



RRM001 - RESEARCH METHODOLOGY

Regulation 2015

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Aim: The aim of this paper is to develop research skills among scholars and enable them to carry out research in the concerned branch of subject.

- Objectives:**
- To give an advanced exposure to the students about research
 - To develop acquaintance with intensive techniques and skills of research process
 - To familiarize the art and style of writing a research report
 - To acquire the skills of ICT tools for research
 - To acquire the knowledge of the recent developments in research protection internationally

Unit I: Introduction and Literature Survey

Objectives, motivation, principles of innovation, approaches and significance of research methods versus methodology. Research process: Qualitative and quantitative methods. Methods of literature survey - library, internet and e-resources - availability of literature and data bases on topic of research.

Unit II: Selection of research problem and report writing

Defining research problem, necessity of defining the problem, selecting a problem, study on the societal benefits, social importance, impact on local and global issues.

Significance of report writing, steps in writing reports, layout of research report, types of report, oral presentation, mechanics of writing research report, precautions of writing research report. **Ethics in research.**

Unit III: Data Analysis

Precision and accuracy – Determinate and random errors - Distribution of random errors – Normal Distribution error – Statistical treatment of finite samples – T-test and F-test – Criteria for rejection of an observation – Q-test – Significant figures and computation rules – Data plotting – Least square analysis. SPSS with interpretation – Significance of correlation coefficient – Factor analysis – Path analysis.

Unit IV: Computer Applications

Basics of Internet services – Various sources of abstracts, articles and papers, browsing and downloading - TOC registration, online journals – e-books, courseware and technical reports – TIFF - Different file formats like DOC, PDS, PS, HTML – Conversion of one file format to another – Use of Latex, MS office suite – Word, Excel, Power point and access for scientific and other applications – Free and Open Source Software (FOSS) and e-learning materials – AMOS – Practicum (5 hours in ICT skills pertinent to research).

Unit V: IPR and other Issues

TRIPS – Indian WTO patent laws, patent cooperation treaty convention, patenting, patent and IPR related agencies in India and abroad. Format of research proposals (UGC, CSIR), Funding agencies for research.

Reference:

1. C.R.Kothari, Research Methodology: Methods and Techniques, New Age International Publisher (2005).
2. N.Gurumani, Research Methodology for Biological Science, MJP Publishers, Chennai (2006).
3. W.L.Cochan, “Statistical Methods”, Oxford and IBH Publication, New Delhi (1976).
4. Anderson, Theses and Assignment writing, Prentice Hall (1998).
5. Cresswell, Research Methodology, Sage Publications.