

# THE IIS UNIVERSITY

## Ph.D Programme - Physical Education

### Paper I : Research Methodology

PHE – 141

Course Credit : 4  
Course duration : 50 hrs

Max. Marks

CA : 50  
SEE : 50  
Total : 100

Duration of Exam :

CA : 1 Hour  
SEE : 3 Hour

#### Objectives :

This course will enable students to understand and known :

- Research Methodology
- Statistical Methods
- Errors in observation and calculation

Units	Contents	Total No. of Teaching hours
Unit I	<b>Introduction to Research Methodology</b> : Meaning and purpose of Research; steps in research with special emphasis on concepts like problem, Hypothesis, constructs and variables; Types of Research	10 hrs
Unit II	<b>Methods of Research &amp; Design</b> : Experimental method; observation method, survey methods, field studies, case studies, Research design – Meaning, usage and types.	10 hrs
Unit III	<b>Techniques of data collection &amp; Sampling</b> : Primary Data : Interview, observation, Questionnaire, Semantic differential, Q-methodology, scales- tests, Sociometry; Secondary Data: data banks, review of journal, magazine, Reliabilities, suitability, internet and Adequacy of data, sampling : Meaning characteristics of good sample design, methods & Principles.	10 hrs
Unit IV	<b>Statistics</b> : Definition and types of statistics, Levels of measurement, construction of frequency distribution, graphical representations : Histogram, frequency polygon, ogives, Bar diagram, piecharts, Analysis of Data and Report Writing : Types, format.	10 hrs
Unit V	<b>Descriptive Statistics</b> : Measures of Central Tendency, measures of Variability Correlation and Multiple regression. <b>Inferential Statistics</b> : Normal Probability Curve, Standard Error Formulas, t test, ANOVA, F -test, Chi square, Z test. Non Parametric Statistics : Uses; types.	10 hrs
<b>Total Contact Hours</b>		<b>50 hrs</b>

**Essential Readings:**

Agarwal, J.C. (1989) *Educational Research – An Introduction*, New Delhi: Arya Book Depot.

Agrawal, B.L., *Basic statistics*, New Delhi: New Age publishers.

Ahuja Ram (2006) *Research Methods*, Jaipur: Rawat Publication

Kothari, C.R. (1989) *Research Methodology: Methods and Techniques*, Bangalore: Wiley Eastern.

Young, P.V., (1988) *Scientific Social Surveys & Research*, New Delhi: Prentice Hall of India.

Yule, G.V. and Kendall, M.G., *An Introduction to the theory of statistics*.

**Books Recommended:**

Allen, R.G.D.(1958) *Statistics for Economics*, London: Allen & Unwin.

Anderson T.W. *An Introduction to Multivariate Statistical Analysis*, New Delhi: Wiley Eastern Publication Ltd.

Bernad Oste and Mensing R.W. (1975) *Statistics in Research Ames*: The Iowa State University Press.

Best John W. and Kahn, James V. (2006)