SYLLABUS OF DISCIPLINE SPECIFIC ELECTIVE PAPERS (DSE)
SEMESTER-VIII
B.A.DSE (PE)-4.5
STATISTICAL APPLICATIONS IN PHYSICAL EDUCATION

Sl. No.	Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
			Lecture	Tutorial	Practical/ Practice		
5	**B.A-DSE-PE (4)-4.5 STATISTICAL APPLICATIONS IN PHYSICAL EDUCATION**	04	3	0	1	XII Pass	NIL

Learning Objectives:
The objective of this course is to provide the understanding through practical knowledge and practices about statistics for enough scope of creativity/Innovations in the field of physical education and sports.

Learning Outcomes:
1. The learner will be able to understand the basic concepts of statistics in physical education.
2. The learner will be able to illustrate group and ungroup data through graphical presentation.
3. The learner will be able to compute measures of central tendency and variability.
4. The learner will be able to assess validity, reliability and objectivity.
5. The learner will be able to apply parametric and non-parametric tests in the field of physical education and sports.

SYLLABUS

CREDITS: 4 [Theory-3, Practical-1]
Theory-45 hours
Practical-30 hours

PART-A: THEORY

UNIT-I INTRODUCTION TO STATISTICS, DATA IN STATISTICS AND DATA MEASUREMENT SCALES (9 Hours)

1.1 Meaning, types and Importance of Statistics in Physical education and sports
1.2 Data and its types in statistics: Grouped and ungrouped data, Parametric and Non-parametric, Continuous and Discrete
1.3 Data measurement scales: ratio scale, nominal scale, ordinal scale, interval Scale

UNIT-II POPULATION, SAMPLING TECHNIQUE AND DATA MANAGEMENT (9 hours)

2.1 Population and Sample, Sampling Techniques
2.2 Class Distribution, Construction of Tables
2.3 Importance, Advantages, Disadvantages and Calculation from Grouped and Ungrouped data
2.4 Graphical representation of data: Histogram, Frequency Polygon, Frequency Curve, Cumulative Frequency Polygon, Pie Diagram

UNIT-III MEASURES OF CENTRAL TENDENCY, MEASURES OF VARIABILITY AND PERCENTILES AND QUARTILES (9 hours)

3.1 Measures of Central Tendency: Meaning, importance, computing from group and ungroup data
3.2 Measures of Variability: Meaning, importance, computing from group and ungroup data
3.3 Percentiles and Quartiles: Meaning, importance, computing from group and ungroup data

UNIT-IV VALIDITY, RELIABILITY AND OBJECTIVITY (9 Hours)

4.1 Normal Curve: Meaning, importance, and characteristics

4.2 Meaning and Definition of Validity and its measure
4.3 Meaning and Definition of Reliability and its measures
4.4 Meaning and Definition of Objectivity and its measures

UNIT-V T- TEST, ANOVA, AND CHI SQUARE (9 hours)

5.1 T-test- Meaning, Formula, Types and Uses
5.2 Analysis of Variance (ANOVA)- Meaning, Formula, Types and Uses
5.3 Chi-square- Meaning, Formula, Types, and Uses

PART-B: PRACTICALS (30 hours)

1. Draw a frequency distribution table from a given set of data.
2. Calculate the Measure of central tendency from a given set of data.
3. Calculate the Measure of variability from a given set of data.
4. Graphical Presentation of the data: Histogram, Frequency Polygon, Frequency Curve, Cumulative Frequency Polygon, Pie Diagram (anyone)

Suggested Readings:

1. Best, J.W. (1963) **Research in Education** U.S.A.: Prentice Hall.
2. Bompa, T. O. & Haff, G. G. (2009) **Periodization: Theory and Methodology of Training** 5th ed. Champaign, IL: Human Kinetics.
3. Brown, L. E., & Ferrigno, V. A. (2005) **Training for Speed, Agility and Quickness** 2nd ed. Champaign, IL: Human Kinetics.
4. Brown, L.E. & Miller, J., (2005) **How the Training Work. In: Training Speed, Agility, and Quickness** Champaign, IL: Human
5. Garrett, H.E. (1981) **Statistics in Psychology and Education** New York: Vakils Feffer and Simon Ltd.
6. Oyster, C. K., Hanten, W. P., & Llorens, L. A. (1987) **Introduction to Research: A guide for the Health Science Professional** Landon: J.B. Lippincott Company.
7. Shaw D. (2018) **"Fundamental Statistics in Physical Education and Sports Sciences"** Sports Publication, ISBN: 81-86190-57-0.
8. Thomas, J.R., & Nelson J.K. (2005) **Research Method in Physical Activity** U.S.A: Champaign,IL: Human Kinetics Books.
9. Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011) **Research Method in Physical Activity** U.S.A: Champaign, IL: Human Kinetics Books.
10. Uppal, A. K. (1990) **Physical Fitness: How to Develop** New Delhi: Friends Publication.
11. Verma, J. P. (2000) **A Text Book on Sports Statistics** Gwalior: Venus Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.