

Rani Durgavati Vishwavidyalaya, Jabalpur
Department of Mathematics & Computer Science

Syllabus- Ph.D. Course Work/ M.Phil. Computer Science

IST SEMESTER 2016-17 onwards

Paper-I: Research Methodology

5 Credits/
Max. Marks: 100
Min Pass Marks: 50

UNIT - I

Scientific Process: Meaning and Definition, a brief history of scientific process.

Introduction of Research Methodology: Meaning of research, objectives of research, types of research, significance of research, problems encountered by researchers in India.

Research Problem: Definition, necessity and techniques of defining research problem. Formulation of research problem. Objectives of research problem.

Research Design: Meaning, need and features of good research design. Types of Research Designs, Basic Principles of Experimental Designs. Design of experiments.

UNIT - II

Sampling Techniques: Census and Sample surveys, characteristics of good sample design Different Types of Sampling Technique Simple Random, Stratified and Systematic sampling.

UNIT - III

Data Collection: Primary and secondary data. Methods of collecting primary and secondary data. Various of measures of characterization of data, Distributions.

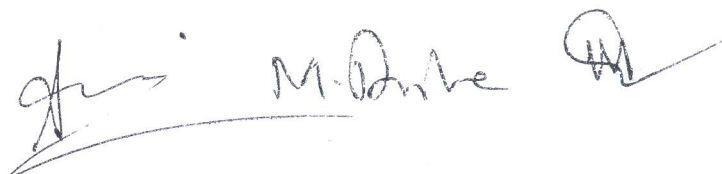
UNIT - IV

Testing of Hypothesis: Definition, elements of testing of hypothesis- simple & compound hypothesis, null & alternate hypothesis, degrees of freedom, level of significance, errors of two kinds, Parametric tests- t, F, Z Chi-square etc. and non-parametric tests- Run, Median, Mann Whitney etc. for testing of hypothesis, Limitations of tests of hypothesis.

UNIT - V

Simulation and Modeling: Definition, Computer simulation and its need, Systems, Models- Types of models, Simulation languages.

Paper Writing and Report Generation: Basic concepts of paper writing and report generation, review of literature, Concepts of Bibliography and References, significance of report writing, steps of report writing, Types of Research reports, Methods of presentation of report.


M. D. Dube

References:

1. Montgomery, Douglas C. (2007), 5/e, Design and Analysis of Experiments, (Wiley India)
2. Montgomery, Douglas C. & Runger, George C. (2007), 3/e, Applied Statistics & Probability for Engineers (Wiley India)
3. Kothari C.K. (2004), 2/e, Research: Methodology - Methods and Techniques (New Age International, New Delhi)
4. Krishnaswamy, K.N., Sivakumar, Appa Iyer and Mathiranjani M. (2006), Management Research Methodology; Integration of Principles, Methods and Techniques (Pearson Education, New Delhi)
5. The complete reference Office Xp – Stephan L. Nelson, Gajulija Kelly (TMH)
6. Basic Computer Science and Communication Engineering – R. Rajaram (SCITECH)
7. Book for Open Office.
8. Payer, T.A., Introduction to simulation, McGraw-Hill, 1982.
9. Gordon, G System Simulation, Prentice Hall, 1978.
10. Rietman, J Computer Simulation Application, Wiley, 1971.
11. Francis Neelamkavil, Computer Simulation and Modeling, John Wiley & Sons.

 M. Dube 