



**Darrang College
(Autonomous),
Tezpur-784001**

Syllabus for Certificate Course

**Course Name: Statistical Data Analysis Using
Software Packages
SPSS & R**

Department of Statistics
Darrang College (Autonomous), Tezpur

Certificate Course 1 on
Statistical Data Analysis Using Software Packages
SPSS & R

Total Lectures: 30 Hours (Theory+Lab)

➤ **Objectives**

- To explore and understand how to use SPSS and R for handling data.
- To provide user with powerful and flexible tools viz. SPSS and R for Statistical computing, graphical representation and interpretation of data.
- To provide the basic knowledge about statistical data analysis and modeling.

Unit 1: Graphical Representation:

Learn how to load data, plot a graph viz. histograms (equal class intervals and unequal class intervals), box plot, stem-leaf plot, frequency polygon, pie chart, ogives with graphical summaries of data

Unit 2: Report Generation:

Generate automated reports giving detailed descriptive statistics, correlation and lines of regression.

Unit 3: Generation of Random Numbers and Fitting Curves:

Random number generation and sampling procedures. Fitting of polynomials and exponential curves. Application Problems based on fitting of suitable distribution, Normal probability plot.

Unit 4: Statistical Analysis:

Simple analysis and create and manage statistical analysis projects, import data, code editing, Basics of statistical inference in order to understand hypothesis testing and compute p-values and confidence intervals.

SUGGESTED READING:

1. Moore, D.S., McCabe, G.P. and Craig, B.A. (2014): Introduction to the Practice of Statistics, W.H. Freeman

2. Gardener M. (2012) Beginning R: The Statistical Programming Language, Wiley Publications.
3. Braun W. J., Murdoch D. J. (2007): A First Course in Statistical Programming with R. Cambridge University Press. New York
4. Sudha G. P., Sharad D. G. and Shailaja R. D. (2015). Statistics Using R. 2nd Edition. Narosa Publishing House.

Certificate Course 2 on Statistical Data Analysis Using MS Excel

Total Lectures: 30 Hours (Theory+Lab)

Course Objectives: This course will review and expand upon core topics in probability and statistics, particularly by initiating the beneficiaries of the course to at least one of the software packages viz., Microsoft Excel for statistical computing.

Learning Outcomes: At the end of this course, the students will be able to solve real life problems by applying the statistical tools and techniques using the software skills imparted through this course.

Unit	Content
I	Graphical Representation: Introduction to MS Excel, Basics of statistical tools, Preparation of frequency table. Learn how to load data, plot a graph viz. histograms (equal class intervals and unequal class intervals), box plot, stem-leaf, frequency polygon, pie chart, ogives with graphical summaries of data
II	Report Generation: Generate automated reports giving detailed descriptive statistics, correlation and lines of regression.

III	Statistical Analysis: Simple analysis of different measure of central tendency and dispersion, create and manage statistical analysis projects, import data, Fitting of polynomials and exponential curves.
IV	Practical: Based on Unit I, II and III

SUGGESTED READING:

1. Moore, D.S. and McCabe, G.P. and Craig, B.A. (2014): Introduction to the Practice of Statistics, W.H. Freeman