RANI RASHMONI GREEN UNIVERSITY
TARAKESWAR, HOOGHLY

Syllabus for

Integrated B.Lib.I.Sc. - M.Lib.I.Sc. Course

(Under CBCS)

Rani Rasmoni Green University

Syllabus for Integrated B.Lib.I.Sc. - M.Lib.I.Sc. Course (Under CBCS)

Semester	Course Code	Course Title	L(TH)	T(TU)	P(PR)	Total Credit	Marks = Th + Int
I	GE-100	Environmental Studies (General Elective)	4			4	40+10
	MLI-101	Foundations of Library and Information Science I	3			3	40+10
	MLI-102	Information Sources, Systems, and Services	3			3	40+10
	MLI-103	Knowledge Organization – Theory	3			3	40+10
	MLI-194	Knowledge Organization I – Practice			3	3	50
	MLI-105	Management of Libraries and Information Centres-I	2			2	40+10
	MLI-106	Library Automation and Networking- Theory	2			2	40+10
	MLI-107	History of Books and Libraries	2			2	40+10
	MLI-108	Preservation and Conservation of Library Materials	2			2	40+10
II	MLI-201	History of Books and Libraries (CBCS-I)	4			4	40+10
	MLI-202	Foundations of Library and Information Science II	3			3	40+10
	MLI-203	Management of Libraries and Information Centres-II	3			3	40+10
	MLI-204	User Studies and User Education	3			3	40+10
	MLI-205	Resource Description I – Theory & Practice	1		1	2	40+10
	MLI-296	Library Automation and Networking I - Practice			3	3	50
	MLI-207	Information Retrieval I	3			3	50
	MLI-298	Knowledge Organization II Practice			3	3	50
		Total (Semester I + II) (48 Credits)					**850**
III	MLI-301	Information and Communication Process	4			4	40+10
	MLI-302	Information Retrieval II	4			4	40+10
	MLI-303	Quantitative Research Methods	4			4	40+10

	MLI-304	Information and Communication Technology - Theory	4			4	40+10
	MLI-395	Information and Communication Technology I - Practice			4	4	50
	MLI-306	Data Curation, Management & Analysis for Information Professionals	4			4	40+10
	MLI-307	IPR Management	4			4	40+10
	MLI-308	Digital Preservation	4			4	40+10
IV	MLI-401	Research Methodology	4			4	40+10
	MLI-402	Digital Content Management	4			4	40+10
	MLI-403	Social Networking	4			4	40+10
	MLI-494	Library Automation and Networking II - Practice			4	4	
	MLI-405	Open Knowledge System	4			4	40+10
	MLI-406	Information Consolidation and Repackaging	4			4	40+10
	MLI-497	Dissertation ● Research paper or practical project with a report and presentation.			4	4	50
	MLI-498	Internship			4	4	50
		Total (Semester III + IV) (64 Credits)					**800**
		Total Credits (48+64 = 112) (Semester I + II +III +IV) **Total Marks (800 + 800=1600)(Semester I + II & III +IV)**					

Syllabus for Integrated B.Lib.I.Sc. - M.Lib.I.Sc. Course (Under CBCS)
SEMESTER I

101 Foundations of Library and Information Science

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit I: Introduction to LIS Foundations

- Social foundation: Society-Definition, social institutions; Libraries as social institutions: Community building and civic engagement.
- History of libraries/information centres and development of librarianship as a service profession.
- Theories of knowledge and information, Basic laws, including the Five Laws of Library Science – Different interpretations and implications. Some eminent thinkers of libraries.

- Different types of libraries and their roles and functions, with special reference to India: National libraries, Academic libraries, Public libraries, Special libraries and information centres.

Unit II: Fundamentals of Information

- Information: Definition, characteristics, and its role in changing society.
- Universal access to information: Principles and challenges; Freedom of access to information. Information explosion, Universal availability of publications.
- Digital divide, information poverty, and rural access;
- Intellectual property rights - copyright, patents, censorship; Case studies on censorship, book bans, and content restrictions; Privacy and confidentiality in LIS; Ethical dilemmas in information services.
- Information society- evolution and implications; Knowledge Society - characteristics.

Unit III: Library Policy, movement, and development

- UNESCO charter of books, IFLA/UNESCO public library manifesto, and other IFLA/UNESCO guidelines;
- International, and national programmes and policies (NAPLIS, etc), Recommendations of National Knowledge Commission (NKC), India; National Knowledge Network (NKN)
- Resource sharing and networking, Promoting agencies of library and information services National and International levels ;
- Library and Information Policy at the National level;
- Library movement and development in India.
- Role of national and international promoting agencies in the growth and development of libraries and information centres: IFLA, UNESCO, RRRLF, UGC, and NKC.

Unit IV:

- The impact of digital technologies on libraries; Digital libraries and open access; Emerging technologies in LIS (AI, VR, etc.).
- Competencies and skills for LIS professionals, Leadership and management in libraries.
- Libraries in developing countries, International standards, and collaborations, Comparative analysis of library systems.
- Trends and challenges in LIS; Sustainability and innovation in libraries; Preparing for the future of information work.

102 Information Sources, Systems, and Services

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit I: Information Systems and Centres

- Library as an information system; Role of information professionals in service delivery.
- Information Systems and Networking: Meaning, Importance and Structure;
- Structure and Services of International and National Information Systems and Networks like AGRIS, INIS, NISSAT, CALIBNET, INFLIBNET, DELNET, etc.
- Information Centres and Information Analysis Centres: Meaning and Functions;
- Objectives and Services of ASLIB, IFLA, NASSDOC, DESIDOC, SENDOC, DRTC, and NISCAIR.
- Evaluation of Information Systems: Usability testing for information systems, Performance metrics for databases and search tools

Unit II: Reference and Information Sources

- Types and Importance, Documentary Sources: Primary, Secondary, and Tertiary; AV Materials; Print vs. digital sources: Characteristics and uses; Non-documentary Sources: Institutional and Human Sources; Open Access and subscription-based resources;
- E-information Sources: Meaning, Scope, Types and Characteristics;
- Indian Reference Sources with particular reference to the Bengali Language;
- Evaluation of Reference and Information Sources.

Unit III: Information Users

- Users and Non-users: Characteristics; Users in Different Types of Libraries and Information Centres;
- Users' Study: Types and Techniques; Users' Needs: Different Approaches; Information Services for Diverse Populations.
- Designing information literacy programs; Teaching search skills and resource evaluation, Assessing information literacy outcomes
- Reference service evaluation and user satisfaction

Unit IV: Organization of Information

- Abstracting and Abstract: Meaning, Types, and Methodology of preparation of abstract;
- Indexing Language: Controlled Vocabulary, Syntax, and Semantics;
- Subject Indexing: Concepts, purposes, problems, and general principles;
- Assigned and Derived Indexing; Pre and Post Coordinate Indexing: Chain indexing, Uniterm; Keyword Indexing.

Unit V: Reference and Information Services

- Reference, Referral, Documentation, and Information Services: Definition, Need, Characteristics, and Differences; Short-range and long-range Reference Services; Current Awareness Services and SDI Service, Translation Services, Document Delivery Services, Inter Library Loan; Virtual reference services (chat, email, and video).
- Reference Processes: The reference interview: Techniques and best practices; Search Strategies and Techniques: Boolean logic, truncation, and proximity searching; Advanced search techniques for academic databases; Natural language processing and AI in search systems
- AI and chatbots in reference services, Augmented reality and virtual reality in libraries, Blockchain for information management
- Trends and Challenges in Information Services: Privacy and ethics in digital services, Sustainability of digital resources, and Future directions for information services.

103 Knowledge Organization - Theory

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit I: Theoretical Foundations of KO

- Overview of knowledge organization: Concepts and scope, The role of KO in information retrieval and access, Historical perspectives on KO.
- Structure and attributes of the universe of subjects; Subject and discipline: concept, features, and formation; Types of subjects and their modes of formation;

- Isolates and auxiliaries: Common (ACI and PCI) and specials; Facets and Facet Analysis, Speciators and their kinds, Phase relations: levels and kinds/nature.

Unit II: Classification System

- Library classification –need and purpose; Classification schedule and its components. Kinds of schemes – Enumerative, Faceted. Introducing different concepts – Isolate, facet, array, chain, notation, etc.
- Schemes of classification – Introducing different classification schemes, class number, book number, collection number, broken sequence, Relative Index, etc.
- Dewey Decimal Classification (DDC): Structure and application; Universal Decimal Classification (UDC) and other systems; Faceted classification and Colon Classification

Unit III:

- General theory of library classification, canons, postulates, principles, fundamental categories, facet analysis. Three planes of work. Notational system – kinds, qualities, mnemonics, devices, round & levels.

Unit IV: Recent Trends and Future of Library Classification

- Automatic classification - Application of NLP and AI techniques, Projects, and initiatives.
- Classification and Digital resource organization;
- Classification and Ontology;
- Classification and SKOS;
- Web-based classification systems.

194 Knowledge Organization I - Practice

0L+0T+3P= 3 Credits Classes = 90 Marks= 50

Classification of documents by DDC (Latest edition available in the Department), construction of book number in different methods

105 Management of Libraries and Information Centres - I

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Concepts and Principles

- Concept, definition, and scope of library administration;
- Library organization structure, process of structuring, charts (horizontal and vertical);
- General principles of management and their application to the administration of library and information centres;
- Library Management vs. Library Administration, Levels of Library Management
- Functions and principles of scientific management.

Unit 2: Library Housekeeping Operations

- Different sections of libraries and information centres and their functions;
- Library acquisition: Book selection Tools; Book ordering procedure and operation staff manual;
- Collection development policies, procedures, evaluation, and weeding;
- Technical processing of library materials; CIP;
- Serials control;
- Circulation control methods of charging and discharging, renewal and reservation;

Unit 3: Maintenance Work

- Binding of books and periodicals;
- Shelving of library materials;
- Stock maintenance: Stock rectification and stock verification policies and procedures;
- Archiving, conservation, preservation and restoration of print, non-print and digital objects;

Unit 4: Managerial Tasks of Library Administration

- Library Committee and Library Authority types, functions, and needs;
- Library Committee meeting, Role of librarian in the Library Committee;
- Annual report Components and compilation;
- Library rules and regulations.

106 Library Automation and Networking (Theory)

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Fundamentals of Computers

a. Characteristics and classification of computers;
b. Hardware: System hardware, Memory units and auxiliary storage devices, Peripheral devices (Input and output devices);
c. Overview of Data Representation in Computer;
d. Software: System software, Operating System: Single and multi-user system, Features of MS DOS, Windows, and Linux;
e. Application software packages.

Unit 2: Programming Languages and Database Management System (DBMS)

f. Definition, scope, and use of programming languages
g. Types of programming languages: machine language, assembly language, and high-level language.
h. Programme Development Tools: Translator, Assembler, Interpreter, Compiler, Device Driver;
i. DBMS: Concept, scope, purpose, and advantages; Entity, attributes, and properties; Field, record, and database;
j. Features of DBMS Packages: Dbase III+ and WINISIS;
k. Markup Languages.

Unit 3: Computer Networks and Distributed Information System

l. Computer networks definition - scope, purpose, features, and advantages;
m. Types of network: LAN, MAN, and WAN;
n. Internet origin - development, architecture, connection options;
o. Internet in India - GIAS of India, Indian ISPs and connection options;
p. Internet addressing system - IP address, and domain name system;
q. Web retrieval tools - subject directories, search engines and meta search engines;
r. Use of internet technologies and tools in library and information services.

Unit 4: Library Automation

s. Areas of library automation, Procedural model of library automation.
t. Automation of housekeeping operations - planning and implementation;
u. Computerized acquisition and cataloguing subsystems, OPAC, and Web-enabled OPAC;
v. Computerized serials control subsystem;
w. Computerized circulation and maintenance subsystems;
x. Library automation software;
y. Digital Library.

107 History of Books

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1:

z. Overview of book history: Scope, methods, and significance; The book as a cultural and technological artifact.
aa. The Origins of Writing; Early writing systems (e.g., cuneiform, hieroglyphs, Chinese oracle bones); The transition from oral to written culture; Case study: Writing in ancient Mesopotamia.
bb. Early Book Forms; Clay tablets, papyrus scrolls, and early codices; Writing materials and their impact on book production.
cc. Manuscript Culture in the Ancient World; Manuscript production in Greece and Rome, The role of scribes and scriptoria; Case study: The Dead Sea Scrolls.
dd. Medieval Manuscript Culture, The codex and its dominance in medieval Europe; Illuminated manuscripts and monastic book production; Islamic and East Asian manuscript traditions.
ee. The Spread of Manuscripts; Manuscripts in medieval universities and courts; Trade and dissemination of manuscripts.

Unit 2:

ff. The Printing Revolution, The invention of the printing press (Gutenberg and beyond), Technological and cultural impacts of movable type, Case study: The Gutenberg Bible.
gg. The Early Modern Book; The spread of printing in Europe and Asia; Book trade and publishing in the Renaissance; Case study: The Aldine Press and Venetian printing.

hh. The Book in the Enlightenment; Books and the spread of scientific and philosophical ideas; The rise of the novel and popular literature.
ii. Mass Publishing and the Industrial Age; The industrialization of book production; The paperback revolution and dime novels; The global expansion of the book trade.
jj. Books in the 20th Century; Books during wartime and censorship; The rise of children's literature and graphic novels; Case study: Penguin Books and mass-market paperbacks.

Unit 3:

kk. The Digital Book Revolution; The emergence of e-books and self-publishing; Digital platforms (e.g., Amazon, Project Gutenberg); Case study: The impact of e-readers (Kindle, Nook).
ll. Global and Non-Western Book Traditions; Book history in Asia, Africa, and Latin America; Indigenous and oral traditions in book culture; Postcolonial publishing and global book markets.

Unit 4:

- Ancient Indian writing systems and manuscripts (e.g., Indus script, palm-leaf manuscripts);
- Medieval Indian book culture: Jain, Buddhist, and Mughal manuscript traditions;
- Colonial printing and the rise of Indian publishing (e.g., Serampore Mission Press);
- Modern Indian publishing and digital books in a multilingual context

108 Preservation and Conservation of Library Materials

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Preservation and conservation; Policy and Planning; Understanding the relationship between preservation management and appropriate conservation treatment; Policy of preservation.

Unit 2: Factors for deterioration of information resources and curative measures. Mending, Binding, Housekeeping. Preventive and Restorative treatment.

Unit 3: Evaluation and application of appropriate and modern conservation treatments; Binding.

Unit 4: Restoration of print, non-print, and electronic materials, Conservation applications for library and archives, Preservation of manuscripts. Importance of digital preservation- advantages and disadvantages.

SEMESTER II

201 History of Books (CBCS-I)

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1:

a. Overview of book history: Scope, methods, and significance; The book as a cultural and technological artifact.
b. The Origins of Writing; Early writing systems (e.g., cuneiform, hieroglyphs, Chinese oracle bones); The transition from oral to written culture; Case study: Writing in ancient Mesopotamia.
c. Early Book Forms; Clay tablets, papyrus scrolls, and early codices; Writing materials and their impact on book production.
d. Manuscript Culture in the Ancient World; Manuscript production in Greece and Rome, The role of scribes and scriptoria; Case study: The Dead Sea Scrolls.
e. Medieval Manuscript Culture, The codex and its dominance in medieval Europe; Illuminated manuscripts and monastic book production; Islamic and East Asian manuscript traditions.
f. The Spread of Manuscripts; Manuscripts in medieval universities and courts; Trade and dissemination of manuscripts.

Unit 2:

g. The Printing Revolution, The invention of the printing press (Gutenberg and beyond), Technological and cultural impacts of movable type, Case study: The Gutenberg Bible.
The Early Modern Book; The spread of printing in Europe and Asia; Book trade and publishing in the Renaissance; Case study: The Aldine Press and Venetian printing

h. The Book in the Enlightenment; Books and the spread of scientific and philosophical ideas; The rise of the novel and popular literature.
i. Mass Publishing and the Industrial Age; The industrialization of book production; The paperback revolution and dime novels; The global expansion of the book trade.
j. Books in the 20th Century; Books during wartime and censorship; The rise of children's literature and graphic novels; Case study: Penguin Books and mass-market paperbacks.

Unit 3:

k. The Digital Book Revolution; The emergence of e-books and self-publishing; Digital platforms (e.g., Amazon, Project Gutenberg); Case study: The impact of e-readers (Kindle, Nook).
l. Global and Non-Western Book Traditions; Book history in Asia, Africa, and Latin America; Indigenous and oral traditions in book culture; Postcolonial publishing and global book markets.

Unit 4:

- Ancient Indian writing systems and manuscripts (e.g., Indus script, palm-leaf manuscripts);

- Medieval Indian book culture: Jain, Buddhist, and Mughal manuscript traditions;
- Colonial printing and the rise of Indian publishing (e.g., Serampore Mission Press);
- Modern Indian publishing and digital books in a multilingual context

202 Foundations of Library and Information Science II

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit I: Legislation relating to Libraries and Information

- Library Legislation: needs and features;
- Library Legislation in India;
- Comparative study of library legislations in Indian states.
- Laws relating to information with special reference to India :
    - Press and Registration Act and Delivery of Books and Newspapers (Public Libraries) Act, 1954;
    - Intellectual Property Rights: Concept and scope;
    - Indian Copyright Act, 1957,
    - Right to Information Act, 2005.

Unit 2: Library and Information Service Profession

- Historical Development of Library & Information Science as a
- Occupation, Vocation, and Profession: Definitions and Attributes;
- Librarianship as a profession in India and abroad;
- Professional ethics and duties of Library and Information workers;
- Information ethics: Meaning and scope;
- Professional associations and their role in library development: International and National Scenario;
- Professional development: In-service training, LIS education, and research.

Unit 3: Public relations and extension activities

- Meaning and scope;
- Publicity and extension, O utreach activities;
- Community information services (CIS): Meaning, Types, Features, and CI Resources; CIS in India and abroad
- Local history collection and Area profile;
- Information Consultancy including promotional web tools.

Unit 4: Emerging Roles for LIS Professionals & Ethical and Inclusive LIS Practices

- Leadership and advocacy in modern LIS, New competencies for LIS professionals, Entrepreneurship and innovation in LIS
- Addressing bias in technology and services, Inclusive design for diverse populations, Ethical frameworks for modern LIS
- Trends shaping the future of libraries, Libraries as community and innovation hubs, Scenario planning for future libraries.

203 Management of Libraries and Information Centres-II

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Personnel Administration

a. Job analysis, Job description, job evaluation;
b. Selection and recruitment;
c. Staff manual;

Unit 2: Financial Administration

d. Sources of library finance and resource mobilization
e. Budgeting techniques and methods, budgetary control
f. Financial estimation and cost-benefit analysis

Unit 3: Planning

g. Definition, need, scope, and purpose of planning;
h. Types of planning, steps, and procedure of planning;
i. Building and space management;
j. Furniture and equipment;
k. Library standards.

Unit 4: Library Records and Statistics

l. Library Records Types, contents, and style of compilation;
m. Library statistics types, purposes, and applications in different library activities; Librametry;
n. Data collection and analysis methods and presentation of data;
o. Measurement of central tendency: Mean, Median, and Mode; Dispersion.

204 User Studies and User Education

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Users: identification of user groups and categorisation of users. User of information: user in different environments, and performing different activity. Information seeking behaviour of users. Inter-personal communication. Barriers to information communication. Man-machine interface.

Unit 2: User education: Historical perspective of user education. Different methods of User education. Technologies used in User Education. Library orientation, user assistance, Bibliographic instruction, programmed texts, workbooks, computer assisted library instructions. Information literacy. Philosophy of user education.

Unit 3: User Studies: Purpose and types. Library and literature use studies, Application of user studies. organization of user studies. Different methods of user studies.

Survey: objectives, resources, Staff, selecting data collection technique, timetable, Designing data Collection, selecting the data collection, Pilot survey, Writing and publication of results.

Unit 4: Information Use Promotion: different methods. Information marketing. Evaluation and Management, case study.

205 A)Resource Description I (Theory)

3L+0T+0P= 3 Credits Classes = 45 Marks= 40+10

Unit 1: Library catalogue - definition, importance, objectives, functions. Contributions of C A Cutter, S R Ranganathan, A D Osborn, Seymour Lubetzky, E Svenonius, and others. Library catalogue and bibliography. Cataloguing, indexing, and classification. Bibliographic Organisation and control -UBC.

Unit 2: Forms of catalogue. Physical forms - conventional forms, non-conventional forms. Machine-readable catalogue. Inner forms – Entries, formats, kind functions, and their suitability in different types of libraries. Simplified & selective cataloguing - advantages and disadvantages.

Unit 3: Normative Principles, canons & principles of cataloguing. ICCP, IME/ICC. ISBDs Code-Components, Levels, features. Historical development of cataloguing code – comparative study of codes in terms of their objectives, principles, rules, and concept of authorship. Problems in the choice of statement of responsibility. Choice and rendering of headings, Indic names, pseudonyms, anonymous works, Uniform titles. Rules for filing entries.

Unit 4: Automation, other development and organizations of cataloguing. New media and its effects on cataloguing. Networks, centralized and cooperative cataloguing, Bibliographic Utilities - OCLC Inc. RLIN, WLN etc. Union catalogue – layout and its compilations. WorldCat Organization of cataloguing department.; Subject cataloguing – concepts, purpose, general principles, lists of subject headings. Sears List of Subject Headings, LCSH, FAST.

B)Resource Description I (Practice)

0L+0T+3P= 3 Credits Classes = 90 Marks= 40+10

Cataloguing of documents in English and regional languages (optional) Bengali/ Hindi/ Nepali/ Olchiki) - Bibliographic Description and rendering of access points in English and regional languages by AACR 2R and CCC (with amendments).

Subject cataloguing – Sears List of Subject Headings/ LCSH.

296 Library Automation and Networking Practice I

0L+0T+3P= 3 Credits Classes = 90 Marks= 40+10

Unit 1: Operating System: Windows, MS-DOS, Windows 10/11, and Windows Advance Server;
Unit 2: Office Management Software Group: Ms-Access
Unit 3: SQL Basic;
Unit 4: Online Database Searching;
Unit 5: Internet Searching and Downloading;

207 Information Retrieval I

3L+0T+0P= 3 Credits Classes = 60 Marks= 40+10

Unit 1: Information Retrieval (IR): Concept, Nature; Content Analysis: Concept and Types; Mapping the Information Content

Unit 2: Indexing languages; Index construction: Concepts, Theory: Rationalist theories of Indexing; Historicist, Hermeneutical Theories of indexing Pragmatic and Critical Theories of indexing, Methods, Vocabulary Control; Subject Indexing: Sear's List and LCSH, Thesaurus, Thesaurofacet, Classaurus; Pre-coordinate Indexing System, Chain indexing, PRECIS - Preserved Context Index System, POPSI – Postulate based Permuted Subject Indexing, SLIC – Selective Listing in Combination; Post-coordinate indexing system, Uniterm Indexing System, Title derived Indexing System, Automatic Indexing, COMPASS.

Unit 3: Types of search: Boolean, Proximity, Fuzzy, Iterative Search Techniques; Structure for Dictionaries, Querying, Wildcard Queries, Interpretation, Full Text Search, Spelling Correction, Phonetic Correction, Search engines, Web Search Basics, Z39.50, Metadata in IR

Unit 4: Operational IR Systems: From OPACs, Federated Search Systems, Discovery Systems, etc. Web: Retrieval Systems: Web Information Retrieval System: Features; Information Retrieval Models and their Applications; Models based on Input/Output; Data retrieval model, Information retrieval model, Knowledge retrieval model.

298 Knowledge Organization II Practice

0L+0T+3P= 3 Credits Classes = 90 Marks= 50

Unit 1: Classifying documents using UDC

Unit 2: Classifying documents using CC7

SEMESTER III

301 Information and Communication Process

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Information science as a discipline: Definition, scope, and philosophy, Information Science and its relation to library Science, Documentation, Information Storage and Retrieval. Informatics, Information Management, Cybernetics, Information Technology, Typology of information sectors in modern society, Information Professions and their specializations, Information Society.

Unit 2: Information: Fundamental concepts, kinds, nature, characteristics, and definitions. Data, Information, Knowledge, and Wisdom. Information at various levels: Physical, Biological, and Social. Information Theory – Shanon and Weaver, Entropy, Semantic aspect. Evolution of human communication: Communication channels, Verbal and Non-verbal communication. Models of communication.

Unit 3: Generation of information: mode and forms, Communication process and media. Barriers to communication and remedial propositions. Sociology of information: role of information in social change and national development. National Information policy- Aims, objectives, approach, policy statement, and planning with special reference to India.

Unit 4: Transborder Data Flow. Value of socio-cultural information and its relation to civilization. Pre-industrial, Industrial, and Post-industrial societies. Right to Information-freedom of access. Confidentiality and privacy of information. IPR, Information Literacy, Economics of information: Information as a commodity, Information as a resource and Information as a factor of production. Machlup's model of production and distribution of knowledge.

Economic analysis models and their application to information industry. Cost benefit and Cost effectiveness; value, price and cost of information. Marketing of information products and services-Planning and processes.

302 Information Retrieval II

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Models based on Theories and Tools: Boolean model, Vector space model, Mathematical model

Unit 2: Web Search Strategy: Characteristics of Web Information Retrieval, Web and Information Retrieval Tools: Need, Types and Features, Information Retrieval Process: Techniques & Refinement, Information Retrieval Beyond Text, Information Retrieval Beyond English.
Unit 3: Evaluation of Information Retrieval Systems: Methods and Parameters; Current Trends in IR Systems, research and development
Unit 4: Design and Evaluation of Information Retrieval System (IRS), IR Model: Probabilistic Retrieval Model, Language Models, XML Retrieval; Text classification, Naive Bayes Vector Space Classification, Clustering, Web Crawling, and Link Analysis. Emerging Trends in IR: Artificial Intelligence, Expert System, Text Summarization, Text Compression, and Optical Character Recognition (OCR)

303 Social Networking

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Social Media & Social Networking

Social media & Social Networking: Meaning, Genesis, Categories, Evolution; Mobile social media; identity Algorithm; Content Management in Social Networking Sites.

Unit 2: Folksonomy, Social Network Analysis, Research Challenges

Folksonomy, Social Network Analysis (SNA), Social network & privacy, Reputation management, the Dragonfly Model, Research possibilities.

Unit 3: Social Media and News Use, Journalism, and Strategic communications

- Social media usage; The evolving role of news on Twitter and Facebook; News use across social media platforms; How social media is reshaping news; Social Media and Misinformation; Social Journalism; Sharing ideology and sharing economy; social media, advertising, PR, marketing and political campaigns; Social influence and diffusion of information; Social network and health communication.
- Ethics, Privacy, and Security in Social Media Engagement; Crisis Management and Reputation Management on Social Media; Emerging Trends in Social Media for Libraries.

Unit 4: Social Media for Libraries

- Social Media and Online Engagement, Social Media Strategy for Libraries,
- Understanding Library Audience Needs; Facebook for Libraries: Maximizing Engagement; Twitter for Libraries: Real-Time Engagement and Networking; Instagram for Libraries: Visual Storytelling and Engagement; LinkedIn for Libraries: Professional Networking and Engagement.
- Content Creation for Social Media; Social Media Advertising for Libraries; Video Content for Library Engagement; Building Community Engagement through Social Media

304 Information and Communication Technology- Theory

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Computer Technology

- Computer Architecture: Meaning, Historical perspectives, microprocessor, memory--categories and features, input and output devices;
- Computer operating systems: Types and functions, Multi-user (Unix-like) operating systems--user level and administration level;
- Open source operating systems;
- Overview of high-level programming languages and their use in problem solving;
- Algorithmic high-level programming languages: C, PASCAL, and FORTRAN (Any one language will be covered);
- Scripting high-level programming languages: PHP, ASP, PERL, and Java (Any one language will be covered).

Unit 2: Communication Technology

- Fundamentals of telecommunication technology: Data Processing Hardware and Data Communication Hardware, Data Transmission Media--Bound Links and Unbound Links, Multi modal computing, Mobile Computing;
- Networking Basics: Standards and Protocol, Topology, Network hardware, Network types, Network devices, Switching techniques, LAN, MAN and WAN, Configuration of LAN, ISDN--features;
- OSI networking model, TCP/IP reference model;
- Wireless Technologies: corDECT, Satellite-based communication, Wireless LAN;
- Internet and Intranet.

UNIT – 3: Database Management System

- Files organization and file structures, Indexing and hashing;
- Bibliographic DBMS: Types, Features and Applications, Search Techniques;
- RDBMS: Concept, Features, Availability of RDBMS Software, E-R Architecture, Application of Open Source RDBMS Tools (including GUI Interfaces), ODBC, JDBD;
- Database architecture and data modeling (hierarchical, network, and relational),
- Entity Relationship (E R) modeling, Data normalization;
- Introduction to SQL; Open source RDBMS (MySQL and PostGreSQL);
- Database security, Backup and recovery;
- Web databases (including Web accessibility of bibliographical databases).

UNIT – 4: Automated Library System

- Need, importance, advantages, and models of library automation;
- Library Automation Software: Evolution, Functions, System requirements and Functional requirements, Evaluation of library automation software, Trends and future.
- Integrated Library Management Software (ILMS) and automated library service;
- Comparative study of library automation software available in India.
- Open source software for library automation (KOHA, WEBLIS, etc.).

UNIT – 5: Digital Library System

- Digital Library: Genesis, Definitions, Features, Objectives, Scope, and Differences with Automated, electronic, and virtual library systems;
- Social-legal issues, Digital Library Initiatives and Projects;
- Digital library architecture--Web architecture, Common Gateway Interface (CGI) – architecture and programming tools (PERL, PHP, JSP), User interface, Web databases, Design issues, principles and models;

- Digital information resources and Digital archiving, Digitization process Techniques and
- Tools;
- Organisation of Digital Objects: Metadata encoding, Resource Identifiers (Naming
- services) URN, URI, CNRI's handle, PURL, DOI; Subject access systems standards
- and tools; Crosswalks of metadata schemas, Interoperability OAI/PMH, Z39.50;
- Open source digital library software (GSDL, DSpace, E-print Archive) and their implementation;
- Multilinguality, Unicode standard, and Indic script-based digital library system.

UNIT 6: Sessional Test / Assignment on Quantitative Techniques

305 Information and Communication Technology I - Practice

0L+0T+4P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Operating System: Linux

Unit 2: Programming Language, Scripting Programming Language

Unit 3: Word Processing, Spreadsheets, Presentation, DBMS

Unit 4: Library Automation Software: ILMSs

306 Data Curation, Management, and Analytics for Information Professionals

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Understanding Data in Modern Information Ecosystem

- Definitions, types, and characteristics of data (quantitative, qualitative, structured, unstructured)
- Data in the context of teaching, research, innovation, and decision-making (STEM, social sciences, health)
- Interrelationships between data, knowledge, and library services
- Evolution of libraries as data hubs
- Role of data in modern LIS services (e.g., discovery, access, reuse)
- Data literacy, data-centric learning, and its importance for information professionals
- Research data culture and advocating data services
- Data governance and stewardship

Unit 2: Foundations of Data Curation and Management

- Principles of data curation and digital preservation
- Data lifecycle framework (DCC model, DataOne lifecycle, etc.)
- Data documentation, metadata standards (Dublin Core, DDI, etc.)
- Data Management Plans (DMPs), and tools (e.g., DMPTool) for file organization and version control
- Storage, security, backup, and compliance
- FAIR (Findability, Accessibility, Interoperability, and Reusability) and CARE (Collective Benefit, Authority to Control, Responsibility, Ethics) principles
- Ethics, IPR, privacy (GDPR), and licensing (Creative Commons) of research data
- Data Repositories: Organizational structures, policy frameworks, and global standards (e.g., CoreTrustSeal certified)
- Launching RDM services, project management, and workflow design
- Role of libraries and data librarians in RDM

Unit 3: Tools and Techniques for Data Cleaning, Analysis, and Visualization

- Data Wrangling techniques and tools (e.g., OpenRefine)
- Introduction to coding environments (Python, R, Jupyter Notebook)
- File conversion and interoperability (CSV, JSON, XML)
- Data analysis workflows and techniques (e.g., descriptive statistics, inferential analysis, regression models, and clustering)
- Data visualization principles and tools (e.g., Tableau, R, Power BI)
- Reproducibility and platform tools (e.g., OSF, Mendeley Data, Zenodo)
- Data cataloging, documentation (e.g., README files, codebooks)

Unit 4: Research Data Services and Scholarly Communication

- Data services in libraries (from data reference to data publishing)
- Building data-resilient communities and supporting SDGs with open data
- Open government data and domain-specific data (health, social science, STEM)
- Data citation, data cataloging, and reference management
- Organizational structure and policy frameworks of data repositories
- Advocacy, training, and marketing RDM in LIS settings
- Role of data librarians/ databrians in policy design
- Collaboration, ownership, and stewardship in data lifecycle

307 IPR Management

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: IP Basics: Defining IP, IPR, Kinds of IPR, protection and management. Basics of Patent, Patent Document, Indian Patent Act and other Legal Obligations, Patent databases, Basics of Copyright, History of Copyright, Philosophy and Theories of Copyright, Legal Instruments- National & International

Unit 2: Copyright in Scholarship: Authorship and rights, Copyright in Publishing, Copyright Licensing and Assigning, Digital learning, Creative Commons, Open Data Licenses, Understanding of fair use, Specific exceptions for teachers and librarians, Piracy & digital piracy, Plagiarism, Copyright Protection Technologies, Basics of copyright permission

Unit 3: Copyrights and Multimedia: Copyright for Data, Image, music & Audio, Film & Video, Broadcasting & Webcasting, social media, Software & Open Source Software

Unit 4: Patent Searching, Fair Use Analysis, Framework for Analyzing for Copyright Problem, Case Study.

308 Digital Preservation

4L+0T+0P= 4 Credits Classes = 45 Marks= 40+10

Unit 1: Introduction to digital preservation, Triad of digital preservation, historical background.

Unit 2: Steps in digital preservation process, digital preservation strategies, digital content, metadata
for digital preservation.

Unit 3: Digital storage and media files, digital preservation tools, digital preservation software platform, Digital archives.

Unit 4: Digital content and IPR, Digital Preservation initiatives, future research challenges.

SEMESTER IV

401 Research Methodology

4L+0T+0P= 4 Credits Classes = 45 Marks= 40+10

Unit 1: Research - Meaning, Objectives, Characteristics, kinds – fundamental, basic, applied, types –historical, experimental, descriptive, survey, Major Research Paradigm: transdisciplinary, multidisciplinary, interdisciplinary, etc; Research in Social Sciences.: Sampling - Types and techniques, case study, other methods.

Unit 2: Research Setting and Design: Steps of Research - selection and statement of the problem. Hypotheses, Collection, Evaluation, Organisation, Analysis and Interpretation of Data; Research Proposal and Research Design; Research Report - format, style and structure, report. Techniques of collecting primary data: Observation-direct, indirect, Questionnaire structured/ unstructured, open/closed, Schedules, Interview, scheduling.

Unit 3: Quantitative Research: meaning, scope, Statistical methods, data collection, and presentation.; Bibliometrics: Origin, definition, scope. Libra metrics, Bibliometrics, Informetrics, and Scientometrics. Imperial laws, including laws of scattering and their interpretations. Bibliometric distributions- Gaussion and Zipfian(skew) distribution; Zipf's law, Lotka's law, and Bradford's law- Vickery's interpretation of Bradford's law and Brooke's work. Rank frequency, size frequency, and class frequency distribution.

Unit 4: Growth, Aging: Obsolescence; Half-life. Validity informetric measurement and application in libraries and information centres; Citation analysis and related concepts. Operations Research: definition, nature, purpose. Linear programming: Queing theory; Network analysis (PERT/CPM), Work study and decision analysis. Simulational Monte Carlo techniques; Sequencing, Searching, and Inventory problems.

402 Digital Content Management

4L+0T+0P= 4 Credits Classes = 45 Marks= 40+10

Unit 1: Collection development and organisation of digital resources, e-books, e-journals, ETD.
Unit 2: Digital Library – concept, library portal designing with HTML.
Unit 3: Institutional repository, digital archive.
Unit 4: Content Management Tools- Drupal, Joomla; Content management techniques: Blog, Wiki, Podcast, RSS, Web Conferencing, etc.

403 Management of E Resources and E-Publishing

4L+0T+0P= 4 Credits Classes = 45 Marks= 40+10

Unit – 1: Concept of E-resource

- Concept characteristics, advantages and disadvantages
- Format of E-resources: Off-line, Online, Databases
- E-journals, characteristics, advantages and disadvantages
- E-book, characteristics, advantages and disadvantages
- Online Databases, characteristics, advantages and disadvantages
- E-publishing: concept and process
- DOI

Unit - 2: Acquisition of E-resources

- Collection Development of e-resources: policies, new guidelines
- Evaluation and Selection of e-resources
- Acquisition / Subscription of e-resources – Modes:
- Direct o Consortia Trail
- Publishers of e-resources: products and services
- Availability of e-resources Open access
- Paid resources

Unit – 3: E-Resources Consortia for Resource Sharing

- Consortia and E-resources o National: AICTE-INDEST; UGC-INFONET; N-LIST; DeLCON and other consortia o International: OCLC and Other consortia
- • Role of Consortia in resource sharing
- • Paradigm shift of resource sharing in consortia-based environment

Unit - 4: Issues and Challenges for managing E- Resources

- • Technological Changes
- • Financial: pricing models; modes of access
- • Digital right management, copyright issues for access and distribution
- • Manpower training
- • User awareness training
-

Unit - 5: E-resource management system software

- • ERMSS: concept, need, purposes,
- • Life cycle of resources
- • ERMSS: products and services
- • Future of E- Resource Management
- • ROI: return on investment; cost-effectiveness
- • Statistical analysis; decision making
- • Recent Trends in e-resource management

404 Library Automation and Networking I - Practice

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Section A

[Full Marks 25 (Final Exam: 20 + Sessional Test / Internal Assignment: 05)

Preparation of bibliographic database of books and serials according to AACR 2R (output format) by utilizing MARC 21 Bibliographic standard, WINISIS, and ISIS MARC software.

Section – B

[Full Marks 25 (Final Exam: 20 + Sessional Test / Internal Assignment:05)

Unit 1: Webpage Development;
Unit 2: Library Automation Software – Operating Level Tasks (SOUL/ KOHA).

405 Open Knowledge System

4L+0T+0P= 4 Credits Classes = 60 Marks= 40+10

Unit 1: Open Access: Definition, Purpose/Need of Open Access, History of Open Access, Open Information and Data Resources (Open Data, Open Educational Resources)
Unit 2: Green Open Access, Gold Open Access, Gratis and Libre Open Access, Hybrid Model
Unit 3: Promoting Open Access: OA Initiatives and Scenario, OA Supporters (Persons), OA Organizations, OA Journals (Fee-based and No-Fee based, Popular), OA Scholarly Publisher Association, OA Repositories, Institutional Repositories. Major OA Networks, Facilitators, Coalitions and Initiatives (INASP, JISC, SPARC, SHERPA Project, Global OA Portal-UNESCO, OpenAIRE, COAR, EOS, NDLTD)
Unit 4: Open Access Mandates and Policies: Institutional Mandates (NIH Public Access Policy), National Centre for Atmospheric Research. Government-level Mandates: UK, US, Europe, Canada, India; Thesis Mandates –Shodhganga. Open Access Policy: Coalition of Open Access Policy Institutions (COAPI) , Rutgers Open Access Policy, Publication Policies of Major Research Funders, IES Mandate, The World Bank OA Policy, UNESCO OA Policy, Research Funders' Open Access Policies Data Archiving Policies

406 Information Consolidation and Repackaging

0L+0T+4P= 4 Credits Classes = 90 Marks= 40+10

Unit 1: Content analysis, abstract and index, newsletters, bulletins, in-house Journals, etc.
Unit 2: Bibliography, trend reports, reviews, digests, dictionaries, style manuals, standards, specifications, etc.

407 Dissertation

0L+0T+4P= 4 Credits Classes = Marks= 50

- Research paper or practical project with a report and presentation. Each student is required to present a seminar on a topic of his/her dissertation and it is to be followed by viva voce examination.

408 Internship

0L+0T+4P= 4 Credits Classes = Marks= 50

- Students are required to undergo internship in a Library / Information Centre / Research Lab selected by the department through a choice-based counseling process. The duration of internship will be of at least one month.