

Syllabus for Ph.D. Course Work

PAPER CODE	PAPER NAME	MAX. MARKS
RCW101	Research Methodology	100
RCW102-A	Computer Applications	100
RCW102-B	Advanced Computer Application	100
RCW103	Review Writing & Seminar on the Published Research Work in the Relevant Field	50+50=100
	TOTAL MARKS	300

Research Methodology (RCW101)

Unit-I Introduction

Meaning, Concept, Nature, Steps, Types and Characteristics of research.

Scientific Inquiry

Philosophical and Sociological foundations of research

Interdisciplinary approach and its implications in various research area.

Unit-II Methods of Research

Qualitative and quantitative methods of research like Historical, case study, ethnography, exposit facto, documentary and content analysis, survey (Normative, descriptive, evaluative etc.) field and laboratory experimental studies.

Characteristics of methods and their implications in research area.

Unit-III Development of research proposal

Research proposal and its elements

Formulation of research problem-criteria of sources and definition

Development of objectives and characteristics of objectives.

Development hypotheses and applications.

Unit-IV Methods of data collection

Concept of sampling and other concepts related to sampling.

Probability and non-probability samples, their characteristics and implications.

Tools of data collections, their types, attributes and uses.

Redesigning, research tools-like questionnaire, opinionnaire, observation, interviews, scales and tests etc.

Unit-V Methods of data analysis

Analysis of qualitative data based on various tools.

Analysis of quantitative data and its presentation with tables, graphs etc.

Statistical tools and techniques of data analysis-measures of central tendency, dispersion.

Decision making with hypothesis testing through parametric and non-parametric tests. Validity and delimitations of research findings.

Unit-VI Report writing and evaluations

Principles of report writing and guide lines according to style manuals.

Writing and presentation of preliminary, main body and reference section of report.

Picture and Graphs. Introduction to SPSS.

Evaluation of research report.

References:

- 1. Wilkinson & Bhandarkar: Methodology and Techniques of Social Research.**
 - 2. Pauline Vyoung: Scientific Social Surveys and Research.**
 - 3. Panneerselvam,R., Research Methodology, Prentice Hall Of India,New Delhi,2004**
 - 4. Kothari: Research Methodology.**
 - 5. Festinger. L & D. Katz: Research Methods in Behavioral Science.**
 - 6. Sellitz, Et Al: Research Methods in Social Relations.**
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(For Non Computer Background)

Computer Application (RCW102-A)

Unit 1: Basics of Computer

Characteristics of Computers, Evolution of computers, computer memory, computer generations, Basic computer organization; System software, Application software, introduction to operating system, single user, multi-user, multi-tasking single tasking, application of computer for business and research, MS-windows, Linux.

Unit 2: Data Communication and Networks

Data communication concepts, local area network, wide area network, internet, intranet, extranet, website. E-mail, search engines-enterprise E-communication and E-collaboration

Unit 3: Using Internet for Research

The Internet: quick look, what is internet, Use of Internet, major internet services, electronic mail, www, downloading super tools for better computing Internet and the society, Use of E-Journals, Use of E-library, searching the keyword search engines, News and multimedia, governments, archives and statistics.

Unit 4: Introduction to Research Related Software's

Introduction to Data analysis software-SPSS: Definition, objectives and features, data analysis using SPSS: Data entry creating variables, switching to data labels, data analysis: Frequencies, recording into different variables, cross tabulations and layers. Core calculation software, developing utility programs for research, Introduction to C programming.

Unit 5: Research Related Tools and Utilities

MS-Office and its application, File handling in window, various versions of MS-Office, Research publishing tool- MS-Word, Adobe acrobat, Graphics tool- MS-Excel, MS-Power Point: Creating presentations and adding effects, Subject/field specific tools on www.freeware.com



(For the students in Engineering & Computer background)

Advanced Computer Application (RCW102-B)

Unit 1: Basics of Computer Organization

System software compilation and interpretation, phases of compilation process, Lexical analysis, Lex packages on Linux system, Parsing Techniques, code generation and optimization.

Application software, software development models, requirement analysis and specification for software design, Programming techniques and tools, software validation and quality assurance techniques, software maintenances and advance concepts, software management.

Operating system, functions of OS. Multiprogramming, multiprocessing and multitasking, memory management, Concurrent programming. Scheduling, study of Linux operating system.

Unit 2: Data Communication and Networks

Data communication concepts, local area network, wide area network, internet, intranet, extranet, website. E-mail, search engines-enterprise E-communication and E-collaboration

Unit 3: Working with Internet

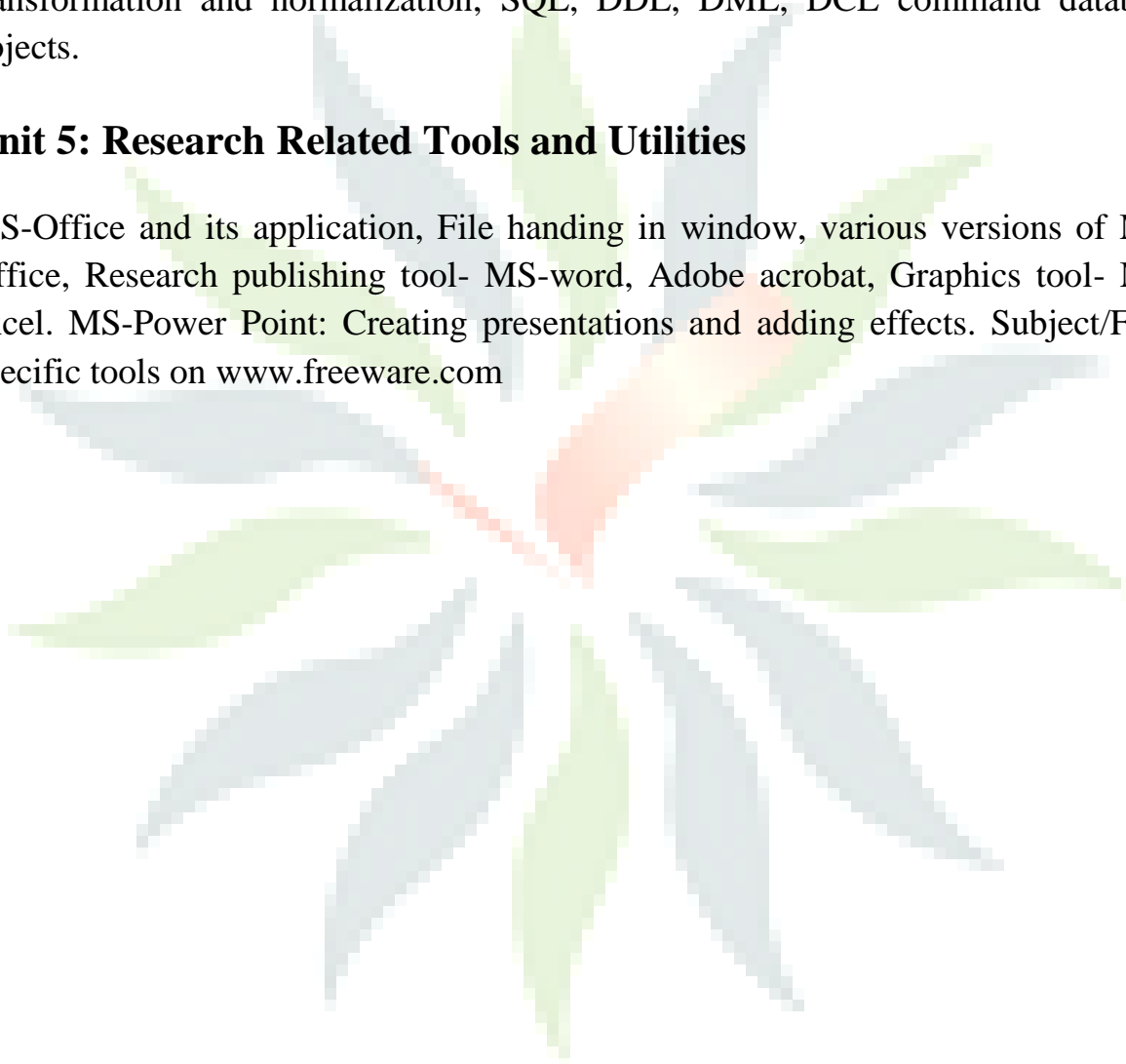
Introduction to internet, INFLIBNET, sights (DOAJ), searching on the internet, Using graphics on internet, E-mail. The use of multimedia on the internet, Security on the internet, Exploring e-mail facilities. Web design, creating web pages, themes and graphics, linking web pages, Navigation and testing, Making the website interactive, Internet and the society, study of search engines, Use of EBSCO HOST online database of Academic Libraries.

Unit 4: Programming Fundamentals

Object oriented programming concepts, Classes, Objects, Installations, Inheritance, Polymorphism and Overloading, Elements of C++ tokens, identifiers, variables and constants, Data types, Operators, Control statements, Function parameter passing. Class and objects, Constructors and destructors, overloading inheritance templates, exception handling Relational database design and SQL : E-R diagrams, transformation and normalization, SQL, DDL, DML, DCL command database objects.

Unit 5: Research Related Tools and Utilities

MS-Office and its application, File handling in window, various versions of MS-Office, Research publishing tool- MS-word, Adobe acrobat, Graphics tool- MS-excel. MS-Power Point: Creating presentations and adding effects. Subject/Field specific tools on www.freeware.com



REVIEW WRITING & SEMINAR ON THE PUBLISHED RESEARCH WORK IN THE RELEVANT FIELD (RCW-103)

Each student will submit a review report on any general topic of subject or area of interest in subject which will carry 50 marks and student will also give a presentation/seminar of the same which will also carry 50 marks.

