

Stat-121 Basic Statistics-II
50 Marks: 02 Credits
Number of Class: 20-26

Correlation and Regression: Concept of Bivariate Data, Scatter diagram, Construction of Bivariate Table. Simple Correlation, Correlation Ratio, Rank Correlation, Spearman Rank Correlation, Kendall's Tau, Intra-class Correlation, Serial and bi-serial Correlation, Partial and Multiple Correlation, Spurious Correlation and Non-sense Correlation. Simple Regression, Principle of Least Squares, Principle of Minimum Perpendicular Method, Lines of Best fit, Residual Analysis, Linearity of Regression. Three Variables Regression, Coefficient of Determination.

Analysis of Attributes: Basic Ideas, Classification, Order of Classes and Class Frequencies, Ultimate Class Frequencies, Positive Attributes, Consistency, Incomplete Data, Association of Attributes, Independence, Complete Association and Disassociation, Measures of Association, Coefficient of Association, Coefficient of Colligation and Partial Association. Contingency Table, Analysis of $r \times c$ Contingency Table, Analysis of 2×2 Contingency Table by Yate's Correction, Fisher's Exact Test, Power Function of 2×2 Contingency Table.

Text

1. Stuart, A. and Ord, J. K. (1994): *Kendall's Advanced Theory of Statistics, Vol 1: Distribution Theory*, 6th edition, A Hodder Arnold Publication.

References

1. Draper, N.R. and Smith, H. (1998): *Applied Regression Analysis*, 3rd edition, John Wiley and Sons, New York.
2. Gupta, S.P. and Kapoor, V.K.(2009): *Fundamentals of Mathematical Statistics*, 11th edition, Sultan Chand & Son.
3. Hogg, R.V. and Craig, A. T (2009): *Introduction to Mathematical Statistics*, 6th edition, Pearson Education, Singapore.
4. Miller, I. and Miller, M. (2005): *Mathematical Statistics with Applications*, 7th edition, Pearson Education.
5. Montgomery, D.C. and Peek, E.(1992): *An Introduction to Regression Analysis*, 2nd edition, John Wiley and Sons, New York.
6. Shil, R.N. and Debnath, S.C.(2009): *An Introduction to the Theory of Statistics*, Latest edition.
7. Yule, G.U. and Kendall, M.G. (1999): *An Introduction to the Theory of Statistics*, Universal Book Stall, New Delhi.

