

Course Title:	Statistical Computing (SPSS, Excel)
Course Code:	STAT-205
Semester:	IV
Credit Hours:	3 Credit Hours
Pre-requisites:	N/A

## Learning Outcomes

This course aims to provide students with:

1. The background knowledge of data analysis including issues related to data entry, editing and manipulating data files.
2. The knowledge of different ways in which data can be explored (descriptive statistics, cross-tabulations, bar/pie charts, plots etc.)
3. The hands-on experience of how to apply the tools of inferential statistics including Regression, Correlation, Parametric and Non-Parametric Tests.

## Course Outline

### Unit 1

#### 1.1 Introduction to Computer and Windows

Starting and exiting, Different windows, Data Entry, Defining a variable, Entering data, Saving data file, Defining Value Labels, Computing frequencies, Computing the new variables, Selection of cases, Defining Date Variable, Defining weights variable, Recoding and categorizing the existing variables, Categorizing the variables, Ranking the cases, Defining the missing values, Replacing the missing values, Creating a time series, Exploring the variable.

### Unit 2

#### 2.1 Graphs and Tables

Finding descriptive statistics, Editing Output., Cross tabulation and measures of association, entering a Cross-tabulated data, Graphs for variables and cross-tabulated variables, Merging and Splitting files, Bar Chart, Pie Chart, Histogram, and Histogram, Box plot, P-P plot, Q-Q plot.

#### 2.2 Parametric Test

One sample t-test, Independent Samples t-test, Paired samples t-test, Parametric statistical inference (one sample, two samples, more than two sample).

#### 2.3 Regression Analysis

Scatter Diagram, Correlation, Simple and Multiple regressions, Non-Parametric Tests, Computing probability distribution and distribution functions.

- **Teaching-learning Strategies:**

Class Lecture method, which includes seminars, discussions, assignments and projects. (Audio-visual tools are used where necessary)

- **Assignments-Types and Number with calendar:**

According to the choice of respective teacher.

- **Assessment and Examinations:**

According to the University's Semester Rules.

Sr. No.	Elements	Weightage	Details
1	Midterm Assessment	35%	It takes place at the mid-point of the semester.
2	Formative Assessment	25%	It is continuous assessment. It includes: Classroom participation, attendance, assignments, and presentations, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

### **Text Book**

1. Brace, N., Kemp, R., & Snelgar, R. (2012). *SPSS for Psychologists* (5<sup>th</sup> ed.). Palgrave and Macmillan.

### **Suggested Readings**

2. Ho, R. (2013). *Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS* (2<sup>nd</sup> ed.). Chapman and Hall/CRC.
3. Kirkpatrick, L.A., & Feeney, B.C. (2014). *A Simple Guide to SPSS for Windows* (14<sup>th</sup> ed.). Wadsworth: Thompson Learning.