

Core VI

Quantitative Techniques in Geography

Unit-I:

Learning Outcome:

Understand the nature and scope of Quantitative Techniques in Geography.

Data Processing in Geography: Sources of Data, Tabulation of data, Scales of Measurements in Geography, Frequency Distribution, Data Matrix. Sampling Methods: Probability and non-probability sampling, Types of Sampling (Simple Random, Systematic, Stratified and Purposive)

Unit-II:

Learning Outcome:

Acquire skills to handle Statistical Techniques in Geography

Descriptive Statistics: Central Tendencies – Mean, Median, Mode; Measures of Partitions - Quartile, Decile, Percentile; Measures of Dispersion- Standard Deviation and Coefficient of Variation, analysis of variance; Measures of inequality. Theoretical Distribution: Concept of Probability Distribution (Theoretical only), Normal Distribution – Characteristics, Area under Normal Curve. Relationship Analysis:

Unit-III:

Learning Outcome:

Apply the acquired skills to solve Statistical problems in Geographical Studies.

Correlation - Spearman's and Karl Pearson's coefficient of correlation; Simple Regression, test of significance. Logistic regression, multivariate factor analysis & Discriminate function analysis

Unit-IV: Practical

Learning Outcome:

Proficiently apply quantitative methods and statistical techniques to analyze and interpret geographical data, enabling them to make well-informed and evidence-based decisions in various geographical contexts.

1. Drawing of histogram, frequency curve and ogive in grouped and discrete data.
2. Calculation & drawing of graphs showing mean, median, mode in grouped and discrete data.
3. Calculation of mean deviation, standard deviation and coefficient of variation.
4. Calculation Rank correlation, Product moment correlation and Simple linear Regression

5. Practical Record and Viva-Voce.

Text Books:

- ✓ Mahmood A. (1999). *Statistical Methods in Geographical Studies*. Rajesh Publications, New Delhi.
- ✓ Sarkar, A. (2013). *Quantitative Geography Techniques and Presentations*, Orient Blackswan.

Reference Books:

- ✓ Alvi, Z. (1995). *Statistical Geography: Methods and Applications*. Rawat Publications, Jaipur.
- ✓ Deshpande, B.R. (2007). *Statistical Methods for Geography*. Pragati Publications, Pune.
- ✓ Ebdon D. (1977). *Statistics in Geography: A Practical Approach*. Oxford, UK. Blackwell.
- ✓ Gupta, S.C., and Kapoor, V.K. (2018). *Fundamentals of Mathematical Statistics*. Sultan Chand & Sons, New Delhi.
- ✓ Katti, C.B. (2008). *Basic Statistics for Geographers*. Rawat Publications, Jaipur.
- ✓ Pal, S. K. (1998). *Statistics for Geoscientists*. Tata McGraw Hill, New Delhi.
- ✓ Rogerson P.A. (2014). *Statistical Methods for Geography: A Student's Guide*. Sage, New Delhi.
- ✓ Sarker, P.C. (2013). *Fundamental Statistics for Geographers*. Rawat Publications, Jaipur.
- ✓ Singh D. (2018). *Elementary Statistical Methods*. R K Books, New Delhi.
- ✓ Triola, M.F. (2019). *Elementary Statistics*. Pearson,
- ✓ Walford N. (2011). *Practical Statistics for Geographers and Earth Scientists*. Wiley-Blackwell, West Sussex, United Kingdom.