

Hands-on Training in Data Management, Statistical Data Analysis Using SPSS, and Basic Research Methodology

10-12 Magh 2082 (24-26 January 2026)

Organized by Central Department of General Science, FWU

Facilitated by Central Department of Computer Science and Information Technology

Supported by UGC, Nepal (Equity Grant)

Venue: CSIT, Seminar Hall, Mahendranagar, Kanchanpur

1. Course Overview

This university-level course develops advanced skills in **data management, statistical analysis, research methodology, and report writing using SPSS** in concluding with **hands-on drill** to consolidate the day's learning and apply skills to real datasets.

2. Course Objectives

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

- Understand fundamental concepts of research methodology
- Manage and structure datasets for research with precision
- Apply descriptive, inferential, and non-parametric statistical tests using SPSS
- Interpret outputs accurately and present them in a scholarly format
- Draft publication-ready research reports with APA-compliant tables and referencing
- Reinforce learning through **daily practical drills**

3. Session-wise Structure and Contents

Day 1(2082/10/10): Data Management, SPSS, and Basic Research Methodology

Session	Duration	Title	Detailed Skills	Resource Person
	9:00 AM-9:30 AM		Registration and Tea	Department Staff
	9:30 AM-10:00 AM	Chair by HOD, chief guest Dean FOST, FWU and welcome speech by Krishna Prasad Pant, Remarks by chief guest and closing by HOD		
1	10:00 AM-11:30 AM	Using Technology in Academic Writing	Using Technology for Academic Research, Citation and Reference Management Tools, Technology-Based Writing, Editing, and Plagiarism Control	Dr. Yagya Raj Pandey
11.30 PM- 12.30 PM Lunch				
2	12:30 PM-2:00 PM	Research Data Concepts & SPSS Overview, Dataset Design & Variable Specification	Data lifecycle, variable types, measurement scales, SPSS interface, menu navigation Create and define variables, assign labels, code qualitative and quantitative data, document metadata	Dr. Madan Singh Deupa
3	2:00 PM-3:30 PM	Research Methodology	Research types, research design, objectives, variables, literature review, ethical considerations	Dr. Dev Raj Joshi
4	3:30 PM-5:00 PM	Data Screening & Quality Assurance	Data entry, Identify and handle missing data, detect outliers, perform data validation, recode and transform variables for analysis (Descriptive Statistics)	Dr. Megha Raj Banjara
5	5:00 PM-6:30 PM	Daily Drill: Data Entry & recode and transform	Enter sample dataset, analyses frequency, explore and crosstab	Facilitated by Mr. Madan Singh Bohara/Krishna Prasad Pant

Day 2 (2082/10/11): Statistical Analysis Using SPSS, Research Methodology and Report Writing

Session	Duration	Title	Detailed Skills	Resource Person
9:00 AM- 9:30 Am Tea and breakfast				
6	9:30 AM-11:00 AM	Research Methodology	Research questions, hypothesis formulation, Sampling techniques	Dr. Dev Raj Joshi
7	11:00 AM-12:30 PM	Descriptive Statistics & Assumption Testing	Compute mean, median, mode, SD; check normality, skewness, kurtosis, assumptions for parametric tests	Dr. Megha Raj Banjara
12:30 -1:15 Lunch				

8	1:15 PM-2:45 PM	Research Reporting	Structuring a research report (IMRD and Conclusion), Citation and referencing, Communicating results to scholarly and non-scholarly audience	Dr. Dev Raj Joshi
9	2:45 PM-4:15 PM	Hypothesis Testing & Inferential Analysis	Formulate null/alternative hypotheses, compute p-value, understand effect size and statistical power, parametric test (t-tests & ANOVA)	Dr. Megha Raj Banjara
10	4.15PM-5.45 PM	Daily Drill Data Analysis	Hands- on Drill in parametric testing	Facilitated by Mr. Madan Singh Bohara/Yagya Raj Joshi

Day 3 (2082/10/12): Advanced Analysis, Report Writing & Research Methodology

Session	Duration	Title	Detailed Skills	Resource person
11	9:30 AM-11:00 AM	Non-Parametric Tests	Apply Chi-square, Mann–Whitney U, Wilcoxon tests; decide when to use them, interpret SPSS results	Dr. Megha Raj Banjara
12	11:00 AM-12:30 PM	Interpreting & Presenting SPSS Output	Prepare APA-compliant tables, graph and figures, interpret statistical results, scholarly presentation of findings	Dr. Megha Raj Banjara
12:30 -1:15 Lunch				
13	1:15 PM-2:45PM	Daily Drill: Report Writing & Methodology	Hands-on drill prepares of table, graph, figure on your finding	Facilitated by Mr. Madan Singh Bohara/ Shailendra Chand
14	2:45 PM onwards	Closing session	Feedback by participant, certificate distribution and closing	Facilitated by Madan Singh Bohara

4. Pedagogical Approach

- Step-by-step demonstrations and guided exercises
- **Drill sessions** for skill consolidation
- Integration of **basic research methodology with data analysis and reporting**
- Use of real or simulated datasets for practical application
- Continuous feedback and peer discussion

5. Expected Learning Outcomes

Participants will be able to:

- Understand and apply basic research methodology principles
- Manage, clean, and validate datasets professionally
- Perform descriptive, inferential, and non-parametric statistical analyses in SPSS
- Interpret and present results in clear, journal-quality tables and figures
- Draft coherent, APA-compliant research reports
- Demonstrate mastery through **daily practical drills**

6. Assessment and Certification

- Continuous evaluation during drills and exercises
- Submission of mini research report incorporating methodology, results, and discussion
- Certificate of Participation awarded for meeting attendance and practical completion requirements