



MK UNIVERSITY

— Patan, Gujarat —

Pre - Ph.D. Course Work Paper

1. RESEARCH METHODOLOGY
2. QUANTITATIVE METHOD
3. COMPUTER APPLICATION
4. REVIEWING OF PUBLISHED RESEARCH IN THE RELEVANT FIELD
5. (a) RESEARCH AND PUBLICATION ETHICS (RPE) - I
(b) RESEARCH AND PUBLICATION ETHICS (RPE) - II

SYLLABUS

Paper – 1 Research Methodology

UNIT - I

Introduction: Definition of Research, Qualities of Researcher, Components of Research Problem, Various Steps in Scientific Research, Types of Research; Hypotheses, Research Purposes - Research Design - Survey Research - Case Study Research.

UNIT-II

Data Collection: -Sources of Data: Primary Data, Secondary Data ; Procedure Questionnaire, Sampling Merits and Demerits – Experiments , Kinds , Procedure ; Control Observation : Merits , Demerits , Kinds , Procedure , Sampling Errors : Type - I Error and Type – II Error.

UNIT-III

Statistical Analysis: Introduction to Statistics - Probability Theories, Conditional Probability, Poisson Distribution, Binomial Distribution and Properties of Normal Distributions, Point and Interval Estimates of Means and Proportions, Hypothesis Tests, One Sample Test , Two Sample Tests , Chi-Square Test, Association of Attributes, t-Test , f-Test, z-Test, Standard deviation , Co-efficient of variations, Index Number, Time Series Analysis, Decision Tree.

UNIT -IV

Statistical Application: Correlation and Regression Analysis , Analysis of Variance, Completely Randomized Design, Randomized Complete block Design, Latin Square Design , Partial and Multiple Correlation, Discriminate Analysis , Cluster Analysis, Factor Analysis and Conjoint Analysis , Multifactor Evaluation, Two-factor Evaluation Approaches.

UNIT - V

Research Reports: Structure and Components of Research Report, Types of Report, Good Research Report, Pictures and Graphs, Introduction to SPSS.

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

Paper- 2nd Computer Application

UNIT- 1

- Introduction : Basis of Computer and types of Computer, Classification of computers, computer memory, types of software, application of system software"s, 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 :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, 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: 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 in research INFLIBNET, Use of Internet, sights (DOAJ), Use of E Journals, Use of E- library, use of EBSCO HOST ,online database of Academic Libraries.

References :

1. Introduction to computer and its applications : Dr.k. Dhanasekaran , ManikandanPalanisamy
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.

Paper – 3rd Quantitative Method

- Meaning and definition of quantitative method
- Arranging data to convey meaning - Tables, Graphs and Frequency Distribution
- Measures of Central Tendency and Dispersion
- Simple and Multiple regression and correlation
- Association of Attributes
- Probability - probability Distributions, Binomial, Poisson and Normal
- Linear Programming - Formulation and Graphical solution to two variables - Assignment Problems, Transportation problems.
- Queuing Theory - Single Server and Multi-Server
- Markov chains with Simulation Techniques - Monte Carlo Simulation
- Game theory - 2x2 zero sum game with dominance - pure strategy and mixed strategy
- Decision Theory - 5 criteria of decision making
- Chi-square
- Discriminant Analysis
- Factor Analysis
- Cluster Analysis
- Multidimensional Scaling
- „t“ Test
- „f“ Test
- „z“ Test

References :-

1. Research Design : Qualitative , Quantitative and Mixed Methods Approaches , 4 th Edition by John W. Creswell
2. Research Methodology and Quantitative Methods :
 - a. Related Author :NageswaraRao G.
 - b. Related Publisher : Bsp
3. Research Methodology (Methods and Techniques)
By C R Kothari and GauravGarg ; Publication : New age international Publishers



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Paper – 4th Reviewing of Published Research in the Relevant Field

- 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.
- 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.
- Demonstrating the ability to use statistical analysis tools and apply them in decision making activities.
- Demonstrating the ability to create a template document that can be used to complete your research project or thesis

Paper – 5th(A) Research and Publication Ethics (RPE) -I

RPE 01: PHILOSOPHY AND ETHICS (3 hrs.)

Introduction to philosophy: 1. definition, nature and scope, concept, branches 2. Ethics: definition, moral philosophy, nature of moral judgments and reactions

RPE 02: SCIENTIFIC CONDUCT (5hrs.)

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

RPE 03: PUBLICATION ETHICS (7 hrs.)

Publication ethics: 1. definition, introduction and importance

2. Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributor ship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

PRACTICE RPE 04: OPEN ACCESS PUBLISHING(4 hrs.)

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



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(B) Research and Publication Ethics (RPE) -II

RPE 05 PUBLICATION MISCONDUCT (4hrs.):

Group Discussions (2 hrs.) 1. Subject specific ethical issues, FFP, authorship

2. Conflicts of interest

3. Complaints and appeals: examples and fraud from India and abroad. Software tools (2 hrs.)

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

RPE 06: DATABASES AND RESEARCH METRICS (7hrs.)

A. Databases (4 hrs.)

1. Indexing databases

2. Citation databases: Web of Science, Scopus

B. Research Metrics (3 hrs.)

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

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

Course work Plan:-

(A) 1st Phase

1. Research Methodology

2. Computer Application

(B).2nd Phase

1. Quantitative method

2.Reviewing of published research in the relevant field.

(c) 3rd Phase

1. Research and Publication Ethics (RPE) -I

2. Research and Publication Ethics (RPE) -II

The above phase of course work classes shall be completed in a semester. The university shall manage part time or continue/residential classes for course work. Study plan The course work classes are mandatory to attend 3 days in a month alternatively. The assignment should be submitted time to time. Evaluation examination held in end of course time.



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