

**SunRise University**  
**Bagad Rajput, District-Alwar (Raj)**

[www.sunriseuniversity.in](http://www.sunriseuniversity.in)

Toll Free No. -18008895112

**Pre-Ph.D. course work guidelines (Revised August – 2021)**

Paper	Title	Credits	Marks			Duration of Examination	Passing (%)
			External	Internal (Assignment)	Total		
Paper-I	Research Methodology	04	70	30	100	3 hrs	55
Paper-II	Computer application	04	70	30	100	3 hrs	55
Paper-III	Research Reviewing & Writing in relevant discipline	04	70	30	100	2 hrs	55
Paper-IV	Research and Publication Ethics	02	35	15	50	3 hrs	55
Paper-V	Paper/Seminar on Research topic (Specific)	04	100	--	100	*Seminar / conferences - Participation/presentation - 2 credits research paper publications-2 credits	55

**Note:**

- 1 Research student must pass in paper no. I to IV of pre Ph.D. course work to qualify for submission of pre synopsis for confirmation of registration and research topic by concern DRC and other evaluation related to Paper No.V (internal evaluation to be carried out by Research department/supervisor) to be submitted before submission of final Ph.D. thesis to the university.
- 2 The above revised structure shall be applicable to the research scholar those who appeared in SRUET-2021(Entrance test) and onwards
- 3 As per university/UGC guideline exemption will be given to the students who have passed M.Phil. Examination as per UGC regulation 2009

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**Pre-Ph.D-SYLLABUS**

**Paper – 1 Research Methodology**

Paper-1	Research Methodology	Credits – 04	Marks -100	Examination Duration: 3 hrs
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**UNIT – I INTRODUCTION (10 hrs.)**

Meaning, Concept, nature steps, types and characteristics of research. Qualities of Research, Components of Research Problem, Various Steps in Scientific Research, Hypothesis, Research Purposes, Research Design, Survey Research, Case Study Research, Philosophical and Sociological foundations of research, Interdisciplinary approach and its implications in various research area.

**UNIT-II DATA COLLECTION (12 hrs.)**

Sources of Data: Primary Data, Secondary Data ; Methods of collecting primary and secondary data, Importance and methods of data editing and data validation. Qualitative and quantitative methods of research like Historical, case study, ethnography, documentary and content analysis, survey (Normative, descriptive, evaluative etc.) field and laboratory experimental studies.

Tools of data collections: their types, attributes and uses.

**UNIT-III SAMPLE DESIGN (10 hrs.)**

Characteristics and Types of sample design, Concept of sampling and other concepts related to sampling, Sampling Merits and Demerits, Techniques of selecting a random sample, Experiments , Procedure ; Control Observation : Merits, Demerits, Kinds , Procedure , Sampling Errors : Type - I Error and Type – II Error. Probability and non-probability samples, their characteristics and implications.

**UNIT-IV HYPOTHESIS (08 hrs.)**

Definition, testing of hypothesis, procedures of hypothesis testing, flow diagram for hypothesis testing, Parametric and non-parametric tests for testing of hypothesis, Limitations of tests of hypothesis.

**UNIT-V METHODS OF DATA COLLECTION (12 hrs.)**

Quantitative methods: Field Study Experimental methods, Survey and web survey methods Development of scales/questionnaire/schedules/tests Formulation of questions and their testing Reliability and validity

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Qualitative methods: Observational methods, Focus Group discussions, Case Studies, Content analysis, Content and Narrative, Ethnography

Analysis of qualitative data based on various tools. Analysis of quantitative data and its presentation with tables, graphs etc, Estimates of Means and Proportions

### **UNIT –VI STATISTICAL APPLICATION (08 hrs.)**

Correlation and Regression Analysis , Analysis of Variance, Completely Randomized Design, Partial and Multiple Correlation, Discriminate Analysis , Cluster Analysis, Factor Analysis

One Sample Test , Two Sample Tests , Chi-Square Test, Association of Attributes, t-Test , f-Test, z-Test, Standard deviation , Coefficient of variations, Index Number, Time Series Analysis, Decision Tree. Decision making with hypothesis testing through parametric and non parametric tests.

### **REFERENCES**

1. Wilkinson & Bhandarkar : Methodology and Techniques of Social Research.
2. Pauline Vyoung: Scientific Social Surveys and Research.
3. Panneerselvam, R., Research Methodology, Prentice Hall Of India, New Delhi, 2004.
4. Kothari: Research Methodology.
5. Festinger. L & D. Katz: Research Methods in Behavioral Science.
6. Sellitz, Et Al: Research Methods in Social Relations
7. Kothari, C. R. (2005) Quantitative Technique, New Delhi, Vikas Publication House.
8. Gautam, N. C. (2004) Development of Research tools, New Delhi, Shree Publishers.
9. Gupta, Santosh (2005) Research Methodology and Statistical Techniques, Deep and Deep Publications.
10. Montgomery, Douglas C. & Runger, George C. (2007), 3/e, Applied Statistics & Probability for Engineers (Wiley India)



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### Paper- 2 Computer Application

Paper-1	Computer Application	Credits – 04	Marks -100	Examination Duration: 3 hrs
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#### UNIT- 1 INTRODUCTION

(14 hrs.)

Basis of Computer and types of Computer, Classification of computers, computer memory, RAM, ROM, CPU, I/O devices. Number system - binary, octal and hexadecimal, types of software, application of system software

Operating systems and its types, single user, multi user, Real time processing, multi-tasking, single tasking, application of computer for business and research

#### UNIT- II DATA COMMUNICATION AND NETWORKS

(10 hrs.)

Data communication concepts, local area network, wide area network, internet, intranet, extranet, **website, E-mail, search engines, enterprise, E-communication and E-collaboration.**

#### UNIT- III MS-OFFICE AND ITS APPLICATION

(12 hrs.)

File handling in window, various versions of MS-Office, MS-Word: Text formatting, Mail Merge , Macros. MS-Excel: Features, various formulas and functions.

MS-Power Point: Creating presentations and adding effects.

#### UNIT- IV INTRODUCTION TO SPSS

(12 hrs.)

Definition, objectives and features, data analysis using SPSS

Data entry creating variables, switching to data labels

Data analysis: Frequencies, recording into different variables, cross tabulations and layers.

#### UNIT- V APPLICATION OF INTERNET

(12 hrs.)

Application of Internet in research, Use of Internet, sights (DOAJ),Use of E Journals, Use of E-library, INFLIBNET, use of EBSCO HOST ,Online database of Academic Libraries

#### REFERENCES

1. Introduction to computer and its applications : Dr.k. Dhanasekaran , Manikandan Palanisamy
2. Step by Step Computer Applications : John Roche
3. Jain, Satish : “ Introduction to Computer Science and basic Programming “ BPB Publications.
4. Saxena , S., “ A First Course in Computers” , Vikas Publishing Pvt. Ltd., New Delhi 1998.
5. Sanders, D.H., Computer Today, NY: McGraw Hill, 1981.
6. Sinha, P.K., Computer Fundamentals, New Delhi : BPB Publications, 1992.
7. Rajaram, R :Basic Computer Science and Communication Engineering

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**Paper – 3 Research Reviewing & Writing in Relevant Discipline**

Paper-1	Research Reviewing & Writing in Relevant Discipline	Credits – 04	Marks -100	Examination Duration: 3 hrs
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**UNIT- I REVIEWING OF PUBLISHED RESEARCH IN RELEVANT FIELD (14 hrs.)**

Review of literature, Source of literature, source and collection of Data & Information, writing of review of literature, Preparation of Literature Review Structure, Style and Contents and Guidelines for Review of literature, Evaluation of Literature

**UNIT- II RESEARCH DESIGN (10 hrs.)**

Research Design: Qualitative, Quantitative and Mixed Methods Approaches, Meaning and definition of quantitative method, arranging data to convey meaning – Tables, Graphs and Frequency Distribution

**UNIT- III DEVELOPMENT OF RESEARCH PROPOSAL (10 hrs.)**

Research proposal and its elements, Formulation of research problem-criteria of sources and definition & Development of objectives and characteristics of objectives, Development of hypotheses and its applications in relevant field

**UNIT- IV RESEARCH PAPER WRITING (12 hrs.)**

Writing a Research Paper, Choosing a Topic, Preparing a Working Bibliography Outlining and need to write a Research Paper

Examining the methods of evaluating and interpreting published research, Developing skills needed to research available literature for information relevant to a given topic, Exploring the principles and techniques of topic/project development and testing.

**UNIT- V REPORT/THESIS WRITING (14 hrs.)**

Thesis Writing, Structure and components of Thesis, types of report, Principles of report writing, the First Draft, Revisions, Language and Style, Use of Quotations

Special Elements: title page, table of contents, headings and sub-headings, footnotes, tables and figures, appendix, bibliography etc. Evaluation of research report, Making effective presentation of research findings, Concepts of Bibliography and References, Plagiarism checking, Editing, Typing Instructions and proof reading ,Intellectual property right- reporting & Filing

Examining the methods of evaluating and interpreting data collected in the research process. Developing an understanding of the various statistical methods that can be used to analyze data.

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**Paper – 4 Research and Publication Ethics (RPE)**

Paper-1	Research and Publication Ethics	Credits – 02	Marks -50	Examination Duration: 2 hrs
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**THEORY**

**UNIT- I PHILOSOPHY AND ETHICS (3 hrs.)**

Introduction to philosophy: definition, nature and scope, concept, branches,

Ethics: definition, moral philosophy, nature of moral judgments and reactions

**UNIT- II SCIENTIFIC CONDUCT (5hrs.)**

Ethics with respect to science and research

Intellectual honesty and research integrity

Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)

Redundant publications: duplicate and overlapping publications, salami slicing

Selective reporting and misrepresentation of data

**UNIT- III PUBLICATION ETHICS (7 hrs.)**

Definition, introduction and importance ,Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. ,Conflicts of interest

Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types ,Violation of publication ethics, authorship and contributor ship ,Identification of publication misconduct, complaints and appeals ,Predatory publishers and journals

**PRACTICE**

**UNIT- IV OPEN ACCESS PUBLISHING (4 hrs.)**

Open access publications and initiatives ,SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies ,Software tool to identify predatory publications developed by SPPU ,Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggestion, etc.

**UNIT- V PUBLICATION MISCONDUCT (4hrs.)**

**A Group Discussions (2 hrs.)**

Subject specific ethical issues, FFP, authorship ,Conflicts of interest

Complaints and appeals: examples and fraud from India and abroad.



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### **B. Software tools (2 hrs.)**

Use of plagiarism software like Turnitin, Urkund and other open source software tools

### **UNIT- VI DATABASES AND RESEARCH METRICS (7hrs.)**

#### **A. Databases (4 hrs.)**

Indexing databases ,Citation databases: Web of Science, Scopus

#### **B. Research Metrics (3 hrs.)**

Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score

Metrics: h-index, g index, i10 index, altmetrics

### **REFERENCES**

1. P. Chaddah, (2018) Ethics in competitive Research: Do not get scooped: do not get plagiarized, ISBN:978-938748086
2. National Academy of Sciences, National Academy of Engineering and Institute of Medicine.
3. (2009) on Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition
4. National Academies Press.
5. Resnik, D.B. ( 2011). What is ethics in research & Why is it important. National Institute of Environmental Health Sciences, 1-10 Retrieved from
6. Beall, J. ( 2012) Predatory publishers are corrupting open access. Nature, 489(7415), 179
7. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN:978-81-939482-1-7.
8. The Ethics of Teaching and Scientific Research By Miro Todorovich; Paul Kurtz; Sidney Hook.
9. Research Ethics: A Psychological Approach By Barbara H. Stanley; Joan E. Sieber; Gary B. Melton

The Pre-Ph.D course work classes shall be completed in one or two semester. The university will manage week end or continue/residential classes for course work. The course work classes will hold on Saturday & Sunday of every week. Schedule of residential classes and workshop communicated to scholars separately. The assignment should be submitted time to time. Evaluation examination will held in end of course time.