

**UNIVERSITY OF RAJASTHAN, JAIPUR**  
**UNIRAJ PAT Syllabus**  
**Research Methodology**

**Faculty of Science**

(Common for Botany, Chemistry, Geography, Geology, Home Science, Mathematics, Physics, Psychology, Statistics, Zoology, Indira Gandhi Centre for Human, Ecology, Environmental and Population Studies, Computer Science)

**Section – A**


- ❖ Evolution of Scientific enquiry, Scientific Research: Definition, characteristics, types, need of research, Meaning and importance of Research, Objectives of Research, Motivation in Research
- ❖ Research methods: Scientific method, Deductive, Inductive approach
- ❖ Types of research: Pure research, applied research, Exploratory Research, Descriptive research, Diagnostic research, Quantitative and Qualitative research
- ❖ Research Process, Criteria of good Research, Research Formulation, Defining and formulating the research problem
- ❖ Reasoning and analytical abilities, Ethics in conducting research

**Section – B**

- ❖ Research Process – Research Problem, Hypothesis and Variables.
- ❖ Sampling – Probability and Non Probability techniques of sampling.
- ❖ Instruments, measurements and scales of data collection
- ❖ Methods of data collection: Questionnaire, interview technique, observation, case study, field study, Experimental methods.
- ❖ Data Presentation – Graphical representation of the data and tabular presentation of the data i.e. Bar-chart, Histogram, Pie-chart, Table-chart & Line-chart.

**Section – C**

- ❖ Definition & explanation regarding terminology of research journal, science magazine, monograph books, reports, reference book, text book, impact factor, Plagiarism.
- ❖ Type of scientific documents: Research paper, review article, Project report.
- ❖ Information and Communication Technology (ICT): ICT: General observation and terminology, Basics of Internet, Internet, E-mail, Audio & Video-conferencing.
- ❖ Communication skills related to report – Report writing & referencing (APA style).
- ❖ Project financing institution – ICSSR, ICAR, CSIR, DST, DBT

  
**Dean**  
**Faculty of Science**  
**University of Rajasthan, Jaipur**