

**BLDE (Deemed to be University)**  
**School of Applied Science and Technology**  
**PhD Syllabus**

**Subject: Library and Information Science**

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**Unit – I**

1. Data, Information, Knowledge, and Wisdom.
2. Information Life Cycle - Generation, Collection, Storage, and Dissemination.
3. Role of Information in Planning, Management, Socio-economic, Cultural, Educational, and Technological Development.
4. Information Science - Relationship with other subjects, Information Society, and Knowledge Society.
5. Communication – Concept, Types, Theories, Models, Channels, and Barriers; Trends in Scholarly Communication.
6. Information Industry - Generators, Providers, and Intermediaries.
7. IPR and Legal Issues - Categories, Conventions, Treaties, Laws.
8. Plagiarism: Concept and Types.
9. Right to Information Act (RTI); Information Technology Act.
10. National Knowledge Commission; National Mission on Libraries.

**Unit – II**

1. Historical Development of Libraries in India; Committees and Commissions on Libraries in India.
2. Types of Libraries – Academic, Public, Special, and National.
3. Library Legislation and Library Acts in Indian States; The Press and Registration of Books Act; The Delivery of Books and Newspapers (Public Libraries) Act.
4. Laws of Library Science.

5. Library and Information Science Profession - Librarianship as a Profession, Professional Skills and Competences; Professional Ethics.
6. Professional Associations - National – ILA, IASLIC, IATLIS; International – IFLA, ALA, CILIP, ASLIB, SLA; Role of UGC, RRRLF, and UNESCO in Promotion and Development of Libraries.
7. Library and Information Science Education in India.
8. Library Public Relations and Extension Activities.
9. Type of Users - User Studies, User Education.
10. Information Literacy - Areas, Standards, Types, and Models; Trends in Information Literacy.

### **Unit – III**

1. Information Sources - Nature, Characteristics, Types, and Formats.
2. Sources of Information - Primary, Secondary, and Tertiary; Documentary and Non-Documentary.
3. Primary Information Sources (Print and Electronic) - Journals, Conference Proceedings, Patents, Standards, Theses & Dissertations, Trade Literature.
4. Secondary Information Sources (Print and Electronic) - Dictionaries, Encyclopedias, Bibliographies, Indexing & Abstracting, Statistical Sources, Handbooks, and Manuals.
5. Tertiary Information Sources (Print and Electronic) - Directories, Year Books, Almanacs.
6. Reference Sources - Bibliographical, Biographical, Educational, Language, and Geographical.
7. Electronic Information Resources - Subject Gateways, Web Portals, Bulletin Boards, Discussion Forums/Groups.
8. Databases: Bibliographic, Numeric, Full-text, Multimedia; Open Access Databases.
9. Institutional and Human Resources.
10. Evaluation of Reference Sources and Web Resources.

## **Unit – IV**

1. Community Information Services.
2. Reference Service – Concept and Types; Referral Services.
3. Alerting Services - CAS, SDI, Inter-Library Loan, and Document Delivery.
4. Mobile-based Library Services and Tools – Mobile OPAC, Mobile Databases, Mobile Library Website, Library Apps, Mobile Library Instructions, Augmented Reality, SMS Alerts, Geo-Location, Reference Enquiry.
5. Web 2.0 and 3.0 - Library 2.0 - Concept, Characteristics, Components; Instant Messaging, RSS Feeds, Podcasts, Vodcasts, Ask a Librarian.
6. Collaborative Services - Social Networks, Academic Social Networks, Social Tagging, Social Bookmarking.
7. Web-Scale Discovery Services.
8. National Information Systems and Networks: NISCAIR, DESIDOC, SENDOC, ENVIS, INFLIBNET, DELNET, NICNET, ERNET, National Knowledge Network (NKN), Biotechnology Information System Network.
9. International Information Systems and Networks: INIS, AGRIS, INSPEC, MEDLARS, BIOSIS, ERIC, Patent Information System (PIS), Biotechnology Information System (BIS).
10. Library Resource Sharing and Library Consortia – National and International.

## **Unit – V**

1. Universe of Knowledge - Nature and Attributes; Modes of Formation of Subjects.
2. Knowledge Organisation - Classification – Theories, Canons, and Principles; Simple Knowledge Organisation System (SKOS), Taxonomies, Folksonomy, Trends in Classification.
3. Mapping of Subjects in Library Classification Schemes – DDC, UDC, and CC.

4. Knowledge Organisation: Cataloguing - Cannons and Principles; Centralized and Co-operative Catalogue; Library Cataloguing Codes: CCC and AACR-II.
5. Standards of Bibliographic Record Formats and Description – ISBD, MARC 21, CCF, RDA, FRBR, Bibframe.
6. Standards for Bibliographic Information Interchange & Communication – ISO 2709, Z39.50, Z39.71.
7. Metadata Standards: Dublin Core; MARC21, METS, MODES, EAD.
8. Indexing Systems and Techniques: Assigned - Pre-coordinate; Post-Coordinate; Derived - Title-based; Vocabulary Control.
9. Abstracting – Types and Guidelines.
10. Information Retrieval System – Features, Components, Models, and Evaluation.

## **Unit – VI**

1. Management - Principles, Functions, and Schools of Thought.
2. Library and Information Centers Management - Book Selection Tools and Principles; Library Acquisition, Technical Processing, Circulation, Serial Control, Maintenance, and Stock Verification; Preservation and Conservation; Hazards and Control Measures of Library Materials.
3. Human Resource Management – Planning, Job Analysis, Job Description, Job Evaluation, Selection, Recruitment, Motivation, Training and Development, Performance Appraisal; Staff Manual.
4. Financial Management in Libraries - Sources of Finance, Resource Mobilisation, Budgeting Methods; Cost Effective and Cost Benefit Analysis, Annual Reports & Statistics; Library Authority and Committee.
5. Project Management - SWOT, PEST, PERT/CPM.
6. Total Quality Management (TQM) - Concepts, Principles, and Techniques, Six Sigma; Evaluation of Services of Libraries and Information Centers.
7. Library Building, Furniture, and Equipment; Green Library Building; Information Commons; Makers Space; Security and Safety.

8. Management Information System (MIS), MBO, Change Management, Disaster Management, Crisis Management.
9. Knowledge Management – Principles, Tools, Components, and Architecture.
10. Marketing of Library Products and Services – Plan, Research, Strategies, Mix, Segmentation, Pricing, and Advertising; Management Consultancy.

## **Unit – VII**

1. Computer Technology - Character Representation (ASCII, ISCII, Unicode); Computer Hardware, Software; Storage Devices; Input and Output Devices.
2. Types of Software - System Software, Application Software.
3. Programming Languages – Object-Oriented, Procedural, High-Level, Scripting; Web Languages.
4. Telecommunication - Transmission Channels, Mode, and Media, ISDN, PSDN, Multiplexing, Modulation, Standards, and Protocols.
5. Wireless Communication – Media, Wi-fi, Li-fi, Satellite Communication, Mobile Communication.
6. Computer Networks - Topologies, Types of Networks – LAN, MAN, WAN.
7. Internet - Web Browsers, WWW, E-mail; Search Engines, Meta and Entity Search Engines.
8. Internet Protocols and Standards – HTTP, SHTTP, FTP, SMTP, TCP/IP, URI, URL.
9. Hypertext, Hypermedia, Multimedia, Video Conferencing, Virtual Reality, Augmented Technologies.
10. Data Security, Network Security, Firewalls, Cryptographic Techniques, Anti-virus Software, Anti-spyware, Intrusion Detection System.

## **Unit – VIII**

1. Library Automation – Areas, Planning, Selection of Hardware and Software, Implementation, and Evaluation; Standards for Library Automation.
2. Barcode, RFID, QR Code, Biometric, Smartcard: Features and Applications.
3. Digitization – Planning, Selection of Materials, Hardware, Software, Process, Issues.
4. Digital Library: Genesis, Characteristics, Types, Architecture; Standards, Formats, and Protocols, DOI.
5. Digital Preservation - Need, Purpose, Standards, Methods, Techniques, Projects (National and International).
6. Digital Library Initiatives – National and International.
7. Institutional Repositories - Need, Purpose, Types, and Tools; Institutional Repositories in India; ROAR, DOAR, SHARPA-ROMIO.
8. Content Management Systems – Architecture, Data Integration, CMS Software – Selection, Implementation, and Evaluation.
9. Application of Artificial Intelligence, Expert Systems, and Robotics in Libraries; Social Mobile Analytics Cloud (SMAC); Cloud Computing.
10. Ontology – Tools (RDF, RDFS, Protégé); Semantic Web, Linked Data, Big Data, Data Mining, Data Harvesting.

## **Unit – IX**

1. Research - Concept, Purpose, Functions, Scope, and Ethics; Types of Research – Basic and Applied, Interdisciplinary, and Multidisciplinary.
2. Research Methods: Historical, Descriptive, Experimental, and Delphi.
3. Research Design - Selection of Research Problem, Review of Literature; Formulation of Research Problem; Hypothesis – Formulation, Types, and Testing; Sampling Techniques.
4. Methods of Data Collection: Questionnaire, Interview, Observation, Library Records, Scales, and Checklist.

5. Data Analysis and Interpretation - Presentation of Data; Statistical Methods/Techniques.
6. Statistical Packages – Spreadsheet, SPSS, Bibexcel, 'R' Statistics.
7. Research Report Writing and Citation Tools – Structure, Style, Contents, Guidelines; Style Manuals; Online Citation Tools; Reference Style Management Tools; Anti-plagiarism Tools; Evaluation of Research Report.
8. Metric Studies in LIS - Bibliometrics, Scientometrics, Webometrics, Altmetrics.
9. Impact Factors – Journal, Institutional, and Authors; h-Index, g-Index, i10 Index.
10. Trends in Library and Information Science Research.

## **Unit – X**

1. Academic Library and Information System.
2. Public Library and Information System.
3. Special Library and Information System.
4. Health Science Library and Information System.
5. Corporate Library and Information System.
6. Agricultural Library and Information System.
7. Engineering and Technological Library and Information System.
8. Archive, Museums, and Oriental Libraries.
9. Community Information System.
10. Information Services and System for Persons with Disability, Children, and Women.