



St. Xavier's College – Autonomous Mumbai

F.Y.B.A

Syllabus For 1st Semester Course in Statistics (June 2014 onwards)

Contents:

Theory Syllabus for Courses:

A.STA.1.01 – Descriptive Statistics (A).

Practical Course Syllabus for: A.STA.1. PR

F.Y.B.A
(STATISTICS)

SEMESTER 1

COURSE : A.STA.1.01

DESCRIPTIVE STATISTICS (A)

[45 LECTURES]

Learning Objectives:

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

Unit – 1

Data: Types , Collection and Management, Presentation of data. (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.

Collection of Data :

Concepts of statistical population and sample.

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

Diagrammatic representation using Bar diagrams and Pie chart.

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

Bivariate : Frequency distribution, Marginal and Conditional frequency distributions.

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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 : Index Numbers.

(15 L)

Index number as a comparative tool. Stages in the construction of Index Numbers.

Simple and Composite Index Numbers.

Fixed base Index Numbers. Chain Base Index Numbers, Base shifting, Splicing and

Deflating. Price and Quantity Index Numbers - Laspeyres', Paasche's, Marshal-

Edgeworth's, Dorbisch-Bowley's and Fisher's Index Numbers. Value Index Number. Time

reversal test. Factor reversal test, Circular test. Cost of Living Index Number. Concept of

Real Income based on the Consumer Price Index Number.

Problems in the construction of Consumer Price Index Number.

List of 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. Index Numbers.

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. www.actuaries.org.uk
11. www.actuariesindia.org
12. www.soa.org

