

# Suresh Gyan Vihar University Jaipur

## Ph.D. COURSE WORK SYLLABUS

### Paper-I RESEARCH METHODOLOGY AND COMPUTER APPLICATION

#### PPD 101

(Common to All Faculty)

Time Duration: 3 hrs

M.M. - 100

Credit: 04

Unit	Syllabus	Hour
<b>PPD 101-A (Research Methodology)</b>		
1	<b>Introduction to Research Methodology</b> : Meaning of Research, Objectives of Research, Motivations in Research, Types of Research, Research Approaches, Significance of Research, Research Methods v/s Methodology, Research and Scientific Methods, Research Process, Criteria of Good Research	4
2	<b>Defining the Research Problem</b> : What is Research Problem?, Selecting the Problem, Necessity of and Techniques in defining the problem	4
3	<b>Sample Design</b> : Implication, Steps. Criteria for selecting a sample procedure, Characteristics of Good sampling Procedure, Types of Sample Design, Selecting Random Samples, Complex random sampling Design	4
4	<b>Methods of Data Collection</b> : Collection of Primary Data, Observation Method, Interview method, Collection of Data through questionnaire and Schedules, Other methods. Collection of Secondary Data, Selection of appropriate method for data collection, Case Study Method, Guidelines for developing questionnaire, successful interviewing. Survey v/s experiment	4
5	<b>Processing and Analysis of Data</b> : Measures of Central Tendency, Dispersion, correlation and Regression, Chi- square test : Applications, Steps, characteristics, limitations, Analysis of Variance and Co-variance	4
6	<b>Testing of Hypothesis</b> : Meaning, Basic concepts, Flow diagram, Power of a hypothesis test, Important parametric tests, Hypothesis Testing of Means, hypothesis testing of Correlation coefficients, Limitations of Tests of hypothesis.	4
<b>PPD 101-B (Computer Applications)</b>		
7	<b>Introduction to MS Excel</b> -Features and functions of spreadsheet, creating spreadsheet and enter data, format worksheets, adding graphics, printing, Calculate, manipulate and analyse data, custom calculations, consolidating worksheets, pivot tables, charts, performing what - if analysis	2
8	<b>Introduction to UGCInfonet, INFLIBNET &amp; ERNET</b> , how to find relevant publications in Scopus, WOS, TR, SCI indexed journal, Arts & Humanities citation indexed, Social Science citation indexed etc.	4
9	<b>Data Analysis Softwares &amp; Analysis Techniques (SPSS) (Part-1)</b> - Introduction-Background , Data Entry, Defining Variables , Variable and Value Labels , Entering Data. File Management- Saving an SPSS for Windows 7 File, Backing Up Your Data, Retrieving Data Files. Descriptive Statistics- Frequency Tables, Descriptive, Cross-tabulation, Three-way tables. Editing and Modifying The Data- Inserting Data, Deleting A Case, Inserting A Variable, Deleting a	6

	Variable, Moving a Variable	
<b>10</b>	<b>Data Analysis Softwares &amp; Analysis Techniques (SPSS) (Part II)-</b> Constructing New Variables -Computing a New Variable, Computing a New Variable by using built-in Functions , Computing Duration of Time Difference by built-in Functions , Recoding a value , Selecting a Subset of the Data Graphics- Bar Charts, Histograms, Scatter Plots, Plotting a Regression Line on a Scatter Plot, Statistical Inference In SPSS-Introduction, Categorical Variable, the Chi-squared test and Fisher's Exact test. Continuous Outcome Measures- Comparison of Means Using a t-test Linear Regressions-Model Checking. Non-Parametric Methods Comparisons Of Related Or Paired Variables-Continuous Outcome Measures, Analysis of Binary Outcomes that are Related, Related Ordinal Data. LOGISTIC. REGRESSIONS- Model Checking. SURVIVAL ANALYSIS, READING AN EXCEL FILE INTO SPSS, CREATING A SPSS SYNTAX	<b>8</b>
<b>11</b>	Basic Matlab, Simulation, Simulink	<b>4</b>

**Reference Books: Latest Editions of following Books**

- 1) Kothari, C.R., *Research Methodology (Methods and Techniques)*, New Age Publisher
- 2) *Fundamentals of modern statistical methods* By Rand R. Wilcox
- 3) *Power Analysis for Experimental Research A Practical Guide for the Biological, Medical and Social Sciences* by R. Barker Bausell, Yu-Fang Li Cambridge University Press
- 4) *Design of Experiments: Statistical Principles of Research Design and Analysis*, by Robert
- 5) *How to Do Everything with Microsoft Office Excel 2007* by Guy Hart-Davis, McGraw-Hill
- 6) *Data Analysis in Management with SPSS Software*, Authors: Verma, J.P. Springer Link
- 7) *The SPSS Guide to the New Statistical Analysis of Data*, by T.W. Anderson and Jeremy D. Finn, Authors: Gerber, Susan B., Voelkl, Kristin E.
- 8) *Statistics for Social Sciences (With SPSS Applications)-PHI*, by Asthana & Braj Bhushan (Author)
- 9) *Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS (Response Books)- online-* by S. Ajai Gaur (Author)
- 10) *Getting started with Matlab* by Rudra Pratap
- 11) *A very basic Matlab primer* by Jacek Polewczak

