THE UNIVERSITY OF BURDWAN
Department of Library and Information Science

Syllabus of Ph.D. Coursework in Library and Information Science
(To be effective from the Year 2020)

Year	Semester	Course Code	Course Title	Credit Value	Marks Distribution
					Total Marks
1st (Course Work)	Sem I	PHDCW-101	Research Methodology	4	50
		PHDCW-102	Digital Library System	4	50
		PHDCW-103	Term Papers & Related Seminar Presentation(s)	2	15+10=25
		CPE-RPE	Research and publication Ethics (RPE)	2	25
		Sub Total		12	150

Year	Semester	Course Code	Course Title	Credit Value	Marks Distribution
					Total Marks
1ˢᵗ	Sem I	PHDCW-101	Research Methodology	4	50

Course Code : PHDCW-101
Course Title : Research Methodology

Unit I: Research: Meaning, Design and Methods

Meaning, Need, Types.
Problem formulation, Hypothesis
Designing Research Proposal
Methods - Scientific, Experimental, Historical, Descriptive, Survey
Operations Research in LIS and Projective Techniques

Unit II: Research Data: Collection, Organisation, Analysis and Interpretation

Data Collection Tools and Techniques: Sampling, Observation, Questionnaire, Interview, Schedule
Data Organisation: Tabulation, Graphical representation
Data Analysis and Interpretation: Statistical analysis (Including Frequency Distribution, Measures of Central Tendency, Dispersion, Standard Deviation, Correlation, Regression, Time-Series analysis)
Measurement and Scaling Techniques
Index Number

Unit III: Research Communication and Trends in LIS Research

Writing Research Report: Structure, Style, Contents, and Citation
Close and Open Access Research Publications
Electronic Theses and Dissertations
Trends in LIS Research – Global
Trends in LIS Research – National

Reading List

1. Busha, Charles A. & Harter, Stephen P.: Research Methods in Librarianship: Techniques and Interpretations. New York: Academic Press, 1980.

2. Egghe, L. & Rousseau, R.: Introduction to Informetrics: Quantitative Methods in Library, Documentation and Information Science. Amsterdam: Elsevier, 1990.

3. Glazier, Jack D. & Hall, Peter M., eds.: Qualitative Research in Information Management. Englewood, CO: Libraries Unlimited, 1992.

4. Gorman, G.E. & Clayton, Peter: Qualitative research for the information professional: a practical handbook. 2nd ed. London: Facet Publishing, 1997.

5. Hafner, Arthur W. Descriptive Statistical Techniques for Librarians. 2nd ed. Chicago: American Library Association, 1997.

6. Hernon, Peter & Richardson, John V., eds.: Microcomputer Software for Performing Statistical Analysis: A Handbook Supporting Library Decision Making. Norwood, NJ: Ablex Publishing Corporation, 1988.

7. Kraft, Donald H. & Boyce, Bert R.: Operations Research for Libraries and Information Agencies: Techniques for the Evaluation of Management Decision Alternatives. San Diego: Academic Press, 1991.

8. Losee, Robert M., Jr. & Worley, Karen A.: Research and Evaluation for Information Professionals. San Diego: Academic Press, 1993.

9. Lynam, Peter, Slater, Margaret & Walker, Rennie: Research and the Practitioner: Dissemination of Research Results within the Library-Information Profession. London: Aslib, 1982.

10. Martyn, John & Lancaster, F. Wilfrid: Investigative Methods in Library and Information Science: An Introduction. Arlington, VA: Information Resources Press, 1981.

11. McClure, Charles R. & Hernon, Peter, eds.: Library and Information Science Research: Perspectives and Strategies for Improvement. Norwood, NJ: Ablex Publishing Corporation, 1991.

12. Mellon, Constance A.: Naturalistic Inquiry for Library Science: Methods and Applications for Research, Evaluation, and Teaching. New York: Greenwood, 1990.

13. Moore, Nick: How to Do Research. 2nd ed. London: Library Association,

14. Powell, Ronald R.: Basic Research Methods for Librarians. 3rd ed. Greenwich, CT: Ablex Publishing Corporation, 1997.

15. Prytherch, Ray: Information Management and Library Science: A Guide to the Literature. Brookfield, VT: Gower, 1994.

16. Slater, Margaret, ed.: Research Methods in Library and Information Studies. London: Library Association, 1990.

17. Stephen, Peter & Hornby, Susan: Simple Statistics for Library and Information Professionals. London: Library Association, 1995.

Year	Semester	Course Code	Course Title	Credit Value	Marks Distribution
					Total Marks
1st	Sem I	PHDCW-102	Digital Library System	4	50

Course Code : PHDCW-102
Course Title :Digital Library System

Unit I: Historical and Theoretical Foundations

Nature, concepts, scopes, definitions and types of digital libraries

History of digital library initiatives, institutional repositories and open knowledge movement

Social, legal and economic issues

Digital information resources and Digital archiving

Digital information resources – features, types and bitstream formats

Analog (traditional) vs. Digital information resources

Digital archiving – features, advantages and applications

Unit II: Organisation of Digital Objects

Metadata – generic and domain-specific schemas (Including DCMES, GILS, AGLS, ONIX, TEI, IEEE LOM, GEMS, SeamlessUK etc.)

Metadata encoding –

Markup languages – HTML, XHTML, XML

Encoding standards – W3C and IETF standards

Resource Description Framework (RDF)

Resource identifiers (Naming services) – URN, URI, CNRI's handle, PURL, DOI

Subject access systems – standards and tools

Crosswalks and Interoperability

Crosswalks of metadata schemas

Interoperability – OAI/PMH, Z 39.50, ZING and SRW; OAI/PMH Vs. Z 39.50

Design and Development of Digital Library System

Unit III: Architecture, Information Retrieval and User interfaces

Web architecture

Distributed information system (Internet) – architecture, standards, protocols and tools

World Wide Web – features, services, standards, protocols, tools and services

Web technologies and access systems

Common Gateway Interface (CGI) – architecture and programming tools (PERL, PHP, JSP)

Web databases

Web-enabled DBMS – Relational and Bibliographic DBMS

Technologies, standards and tools

Products and services

Architecture of digital library systems

Design issues

Design principles

Models

Information retrieval in digital library systems

Information retrieval models for digital library systems

Use of vocabulary control devices

Text retrieval tools – types, features and comparisons (Lucene, MGPP, HTDig, SWISH-e)

Search techniques – Boolean, relational and positional operators (including Post Boolean development)

Study of information retrieval features of selected digital library systems

User interfaces of digital library systems

Information seeking behaviour - models

Information access framework

Design issues, principles and standards

Study of user interfaces of selected digital library systems

Multilingual information retrieval system

Reading List

1. Argerich, K.: Professional PHP programming. Mumbai: SPD/Apress Reprints, 2004.

2. Arms, W.: Digital libraries. Cambridge MA: MIT Press, 2000.

3. Bayross, I.: Using Apache, MySQL, PHP and PERL on Linux. New Delhi: BPB Publications, 2000.

4. Bayross, I.: Using MySQL on Linux. New Delhi: BPB Publications, 2004.

5. Bhatnagar, S.: Information and communication technology in development: cases from India. New Delhi: Sage, 2002.

6. Birbeck, M. and Duckett, J.: Professional XML (2 nd ed.). Mumbai: Shrof Publishers, 2004.

7. Borgman, G.L.: From Gutenberg to the global information infrastructure: access to information in networked world. Cambridge MA: MIT Press, 2000.

8. Briggs, A.: The definitive guide to user mode Linux. Mumbai: Shrof Publishers, 2005.

9. Caplan, Priscilla: Metadata fundamentals for all librarians. Chicago: ALA, 2000.

10. Chowdhury, G.G. & Chowdhury, S.: Introduction to digital libraries. London: Facet Publishing, 2003.

11. Crawford, W. and Gorman, M.: Future libraries: dreams, madness, and reality. Chicago: ALA, 1995.

12. Deegan, M. & Tanner, S.: Digital futures: strategies for the information age. London: Library Association, 2003.

13. Fabisoff, S.G., & Ely, D.P.: Information and information needs. Washington D.C: US Office of Education, 1974.

14. Gorman, G.E. & Dorner, D.G.: Metadata applications and management. London: Facet Publishing, 2004.

15. Lesk, M.: Practical digital libraries: books, bytes and bucks. San Francisco: Morgan Kaufmann, 1997.

16. Marchionini, G.: Information seeking in electronic environments. Cambridge: Cambridge University Press, 1995.

17. Meadow, C.T., Boyce, B.R. & Kraft, D.H.: Text information retrieval systems (2 nd ed.). San Diego: Academic Press, 2000.

18. Myers, D.: Professional Java XML programming with servlet and JSP. Mumbai: Shrof Publishers, 2004.

19. Raymond, E. S.: The cathedral and the bazaar: musings on Linux and open source by an accidental revolutionary (Rev. ed). Cambridge: O'reilly and Associates Inc, 2001.

20. Unicode Consortium: The Unicode standard, version 4.1. Reading: Addision Wesley, 2005.

21. Witten, I.H. & Bainbridge, D.: How to build a digital library. San Francisco: Morgan Kaufmann, 2003.

22. Witten, I.H., Moffat, A. & Bell, T.C.: Managing gigabytes: compressing and indexing documents and images (2 nd ed.). San Francisco: Morgan Kaufmann, 2003.

Year	Semester	Course Code	Course Title	Credit Value	Marks Distribution
					Total Marks
1st	Sem I	PHDCW-103	Term Papers & Related Seminar Presentation(s)	2	15+10 = 25

Course Code : PHDCW-103
Course Title : Term Papers & Related Seminar Presentation(s)

Course Code : CPE-RPE
Course Title : Research and publication Ethics (RPE)

Year	Semester	Course Code	Course Title	Credit Value	Marks Distribution
					Total Marks
1st	Sem I	CPE-RPE	Research and publication Ethics (RPE)	2	25

Course structure
- The course comprises of six modules listed in table below. Each module has 4-5 units.

Modules	Unit title	Teaching hours
Theory		
RPE 01	Philosophy of Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publications Ethics	7
Practice		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Databases and Research Metrics	7
Total		**30**

Course Code : CPE-RPE
Course Title : Research and publication Ethics (RPE)

Theory

- **RPE 01: PHILOSOPHY OF ETHICS (3 hr)**
  1. Introduction of philosophy: Definition, Nature and scope, concept, branches
  2. Ethics: Definition, moral philosophy, nature f moral judgements and reactions
- **RPE 02: SCIENTIFIC CONDUCT (5 hr)**
  1. Ethics with respect to science and research
  2. Intellectual honesty and research integrity
  3. Scientific misconducts: Falsification an, Fabrication, and Plagiarism (FFP)
  4. Redundant publications: Duplicate and overlapping publications, Salami Slicing
  5. Selective reporting and mispresentation of data
- **RPE 03: PUBLICATION ETHICS (7 hr)**
  1. Publication ethics: Definition, introduction and importance
  2. Best practices/standards setting initiatives and guidelines: COPE, WAME, etc.
  3. Conflicts of interest
  4. Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice-versa, types
  5. Violation of publication ethics, authorship and contributorship
  6. Identification of publication misconduct, complaints and appeals
  7. Predatory publishers and journals

Practice

- **RPE 04; OPEN ACCESS PUBLISHING (4 hr)**
  1. Open access publications and initiatives
  2. SHERPA/RoMEO online resource to check publisher copyright & self-achieving policies
  3. Software tool to identify predatory publications developed by SPPU
  4. Journal finder/journal suggestion tool viz., ZAME, Elsevier journal Finder, Springer journal suggester, etc.
- **RPE 05: PUBLICATION MISCONDUCT (4 hr)**

A. Group discussion (2 hr)
  1. Subject specific ethical issues, FFP, authorship
  2. Conflicts of interest
  3. Complaints and appeals: Examples and fraud from India and abroad

B. Software tools (2 hr)
- Use of plagiarism software like Turnitin, Urkund and other open source software tools

RPE 06: DATABASES AND RESEARCH METRICS

A. Databases (4 hr)
  1. Indexing databases
  2. Citation databases: Web of science, Scopus, etc.

B. research Metrics (3 hr)
  1. Impact Factor of journal as per journal Citation report, SNIP, SJR, IPP, Cite Score
  2. Metrics: h-index, g index, i10 index, altmetrics

Reading List

Suggested Readings:
1. Adil E. Shamoo, and David B. Resnik, Responsible Conduct of Research, Oxford University Press
2. Gary Comstock, Research Ethics: A Philosophical Guide to the Responsible Conduct of Research, Cambridge University Press
3. Robin Levin Penslar, Research Ethics: Cases and Materials, Indiana University Press
4. Tony Mayer, and Nicholas H. Steneck, Promoting Research Integrity in a Global Environment, World Scientific Publishing
5. Relevant research papers and articles from reputed Journals