



Syllabus

For B.A 1st Semester Course in Statistics
(June 2020 onwards)

Contents:

- Theory Syllabus for Course:
 - ASTA0101 – Descriptive Statistics (A).

- Practical Course Syllabus for: ASTA01PR
- Evaluation and Assessment guidelines.

F.Y.B.A_Statistics

Course : ASTA0101

Title: **Descriptive Statistics (A)**

Course Objectives:

1. To introduce the technique of data collection and its presentation.
2. To emphasize the need for numerical summary measures for data analysis.

Number of lectures: 45

Course Outcomes:

On completion of the course the learner should :

1. Be aware of various techniques of data collection and presentation.
2. Possess knowledge of the various summary measures of location (averages) used for data analysis and the basis for their selection.
3. Acquire the skill to select appropriate methods to present data
4. Be able to select and calculate appropriate averages to represent data sets.
5. Hold the knowledge to select and calculate appropriate measures of dispersion for data sets.
6. Gain the knowledge about the use of statistical tools to carry out elementary categorical data analysis.
7. Acquire information about various Statistical organizations in India and their functions

Unit – 1

Data: Types , Collection & Management, Presentation & Visualization. (15 L)

Types of data from a population :

Qualitative and Quantitative data; Geographical, Time series data; Discrete and Continuous data, Panel and Cross Section data.

Different types of scales: Nominal, Ordinal, Ratio and Interval.

Illustrations of Likert scale.

Collection of Data :

Concepts of statistical population and sample.

Primary data- designing a questionnaire/schedule, distinction between them.

Concept of validation of questionnaire.

Problems faced when collecting data through the questionnaire.

Secondary data– its major sources including some government publications.

Elementary Categorical Data Analysis

Preparation of tables with two or three factors (variable /attributes) of classification.

Requisites of a good table. Independence and Association for 2 attributes in a 2 x 2 table using Yule's coefficient of colligation and coefficient of association. Relationship between the two coefficients.

Univariate: Frequency distribution of discrete and continuous variables. Cumulative frequency distribution.

Graphical representation of frequency distribution by Histogram, Frequency polygon, Frequency curve and Ogives.

Data Presentation and Visualization using Bar diagrams and Pie chart.

Exploratory data analysis: Stem and Leaf diagram, Dot plot.

Bivariate : Frequency distribution, Marginal and Conditional frequency distributions.

Unit 2

Measures of Central Tendency or Location. (15 L)

Arithmetic mean and its properties (simple and weighted), Combined mean. Geometric mean, trimmed mean Quantiles (Median, Quartiles, Deciles, Percentiles.) Mode. (Grouping Method not expected). Empirical relationship between mean, median and mode.

Merits, Demerits and Uses of Mean, Median, Mode, G.M.

Requisites of a good average.

Choice of scale of measurement for each measure of central tendency.

Unit 3

Measures of Dispersion, Skewness & Kurtosis (15 L)

Range, Interquartile Range, Quartile Deviation, Mean Absolute Deviation, Standard Deviation (Variance) and their relative measures. Combined variance. Raw and Central moments up to fourth order and the relationship between them (without proof). Measures of Skewness and Kurtosis. Box-Whisker Plot.

List Of Recommended Reference Books

1. Goon A.M., Gupta M.K., Dasgupta B. Fundamentals of Statistics, Volume I, The World Press Private Limited, Calcutta. Fifth edition.
2. Kothari, C.R.: Research Methodology, Methods and Techniques, Wiley Eastern Limited. First Edition.
3. Shah R.J.:Descriptive Statistics, Seth Publications. Eighth edition.
4. Spiegel, M.R.: Theory and Problems of Statistics, Schaum's Publishing Series. Tata McGraw-Hill. First edition.
5. Welling, Khandeparkar, Pawar, Naralkar : Descriptive Statistics : Manan Prakashan
6. S.P. Gupta : Statistical Methods, Sultan Chand & Sons. First edition.
7. Richard. I. Levin, David .S. Rubin: Statistics for Management . Fifth edition
8. Prem . S. Mann (2007) . Introductory Statistics (6th edition) John Wiley & Sons.
9. Allan Bluman (2009) Introductory Statistics. A step by step approach (7th edition). McGraw-Hill
10. Malhotra Naresh K: Marketing Research, Pearson Education Limited, Fifth edition.

Topics for Practicals:

1. Collection of Data from Secondary source (including Internet sites) / Primary source
2. Tabulation of data (Quantitative and Categorical)
3. Classification of data.
4. Graphs and Diagrams
5. Measures of Central Tendency.
6. Measures of Dispersion.
7. Skewness and Kurtosis.

Evaluation (Theory):

Total marks per course - 100.

CIA- 40 marks

CIA 1: Written test -20 marks

CIA 2: Written test -20 marks

End Semester Examination – 60 marks

One question from each unit for 20 marks, with internal choice.

Total marks per question with choice – 25 to 30

Evaluation of ASTA01PR

Total marks - 50.

Group Project – 15 marks

Journal – 5 marks.

End Semester Practical Examination – 30 marks.

Grid Template - End Semester Examination (Theory)

Q. No	Knowledge (Definition, Descriptive Notes, Theoretical Proofs)	Understanding & Application (Illustration/Numerical Problems)	Marks
1.	15	05	20
2.	15	05	20
3.	15	05	20
Total	45	15	60
Weightage (%)	75%	25%	100%