

**SEMESTER –I**  
**GENERIC ELECTIVE**  
**RESEARCH METHODOLOGY**  
**THEORY**

**Programme: M.Sc.**  
**Course Code: P20/CHE/GE /101**  
**Type of course: GE – 1**  
**No. of credits : 2**

**Max.Hours : 30**  
**Hours/ week: 2**  
**Max.Marks: 50**

**COURSE OBJECTIVES**

- Understand some basic concepts of research and its methodologies
- Identify appropriate research topics • select and define appropriate research problem and parameters • prepare a project proposal (to undertake a project)
- Organize and conduct research (advanced project) in a more appropriate manner
- Write a research report and thesis
- Write a research proposal

**COURSE OUTCOMES**

- CO1:** Develop understanding on various kinds of research, objectives of doing research, research process, research designs and sampling.
- CO2:** Have basic knowledge on qualitative research techniques, research report and thesis
- CO3.:** Have basic awareness of datacollection methods, analysis-and hypothesis testing Procedures.
- CO4:** Apply intellectual property law principles (including copyright, patents, designs and trademarks) to real problems and analyze the social impact of intellectual property law and policy.

**MODULE 1: CONCEPT OF RESEARCH AND RESEARCH DESIGN** (8 Hrs)

Meaning and importance of Research-Types of Research- Descriptive Vs. Analytical, Applied Vs. Fundamental, Quantitative Vs. Qualitative, Conceptual Vs. Empirical, Selection and Formulation of Research.

Research Design (RD): Meaning of RD-Need of RD-Features of good RD-Important concepts relating to RD: Dependent-Independent variables-Extraneous variables-Control Confounded relationship-Research hypothesis-.

**MODULE 2: DATA COLLECTION AND ORGANIZATION** (8 Hrs)

Population-Sample-Types, Types of Data: Primary and Secondary Data, Methods of Data Collection: Observation method - Interview method - Personal & Group interviews - Case study method - Experimental method - Projective techniques. Construction and adaptation of instruments, administration of questions and tests. Graphical representation Discussion and Interpretation of results- Testing of Hypothesis:

**MODULE 3: REPORT WRITING** (7 Hrs)

Significance of the Report writing Different steps in writing report: bibliography, plagiarism, citation, acknowledgements. Layout of research report Criteria for the evaluation of the Research Report

**MODULE 4: INTELLECTUAL PROPERTY RIGHTS** (7 Hrs)

Introduction to Intellectual Property Rights, The Patent's act 1970, Protectable Subject Matter- patentable invention, Procedure for Obtaining patent, Provisional And Complete Specifications, Rights conferred on a Patentee, Transfer of Patent, Revocation and surrender of Patents. Infringement of patents, Action for Infringement, Patent Agents, Patent in Computer Programs, Patent Protection for Microorganisms. Brief Discussion on Case Law on Patents.

**Reference Books :-**

- 1.Kothari C.R. (2014) Research Methodology Methods & Techniques, New age international publisher.
- 2.Ghose, C., and Singh, M. Research Methodology.
- 3.Wilson J. (2010) Essential of Research Methods, SAGE Publication.
4. Chawla D. &Sondhi N. Research Methodology Concepts and Cases, S. Chand & Company Ltd.
- 5.Bouchoux, D. E. Intellectual Property: The Law of Trademarks, Copyrights, Patents, and Trade Secrets

**SEMESTER -I**  
**RESEARCH METHODOLOGY**  
**(Generic Elective )**  
**THEORYMODEL QUESTION PAPER**

**Course Code:P20/CHE/GE /101**  
**Credits:2**

**Max Time: 1 Hr**  
**Max marks: 30**

**Answer any FOUR**

**4 x 7½ = 30 M**

1. Explain the given terms (CO1)
  - a) QUASI experimental design
  - b) Variables and types of variables with examples
  - c) Qualitative and quantitative research
  
2. Discuss briefly about the following.(CO1)
  - a) Bibliography
  - b) Plagiarism
  
3. Write about different graphical methods of representation of data collection methods (CO2)
  
4. Explain the steps involved in research report writing.(CO3)
  
5. Write a short note on the following(CO2)
  - a) Questionnaire method
  - b) Case study method
  - c) Survey methods
  
6. What is Patent and steps involved in drafting patent in brief?(CO4)