

Course Code	Course Name	Credits
26PE509	Applied Statistics in Physical Education	04

Course Objectives

- Introduce the meaning, scope, and importance of statistics in Physical Education.
- Explain types of data, variables, and basic statistical concepts.
- Understand measures of central tendency and dispersion for data analysis.
- Apply graphical representation and probability distribution techniques.
- Analyze inferential statistical tools such as t-test, chi-square, correlation, ANOVA, and ANCOVA.
- Develop skills in interpreting data using statistical methods and software tools.

Learning Outcomes

Upon successful completion of this course, it is intended that a student will be able to:

- Understand basic concepts, types, and importance of statistics.
- Apply measures of central tendency and dispersion in data analysis.
- Analyse data using graphs, normal curve, and probability concepts.
- Evaluate relationships using correlation and tests of significance.
- Interpret results using inferential statistical techniques.
- Use statistical software for practical data analysis in Physical Education.

Unit 1 - Introduction

Meaning and Definition of Statistics. Function, need and importance of Statistics. Types of Statistics. Meaning of the terms, Population, Sample, Data, types of data. Variables; Discrete, Continuous. Parametric and non-parametric statistics.

Unit 2 – Data Classification, Tabulation and Measures of Central Tendency

Meaning, uses and construction of frequency table. Meaning, Purpose, Calculation and advantages of Measures of central tendency Mean, median and mode.

Unit 3 - Measures of Dispersions and Scales

Meaning, Purpose, Calculation and advances of Range, Quartile, Deviation, Mean Deviation Standard Deviation, Probable Error. Meaning, Purpose, Calculation and advantages of scoring scales; Sigma scale, Z Scale, Hull scale

Unit 4 – Probability Distributions and Graphs

Normal Curve. Meaning of probability- Principles of normal curve Properties of normal curve. Divergence form normality Skewness - and Kurtosis. Graphical" Representation: -in Statistics; Line diagram, Bar diagram, Histogram, Frequency Polygon, 0 give Curve.

Unit 5 - Inferential and Comparative Statistics

Tests of significance; Independent “t” test, Dependent “t” test chi square test, level of confidence and interpretation of data. Meaning of correlation, co-efficient of correlation - calculation of coefficient of correlation by the product moment method and rank difference method.

Reference Books:

1. Best J. W (1971) Research in Education, New Jersey; Prentice Hall, Inc
2. Clark D.H. (1999) Research Problem in Physical Education 2nd edition, Eaglewood Cliffs, Prentice Hall, Inc.
3. Jerry R Thomas and Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis; Human Kinetics;
4. Kamlesh, M. L. (1999) Reserach Methodology in Physical Education and Sports, New Delhi
5. Rothstain A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc
6. Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication
7. Thirumalaisamy (1998), Statistics in Physical Education, Karaikudi, Senthilkumar ublications