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Tritonna Edu Learning

Hands-on with SPSS

Practical Online Course Brochure

Course Fee: ₹ 5,000
Delivery Mode: Online
Schedule: Flexible Timing
Level: Beginner to Intermediate

Course Overview

Hands-on with SPSS is a practical, beginner-friendly online course designed to help learners confidently manage, analyse, and interpret data using IBM SPSS Statistics. The course focuses on real-world application rather than theory alone, with guided demonstrations, practical exercises, and analysis-based assignments.

Participants will learn how to enter and import data, prepare datasets, perform statistical tests, interpret output, and apply advanced techniques such as regression, factor analysis, and cluster analysis.

Course Details

Course Component	Details
Course Name	Hands-on with SPSS

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Institution	Tritonna Edu Learning
Delivery Mode	Online
Schedule	Flexible timing
Course Fee	₹ 5,000
Level	Beginner to intermediate
Learning Approach	Demonstration, guided practice, exercises, and interpretation
Recommended Software	IBM SPSS Statistics
Assessment	Practical exercises and final mini-project

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Who Should Enrol?

This course is suitable for:

- Students and research scholars
- Faculty members and teachers
- Social science and management researchers
- Psychology, education, commerce, and public health learners
- Survey researchers and data analysts
- Dissertation and project students
- Professionals who want to use SPSS for research and reporting

No advanced statistical programming background is required.

Learning Outcomes

By the end of the course, learners will be able to:

1. Understand the SPSS interface and workflow.

2. Create a dataset and enter data accurately.
3. Import data from Excel and other common file formats.
4. Define variables, value labels, missing values, and measurement levels.
5. Clean and prepare data for analysis.
6. Use SPSS transformation functions.
7. Conduct and interpret normality tests.
8. Perform independent-samples and paired-samples t-tests.
9. Conduct linear regression analysis.
10. Perform exploratory factor analysis.
11. Conduct cluster analysis.
12. Read SPSS output and present findings in a clear research format.
13. Select appropriate statistical techniques for different research questions.
14. Complete a practical data-analysis project using SPSS.

Course Curriculum

Module 1: Introduction to SPSS and Research Data

Key Topics

- What is SPSS?
- Uses of SPSS in academic and professional research
- Types of data: nominal, ordinal, and scale
- Variables, cases, observations, and datasets
- Understanding the SPSS interface
- Data View and Variable View
- Creating a new SPSS file
- Saving, opening, and organizing SPSS files

Practical Activity

Create a basic dataset containing demographic and survey variables.

Module 2: Data Entry and Variable Setup

Key Topics

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- Creating variables in Variable View
- Naming variables correctly
- Adding variable labels
- Assigning value labels
- Setting measurement levels
- Defining missing values
- Coding categorical responses
- Entering survey and experimental data
- Avoiding common data-entry errors
- Checking the accuracy of entered data

Practical Activity

Enter a small survey dataset and correctly define variable properties.

Module 3: Importing Data into SPSS

Key Topics

- Importing data from Microsoft Excel
- Importing CSV files
- Importing text files
- Understanding the import wizard
- Managing column headings
- Identifying incorrect data types
- Checking variable names after import
- Handling blank cells and missing data
- Saving imported data as an SPSS file

Practical Activity

Import a spreadsheet into SPSS and prepare it for analysis.

Module 4: Data Cleaning and Preparation

Key Topics

- Identifying missing values

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- Detecting invalid codes
- Finding duplicate or inconsistent entries
- Reviewing frequency distributions
- Identifying outliers
- Data screening and quality checks
- Correcting data-entry errors
- Using descriptive statistics for preliminary inspection

Practical Activity

Clean a deliberately disorganized dataset and produce a data-quality checklist.

Module 5: Transform Functions in SPSS

Key Topics

- Compute Variable
- Recode into Same Variables
- Recode into Different Variables
- Creating total and average scores
- Reverse coding questionnaire items
- Creating age groups and other categories
- Using conditional transformations
- Applying mathematical and statistical functions
- Creating dummy variables
- Understanding transformation syntax

Practical Activity

Calculate a composite scale score, reverse-code selected items, and create grouped variables.

Module 6: Descriptive Statistics and Data Exploration

Key Topics

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- Frequencies
- Percentages
- Mean, median, and mode
- Range and standard deviation
- Minimum and maximum values
- Histograms and bar charts
- Boxplots
- Exploring relationships between variables
- Choosing appropriate descriptive statistics

Practical Activity

Prepare a descriptive summary of a sample dataset and interpret the results.

Module 7: Normality Testing

Key Topics

- Meaning and importance of normality
- Why normality matters in statistical analysis
- Visual methods: histogram, Q-Q plot, and boxplot
- Numerical methods: Shapiro–Wilk test, Kolmogorov–Smirnov test, skewness, and kurtosis
- Interpreting significance values
- Practical versus statistical significance
- What to do when data are not normally distributed
- Choosing parametric and non-parametric alternatives

Practical Activity

Assess the normality of selected variables using graphical and statistical methods.

Module 8: t-Test Analysis

Key Topics

- Purpose of a t-test
- One-sample t-test

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- Independent-samples t-test
- Paired-samples t-test
- Selecting the correct t-test
- Checking assumptions
- Levene’s test for equality of variances
- Understanding the t-value and significance value
- Confidence intervals
- Effect size and practical interpretation
- Reporting t-test findings

Practical Activities

Complete:

1. One-sample t-test
2. Independent-samples t-test
3. Paired-samples t-test

Module 9: Regression Analysis

Key Topics

- Meaning and purpose of regression
- Correlation versus regression
- Simple linear regression
- Multiple linear regression
- Dependent and independent variables
- Entering predictors into SPSS
- Model Summary: R, R Square, and Adjusted R Square
- ANOVA table and model significance
- Regression coefficients
- Unstandardized and standardized coefficients
- Significance values and confidence intervals
- Checking regression assumptions
- Multicollinearity
- Residual analysis
- Interpreting and reporting regression results

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Practical Activity

Develop a regression model to predict an outcome using one or more predictor variables.

Module 10: Factor Analysis

Key Topics

- Meaning and purpose of factor analysis
- Exploratory factor analysis
- Data suitability for factor analysis
- Kaiser–Meyer–Olkin test
- Bartlett’s test of sphericity
- Communalities
- Eigenvalues
- Total variance explained
- Scree plot
- Factor extraction methods
- Rotation methods: Varimax rotation and Oblimin rotation
- Factor loadings
- Naming and interpreting factors
- Reliability considerations
- Reporting factor-analysis findings

Practical Activity

Analyse a questionnaire dataset and identify underlying dimensions or factors.

Module 11: Cluster Analysis

Key Topics

- Meaning and purpose of cluster analysis
- Applications of segmentation
- Hierarchical cluster analysis
- K-means cluster analysis

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- Selecting variables for clustering
- Standardizing variables
- Agglomeration schedule
- Dendrogram interpretation
- Choosing the number of clusters
- Cluster centres
- Interpreting and naming clusters
- Comparing cluster profiles
- Practical limitations of cluster analysis

Practical Activity

Segment cases into meaningful groups based on selected characteristics.

Module 12: Interpreting and Presenting SPSS Results

Key Topics

- Reading SPSS output tables
- Selecting relevant output
- Avoiding unnecessary output
- Creating clear tables and charts
- Writing statistical interpretations
- Reporting significance values
- Reporting effect sizes where appropriate
- Presenting findings in dissertations and research reports
- Common interpretation mistakes
- Basic APA-style reporting principles
- Translating statistical results into practical conclusions

Practical Activity

Prepare a short results section based on SPSS analysis.

Final Practical Project

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Each learner will complete a mini-project involving:

1. Importing or entering a dataset
2. Defining variables
3. Cleaning and transforming data
4. Conducting descriptive analysis
5. Performing a normality test
6. Applying at least one t-test
7. Running a regression analysis
8. Completing either factor analysis or cluster analysis
9. Interpreting the output
10. Preparing a concise findings report

Suggested Course Format

Flexible Online Learning Model

The course can be delivered through a flexible online learning structure that may include:

- Recorded video lessons
- Downloadable notes
- Practice datasets
- Step-by-step SPSS demonstrations
- Practical assignments
- Online doubt-clearing sessions
- Flexible submission timelines
- Final mini-project guidance

Key Information

Online | Flexible Timing | ₹ 5,000

Ideal for students, researchers, faculty members, and professionals.

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