman's Coefficient of Rank correlation
- ❖ Regression equations and regression coefficients
- ❖ Multiple & Partial regression coefficients
- ❖ Coefficient of determination
- ❖ **VAC Quiz 4**

Module-5 Test of Significance

L T P: 5 1 0

- ❖ Population and Sample, Hypothesis, Null & Alternative hypothesis,
- ❖ Type I & Type II errors, Level of significance, Confidence level and Degrees of freedom
- ❖ Normality test
- ❖ Testing of hypothesis based on t test,
- ❖ Analysis of variance (ANOVA)
- ❖ Reliability test (Cronbach's alpha)
- ❖ Non parametric test
- ❖ **VAC Quiz 5**

Note: The course includes a total of five quizzes and two assignments based on all five modules. Participants will be required to score at least 50% marks in both quizzes and assignments, separately.

Course Outcomes

At the end of the course, the student will be able to

- ❖ Understand the data and scales of their measurement
- ❖ Understand the graphical representation of various types of data
- ❖ Compute the descriptive values
- ❖ Establish the relationship between bivariate data
- ❖ Apply the large and small sample tests for research problems
- ❖ Apply the non-parametric tests for sample data

Resource persons & Course Coordinators:

Dr. Quazzafi Rabbani
Associate Professor

Dr. Abdul Quddoos
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For further query, please write to:

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