

Ph.D. Course Work Syllabus

Paper 1- Research Methodology

Unit I: Scientific Research:

Research: Definition, Characteristics, Types, need for research, Identification of the problem, assessing the status of the problem, formulating the objectives, preparing design (experimental or otherwise), Intervention, Actual investigation, determining the mode of conduct of the study, Research Ethics.

Unit II: Literature survey:

References, Abstraction of a research paper, all the possible ways of getting oneself abreast of current literature.

Unit III: Documentation and scientific writing:

Results and Conclusions, Preparation of manuscript for Publication of Research paper, Presenting a paper in the scientific seminar, Thesis writing, Structure and Components of Research Report, Types of Report: research papers, thesis, Research Project Reports, Pictures and Graphs, citation styles, writing a review of the paper, Bibliography.

Unit IV: (If required):

Syllabus in this unit can be added according to the specialty / Faculty.

Paper 2- Computer Application

Unit I: Basics of Computer:

Characteristics of Computers, Basic Computer organization, Evolution of Computer, Computer Generation, Introduction to operating system and its type, Computer Hardware and software, Use of word processing, spread sheet, and database software, Plotting of graphs.

Unit II: Internet and its application:

Email, WWW, Web Browsing, Acquiring technical skills, drawing inferences from data.

Unit III: Introduction to research-related software:

Data analysis software-SPSS, Core calculation software, developing utility programs for research, Introduction to C programming.

Paper 3- Statistical Analysis

Unit I: Statistical analysis and fitting of data:

Introduction to Statistics – Probability Theories – Conditional Probability, Poisson Distribution, Binomial Distribution and Properties of Normal Distributions, Estimates of Means and Proportions; Chi-Square Test, Association of Attributes – t-Test Anova- Standard Deviation – Coefficient of variations, Correlation and Regression Analysis.

Unit II: Data analysis:

Mathematical and statistical analysis using software tools like MAT lab, PsiLAB, or freeware tools.

Paper 4- Review of Literature