

Geog. 305 Quantitative Geography Cr. Hours (03)
BS Geography (5th to 8th Semester) Programme, University of the Punjab, Lahore

- **Introduction**
 - Statistical Methods and the Geographers.
 - The nature of Geographical Data and Measurement Scales.
- **The Mathematical Basis of Statistics.**
- **The Collection and Presentation of Data**
 - Methods of Data collection.
 - Major problems in collection of Data.
 - Presentation of Data : Tabulation, Frequency Distribution, Histogram, Frequency Polygon, Frequency Curve, Ogive, Bar charts and pictograms.
- **Summarizing Data**
 - Measures of Central Tendency : Arithmetic Mean, Median, Mode, Quantiles. Measures of Dispersion : Range, Semi Interquartile Range, Mean Deviation, Standard Deviation, Standard Score.
- **Measures of Variability**
 - Relative Variability, Coefficient of Variation.
 - The Lorenz Curve.
 - The Gibbs Martin Index of diversification.
 - The Ternary Diagram.
- **Time Series**
 - Graphs.
 - Growth and decline.
 - Index numbers.
 - Logarithmic Scales.
 - Trends and fluctuations.
 - Trend lines by least-squares method.
 - Trend lines for exponential (i.e.,) logarithmic series.
- **Correlation**
 - The product moment correlation coefficient(r)
 - Spearman's rank correlation coefficient
 - The correlation matrix.
- **Regression**
 - Dependent and independent variables.
 - Scattergrams, regression lines and residuals.
 - Interpolation, prediction and explanation.
 - Methods of constructing regression lines.

1. Books Recommended :

2. Ackerman, Edward A.; 1958 Geography as a Fundamental Research Discipline, University of Chicago Press, Chicago.
3. Croxton, F.E. & Cowden, D.J.; 1955 Applied General Statistics Isaac Pitman, London.
4. Ebdon, D.; 1977 Statistics in Geography, Basil Blackwell Oxford.
 - a. Gay L. R.; 1992
5. "Educational Research: Competencies for Analysis and Application" Fifth edition, Macmillan Publishing Company,
6. Gee, W. 1950 Social Science Research Method, Appleton Century Crofts, Inc. New York.
7. Gregory, S.; 1973 Statistical Methods and the Geographers, Longman London.
8. Hammond, R.E. Mc. Cullagh; 1978 Quantitative Techniques in Geography, Clarendon Press, Oxford.
9. Hartshorne, R. Perspective on the Nature of Geography, John Murray London.
10. Huff, D.; 1973 How to Lie with Statistics, Hammonds-worth, Penguin.
11. James, P.E. & Jones C.F ; 1954 American Geography, Inventory & Prospects, University Press, Syracuse.