



Declared as State Private University under section 2f of the UGC act, 1956

MANAV RACHNA UNIVERSITY
(FORMERLY MANAV RACHNA COLLEGE OF ENGINEERING
NAAC ACCREDITED 'A' GRADE INSTITUTION)

L	T	P	O	TOTAL CREDIT UNITS
4	-	-	-	4

COURSE TITLE: RESEARCH METHODOLOGY

Course Code: MCH7 11

Credit Units: 4

Course Objective:

- To familiarize scholars with basic of research and the research process.
- To enable the scholars in conducting research work and formulating research synopsis and reports.
- To familiarize scholars with Statistical packages such as SPSS/EXCEL.
- To impart knowledge for enabling scholars to develop data analytics skills and meaningful interpretation to the data sets so as to solve the Research problem.

Course Outcomes:

Upon successful completion of the course scholars will be able to:

- CO1. Develop understanding on various kinds of research, objectives of doing research, research process and research designs.
- CO2. Have basic knowledge on research techniques
- CO3. Have adequate knowledge on measurement & sampling techniques.
- CO4. Formulating research synopsis and report writing.
- CO5. Work on statistical tools in SPSS.

Course Contents:

Section A

Foundations of Research: Definition, Objectives, Motivation, Utility. Concept of theory empiricism, deductive and inductive theory, Characteristics of scientific method, Understanding the language of research – Concept, Construct, Definition, Variable.

Paradigm of Research: Logical positivity, Social Construction & critical perspective. Issues of subjectivity and objectivity.

Research Process, Research Strategies, Planning a research project and formulating research questions, Problem Identification, Research Objectives and Research Ethics, Hypothesis. Reviewing and evaluating the existing literature.

Section B

Research Designs: Features of a good research design; Exploratory Research Design: concept, and uses, Descriptive Research Designs: concept, types and uses, Experimental Design, Types of Experimental Research Designs: Pre-experimental Designs, True Experimental Designs and Quasi-experimental Designs.

Concept of Independent & Dependent variables. Validity and Reliability, Improving the Internal and External reliability.

Designing a Qualitative study: Subjectivity, Objectivity, reflexivity & Triangulation.

Section C

Measurement and Sampling

Measurement: Concept of measurement, Scale Measurement, The Nature of Scale Measurement, Properties of Scale Measurements, Four Basic Levels of Scales - Nominal Scales, Ordinal Scales, Interval Scales, Ratio Scales. Questionnaire Design and Issues.

Sampling: Concepts of Statistical Population, Sampling Frame, Sampling Error, Sample Size, Non Response. Characteristics of a good sample, Probability Sample - Simple Random Sample, Systematic Sample, Stratified Random Sample & Multi-stage sampling. Determining size of the sample; non probability sampling techniques and types.

Section D

Review of Literature: Why and How, How to present review in the thesis.

SPSS: Uses of SPSS, application of various statistical tools in SPSS, results interpretation.

Report/ Thesis writing: Layout of a Research Paper, Impact factor of Journals. Abstract, Executive Summary, Dissertation, Research Paper, Working Paper, Conceptual Framework, Indexing, Referencing, Report Writing.

References:

- Gray, David E. (2004). *Doing research in the real world*. London, UK: Sage Publications.
- Galliers R. (1992). *Information systems research: Issues, methods, and practical guidelines*. Blackwell Scientific Publications, Oxford.
- Lee A.S., Liebenau J., DeGross, J.I. (1997). *Information Systems and Qualitative Research*. Chapman and Hall, London.
- Merges R. P., Menell P. S., Lemley M. A. (2012). *Intellectual Property in the New Technological Age*. (6th ed.) Aspen Publishers.
- Turabian K.L. (2007). *A manual for writers of research papers, theses, and dissertations*. Chicago, IL: University of Chicago Press.
- Kothari C.R. (2004). *Research Methodology: Methods and Techniques*. New Age International (P) Limited.