

P.T. Sarvajanik College of Science, Surat.

(Affiliated to Veer Narmad South Gujarat University, Surat)

**Syllabus
for
Certificate Course in Data Analysis Through Softwares**

2 credit course

Total Contact Hours : 30



Certificate Course in Data Analysis Through Softwares

2 Credit Course

Course Outcomes:

After Successful completion of the course a students will be:

1. Able to understand type and nature of data
2. Able to identify appropriate data analytical technique for data set
3. Able to run data analysis in software
4. Able to interpret output with reference to problem under study

Pre-requisites:

1. Elementary Statistics of secondary level
2. Enthusiasm to learn by doing analysis yourself

Eligibility:

First Year B.Sc. Completed

Unit 1:

Data Types and its Characteristics: 5 hours

Different types of variables, Scales of measurements, different characteristics of a variable, preparing data entry sheet, data entry through primary and secondary sources, converting data files in different formats.

Unit 2: 5 hours

Recoding of variable, missing value analysis, data transformation, selection of specific cases, computation of variables based on mathematical operations.

Unit 3: 10 hours

Frequency table and different types of charts and graphs, identification of appropriate measure of central tendency such as mean, median or mode based on nature of information, calculation of different measures of central tendency, obtaining different measures of variation such as range, standard deviation and quartiles.



Unit 4:

10 hours

Testing of Normality for given data set, different types of correlation, scatter diagram, calculation of different correlation coefficient, meaning and types of regression analysis, obtaining regression line and interpretation of different components of regression analysis.

Reference books

1. M.L.Humphrey (2017) Excel for beginners
2. Wayne Winston (2021), Microsoft Excel Data analysis and Business Modelling
3. Andy Field (2017) Discovering Statistics using IBM SPSS Statistics
4. Jesus Salcedo and Keith McCormick (2020) SPSS for Dummies

Suggested Teaching Methodology

For all units required theoretical knowledge of respective methods will be imparted in the class. Followed by hands on training of data analysis on different softwares.

Examination

The candidates shall be examined practically. They shall be required to make a project that uses different data analytical techniques.

The project must be submitted after 5 days of practical examination.

The candidates will have to appear for viva voce while submitting the project.

The examiner will mark the candidates based on following marking scheme:

Attendance	10%
Performance during hands on sessions	20%
Practical Examination	50%
Viva Voce	20%
Total	100%

Total marks of the examination shall be 100.

In order to successfully pass the examination, a candidate must score minimum 40% of the total marks.

