

UNIVERSITY OF MADRAS
U.G. DEGREE COURSE
SYLLABUS WITH EFFECT FROM 2020-2021

BST-CSA01

ALLIED STATISTICS-I

Credits: 5

Year: I/II, Sem:I/III

Learning Outcomes: Upon finishing this course, students will be able to

1. Know the uses of statistics in society
2. Organize, manage and present data
3. Analyze the statistical data graphically using frequency distribution and cumulative frequency distribution.
4. Analyze statistical data using measures of central tendency, dispersion and location.
5. To understand correlation between continuous variables and association between categorical variables.

Course Content:

UNIT-I: Methods of collection: Complete enumeration – Sample Survey - Primary data - Secondary data sources - Types of variables. Nominal, ordinal and scale data. Presentation of Data: Presentation of data by tables - construction of tables (Univariate and Bivariate) – frequency table and contingency table

UNIT-II: Diagrammatic presentation: Line diagram, Bar diagrams: Simple, multiple, subdivided and Percentage-Pie chart, comparative pie chart - Graphical representation of a frequency distribution by histogram and frequency polygon and Ogives

UNIT-III: Analysis of Data (Univariate): Measures of central tendency: Arithmetic mean-Median and Mode choice of an average-characteristic of a good average.

UNIT-IV: Measures of dispersion: Range-Quartile deviation-mean deviation - standard deviation - relative measures of dispersion - Coefficient of Variance

UNIT-V: Analysis of Data (Bivariate): Correlation- Scatter plot-coefficient of correlation-Pearson's Correlation Coefficient, Spearman's rank correlation coefficient-correlation coefficient for bivariate frequency table- Association of attributes: Chi-square test of independence of attributes

Suggested Readings:

Books for study:

1. Gupta, S.C and Kapoor, V. K (2002), *Fundamentals of Mathematical Statistics*, Sultan Chand and Sons, New Delhi.
2. Goon A.M., Gupta M.K. and Dasgupta B. (2002): *Fundamentals of Statistics*, Vol. I & II, 8th Edn. The World Press, Kolkata.
3. Irwin Miller, Marylees Miller (2006): *John E. Freund's Mathematical Statistics with Applications*, (7th Edn.), Prentice Hall International INC.
4. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007): *Introduction to the Theory of Statistics*, 3rd Edn., (Reprint), Tata McGraw-Hill Pub. Co. Ltd

Books for reference:

1. Saxena H.C.: *Elementary Statistics*. S. Chand & Co., 2009.