THE UNIVERSITY OFBURDWAN

Department of Library and Information Science

Syllabus of 1 Year Post Graduate Programme
in
Library and Information Science

[Master of Library and Information Science] (M.L.I.S)

Under
Curriculum and Credit Framework for Post Graduate Programme (CCFPP), as per N.E.P. 2020
w.e.f. 2027 – 2028

Approved in the PGBS meeting held on 13-07-2026

1. Title and Commencement

The programme shall be called the 1 Year (2 semesters) full-time Integrated Master of Library and Information Science (M.L.I.S.) programme under the Faculty of Arts, Commerce, etc.

This syllabus shall come into force from the academic session 2027-2028.

2. Objectives

- The primary objective is to train the students in the basics of professional skills for information / knowledge management, so that they serve the society through an institution of library or information centre.
- To give the students an understanding of the basic principles of Library and Information Science and to enable them to understand, appreciate and develop professionalism to work in contemporary “Information Age”.
- To acquaint the students with the development of the Universe of Knowledge and methods of its organization in a library/information system.
- To train students in the techniques of Information Management and equip them with skills for applying Information Communication Technologies (ICT) in libraries and information centres.
- To make students fully aware of various sources of information and train them in techniques of dissemination of information in the context of different user groups.

Duration and Semester System

The duration of the programme leading to the Degree of Master of Library and Information Science (M.L.I.S.) shall be with 2 semesters in one academic year.

The academic year shall be divided into two semesters. The first shall ordinarily commence in the month of July academic year. The second semester in the month of January of the academic year or on such dates as may be fixed by the University.

3. Academic Calendar

Academic Calendar will be as approved by the University.

4. Programme Outcomes (PO)

- Students understand the role, important and usefulness of this programme.
- Libraries and information centers are described as a social institution and it plays a vital role for education and culture.
- Students are learned about organizing, storing and disseminating library resources and providing various types of services to the patrons.
- The programme makes the students as professionals to serve in libraries and information centres.

- Beyond libraries and information centres, students are being experts in the other field like museums, archive centres, and documentation centres.
- The programme includes the applications of computer in libraries and information centres. The students are well equiped with computers tools and technologies that are being applicable in libraries and information centres.
- The students are well learned about library management software, digital library software to provide the services in digital environment.

5. Course Specific Outcomes(CSO)

- The programme includes the course 'Indian Knowledge Systems in Libraries'. The students are learned 'Indian Knowledge Systems (IKS) in Libraries' how to apply IKS in libraries and information centres.
- The course 'Information Retrieval' enables students to retrieve information and knowledge through various methods in traditional library as well as digital library.
- The course 'Automated and Digital Library Systems' allows to learn abouth library automation, digital library applications, technology, software and tools.

- The course 'Smart Library Systems (Practice)' enables students to learn about tools and techniques for smart library. The students will learn about discovery system, digital library OAI-PMH, MARC21, Dublin core, BIBFRAME etc.

- The course 'Intelligent Discovery and Scholarly Networks' provides learning about open science, open access, scholarly publishing models, knowledge disseminiation, scholary networks and knowledge graph.
- The Course 'Guided Research Project' is about a dissertation work that helps students becoming a library professional in traditional and digital library environment.

6. Programme Structure

- The 1 Year M.L.I.S. programme is in the level 6.5 of NHEQF and follows NcrF and CCFPPof NEP-2020.

- The 1 Year M.L.I.S Programme consists of 4**0 credits** (Sem-I: 20 credits, Sem-II: 20 credits) and Total **500 marks** (Sem-I: 250 marks, Sem-II: 250 marks).

- In 1 Year M.L.I.S. programme comes there are three options.

- **In Option-I** of Semester-I and Semester-II: 20 credits of 5 Major/Core courses in Semester-I and 20 credits of Research Thesis /Project in Semester -II.

- **In Option-II** of Semester-I and Semester-II: 20 credits of 5 Major/Core courses in Semester-I and 5 Major/Core courses in Semester-II.

- **In Option-III** of Semester-I and Semester-II: 20 credits of Research Thesis / Project in Semester-I and 20 credits of Research/Project in Semester-II

- A minimum of 2 credits shall have to earned from the compulsory course **PG1LISC2041: Coomunity Engagement**. This shall not be taken into consideration in the calculation of SGPA and CGPA. It is a complusory course.

- In Semester-II (in Option-I), the course **PG1LISC2031: Research Thesis / Project** is with 20 credits and it is compulsory course. Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks,)- 8 Credits, 100 Marks.

- In Semester-I and II (in Option-III), both the course **PG1LISC1031 and PG1LISC2031** are with 20 credits and it is compulsory course. Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks,)- 8 Credits, 100 Marks.

- The courses **PG1LISC1031 and PG1LISC2031** shall follow a well-defined research structure comprising research objectives, the statement of the problem, research questions, research methodology, research findings, and conclusions. All submissions must comply with the plagiarism limits prescribed under the UGC Regulations on Academic Integrity and Prevention of Plagiarism.

7. Guidelines for Evaluation Pattern

The performance of a candidate in a theoretical and practical both courses (papers) will be assessed for a maximum of 50 marks (Semester-I, II) as explained below (except the courses PG1LISC1031 and PG1LISC2031 which are discussed below):

Semester-I (Option-I and II):

- 40 marks as end-semester examination for the papers: PG1LISC1011, PG1LISC1012, PG1LISC1013, PG1LISC1015.
- 10 marks as Internal Assessment based on class test, assignment, seminar etc, modalities for which are to be decided by the concerned course-in- charge and notified to the students at the beginning of the semester.
- 40 marks as practical examination for the paper: PG1LISC1014.

Semester-I (Option-III):

- Total 250 marks are assigned to the paper: PG1LISC1031 (Research Thesis / Project).
- 150 marks as Preparation & Submission of Research Thesis/ Project Report.
- 50 marks as Seminar Presentation.
- 50 marks as Viva-voce.

Semester-II (Option-I and III):

- Total 250 marks are assigned to the paper: PG1LISC1031 (Research Thesis / Project).
- 150 marks as Preparation & Submission of Research Thesis/ Project Report.
- 50 marks as Seminar Presentation.
- 50 marks as Viva-voce.

Semester-II (Option-II):

- 40 marks as end-semester examination for the papers: PG1LISC2011, PG1LISC2012, PG1LISC2013, PG1LISC2014 and PG1LISC2015.

- 10 marks as Internal Assessment based on class test, assignment, seminar etc, modalities for which are to be decided by the concerned course-in- charge and notified to the students at the beginning of the semester.

Course Structure
1-Year M.L.I.S. Programme

Semester wise and Course wise Distribution of Credit & Marks under CCFPP as per NEP, 2020

Option- I: Course-work in the 1st Semester & Research Thesis/Project in the 2nd Semester

SEM	Course Type	Course Code & Level	Name of the Course	Credit	L-T-P	Marks	Marks Distribution Th.-Pr.-1A
Sem-I	Major/Core Course	PG1LISC1011 (500-599)	Indian Knowledge Systems in Libraries	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1012 (500-599)	Information Retrieval	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1013 (500-599)	Automated and Digital Library Systems	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1014 (500-599)	Smart Library Systems (Practice)	4	0-0-4	50	0-40-10
	Major/Core Course	PG1LISC1015 (500-599)	Intelligent Discovery and Scholarly Networks	4	3-1-0	50	40-0-10
			Total	**20**		**250**	
Sem-II	Research Thesis/Project	PG1LISC2031 (500-599)	Research Thesis/Project	20	0-0-20	250	0-250-0 Preparation & Submission of Research Thesis/Project Report (12 Credits) – 150 Marks, Seminar Presentation (50 Marks, 4 Credits) & Viva-voce (50 Marks, 4 Credits)- 100 Marks, 8 Credits
	Two-Credit Compulsory Couse	PG1LISC2041 (500-599)	Community Engagement (NC)	(This shall not be taken into consideration in the calculation of SGPA and CGPA)			
			Total	**20**		**250**	
			Total (Sem-I+ Sem-II)	**40**		**500**	

Option- II: Only Course-work in the 1st Semester & 2nd Semester

SEM	Course Type	Course Code & Level	Name of the Course	Credit	L-T-P	Marks	Marks Distribution Th.-Pr.-1A
Sem -I	Major/Core Course	PG1LISC1011 (500-599)	Indian Knowledge Library Systems	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1012 (500-599)	Information Retrieval	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1013 (500-599)	Automated and Digital Library Systems	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC1014 (500-599)	Smart Library Systems (Practice)	4	0-0-4	50	0-40-10
	Major/Core Course	PG1LISC1015 (500-599)	Intelligent Discovery and Scholarly Networks	4	3-1-0	50	40-0-10
			Total	**20**		**250**	
Sem-II	Major/Core Course	PG1LISC2011 (500-599)	Academic Library System	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC2012 (500-599)	Semantic Digital Library System	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC2013 (500-599)	Learning Content Management System	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC2014 (500-599)	Open Access System	4	3-1-0	50	40-0-10
	Major/Core Course	PG1LISC2015 (500-599)	Informetrics	4	3-1-0	50	40-0-10
	Two-credit Compulsory Course	PG1LISC2041 (500-599)	Community Engagement	(This shall not be taken into consideration in the calculation of SGPA and CGPA)			
			Total	**20**		**250**	
			Total (Sem-I + Sem-II)	**40**		**500**	

Option- III: Only Course-work in the 1st Semester & 2nd Semester

SEM	Course Type	Course Code & Level	Name of the Course	Credit	L-T-P	Marks	Marks Distribution Th.-Pr.-1A
Sem-I	Research Thesis/Project	PG1LISC1031	Research Thesis/Project	20	0-0-20	250	0-250-0 Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks,)- 8 Credits, 100 Marks
Sem-II	Research Thesis/Project	PG1LISC2031	Research Thesis/Project	20	0-0-20	250	0-250-0 Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks,)- 8 Credits, 100 Marks
	Two-credit Compulsory Course	PG1LISC2041 (500-599)	Community Engagement	(This shall not be taken into consideration in the calculation of SGPA and CGPA)			
Total (Sem-I + Sem-II)				**40**		**500**	

Option- I: Course-work in the 1st Semester & Research Thesis/Project in the 2nd Semester

First Semester

Major/Core Course

Course Code : PG1LISC1011 (500-599)

Course Title : Indian Knowledge Systems in Libraries

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			**Marks Distribution Th.-Pr.-1A**			
Course Code	**Course Title**			L	T	P	Th.	Pr.	1A	Total
PG1LISC1011 (500-599)	**Indian Knowledge Systems and Libraries**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I : Foundations of Indian Knowledge Systems

- Concept, nature, and scope of Indian Knowledge Systems (IKS);
- Historical development of knowledge traditions in India;
- Vedas, Upanishads, Puranas, Epics, and classical knowledge traditions;
- Contributions of ancient Indian scholars to knowledge creation and dissemination;
- Relevance of IKS in contemporary education and research.

Unit-II : Traditional Knowledge Resources and Institutions

- Ancient centres of learning: Nalanda University, Takshashila, Vikramashila, Vallabhi, and Odantapuri;
- Manuscripts, palm-leaf records, inscriptions, and archival materials;
- Indigenous systems of knowledge preservation and transmission;
- Libraries and repositories in ancient and medieval India;
- Oral traditions and community knowledge systems.

Unit-III : Organization and Preservation of Indigenous Knowledge

- Traditional methods of knowledge organization and classification;
- Documentation and bibliographic control of indigenous knowledge resources;
- Manuscript conservation and preservation techniques;
- Digitization of cultural heritage resources;

- Intellectual property rights and protection of traditional knowledge.

Unit-IV : Libraries as Custodians of Indian Knowledge

- Role of libraries in preserving and promoting IKS;
- Collection development and management of indigenous knowledge resources;
- Digital libraries, institutional repositories, and cultural heritage portals;
- Information services for IKS users and researchers;
- National initiatives for preservation and access to Indian knowledge resources.

Unit-V : Emerging Trends in IKS and Libraries

- Artificial Intelligence and digital technologies for IKS management;
- Linked Open Data and semantic technologies for cultural heritage resources;
- Research support services for IKS studies;
- Indian Knowledge Systems in the National Education Policy (NEP 2020);
- Future directions for libraries in preserving, disseminating, and revitalizing Indian knowledge traditions.

Reading List

Wasthi, D. S. (2024). Indian knowledge systems: A comprehensive analysis of various contexts. Shashwat Publication.

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Devi, D. P., Dr Ashok kumar Yadav and Dr Reeba. (2024). Indian knowledge system: Educational book. Uttkarsh Prakashan.

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Raghavan, D. M., S, D. H. S. M., & Ramaswamy, D. C. R. (2023). Elements of indic knowledge systems & heritage. HTSR Institute.

Sahoo, P. C., Pandey, D. P., & Das, A. K. (2026). Indian knowledge systems: Journey from vedic wisdom to digital repositories. Luminus International Publishers.

Singh, D. A. K. (2025). Indian knowledge system: Principles and practices. The Readers Paradise.

Singh, D. J. (2026). Indian knowledge systems: Sustainability and nep 2020 perspectives: sustainability and nep insights | agph books. AGPH Books.

Swain, D. P., Upadhyay, D. P., & Pandey, D. P. (2026). Indian knowledge system: Interdisciplinary approaches to heritage, sustainability, and innovation. Zykra Publications.

Yadav, D. N., & Goswami, D. R. (2025). Scientific marvels of ancient india: Technological insights from the indian knowledge system. Notion Press Media Pvt. Limited.

First Semester

Major/Core Course

Course Code : PG1LISC1012 (500-599)

Course Title : Information Retrieval

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-1A			
Course Code	**Course Title**			L	T	P	Th.	Pr.	1A	Total
PG1LISC1012 (500-599)	**Information Retrieval**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I : Introduction to Information Retrieval Systems

- Information Retrieval (IR) – meaning, history and development, differences with data retrieval; IR Systems – meaning, purpose, functions, operational stages, components, and kinds;
- Digital IR systems, Multilingual/Cross-lingual IR and Multimedia IR; Designing IR Systems;
- Query representation and IR – retrieval techniques (Boolean, Relational, Positional operators, Fuzzy search) and retrieval approaches (building-block, snowballing, successive fraction approach, most specific facet approach, convenient approach).

Unit-II : Subject Indexing: Principles and Practices

- Subject Headings: Contributions of Cutter, Kaiser, Ranganathan, Farradane, Coates, Austin, and Bhattacharyya; Derived and Assigned Indexing;
- Derived indexing system: Printed (keyword and citation indexing) and automatic/full-text indexing (MGPP, Lucene, HTDig etc.);
- Assigned indexing system (Syntax): Pre-coordination and Post-coordination; Pre-coordinate indexing system: Chain, PRECIS, POPSI, COMPASS, etc.;
- Post-coordinate indexing system: Computerized indexing system, Database vs. Card-based (Item entry and Term entry) systems, Tools for improving Post-coordinate retrieval (Links, Roles, and Weights);
- Intelligent IR and NLP – concept and applications.

Unit-III : Indexing Languages and Vocabulary Control

- Indexing Languages: Generations, types, and characteristics;
- Natural Language Indexing vs. Controlled Language Indexing, Problems of Assigned Indexing (Semantics); Vocabulary Control: Need, purpose, tools (alphabetical and classed);
- IR Thesaurus: Structure, standards (ISO 2788, ISO 25964-1 and ISO 25964-2), SKOS compatibility; Design and development of integrated online thesaurus: tools and methods.

Unit-IV : Digital IR Systems

- Digital IR – types, features, file design and organization;
- IR models – Boolean Logic Model, Vector Space Model, Probability Model, Cognitive Model, Natural Language Model; Digital IR types – Online IR, Optical-disk-based IR, OPAC and Web IR;
- Multiple database searching, Common Command Language, NISO and ISO standards, Multilingual/Cross-language Information Retrieval systems and projects;
- Web IR: Meaning, scope and characteristics, Models and standards, Operational aspects of the Web, Web Indexing, Search Engines, Meta Search Engines, Subject Directories, Subject Gateways, Institutional/Subject Repositories, Digital Libraries, Text Retrieval Engines, Semantic Web.

Unit-V : IR Systems – Users, Evaluation and Trends

- Users: Nature, Types of information needs, Information-seeking behaviour (ASK, Sense-making etc.);
- Meaning, Purpose, and Levels of IR Evaluation (System effectiveness, Cost effectiveness, Cost-benefit evaluation), Evaluation – measures, criteria and methodology;
- Evaluation initiatives (Cranfield 1 and 2, SMART, MEDLARS Test, STAIRS, TREC experiments, FIRE etc.); Recent developments and Future trends in IR.

Reading List

Aitchison, J., Gilchrist, A. & Bawden, D. (2000). *Thesaurus construction and use: a practical manual*. 4th ed. London: Aslib.

Anderson, James D. (1997). *Guidelines for indexes and related information retrieval devices: a technical report*. Bethesda, Maryland: National Information Standard Organization.

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Peters, C., Braschler, M., & Clough, P. (2012). *Multilingual information retrieval: from research to practice*. Heidelberg: Springer.

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Vickery, B. C. (1986). Knowledge representation: a brief review. *Journal of Documentation,* 42 (3), pp.145-159.

First Semester

Major/Core Course

Course Code : PG1LISC1013 (500-599)

Course Title : Automated and Digital Library Systems

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-1A			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC1013 (500-599)	**Automated and Digital Library Systems**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I : Foundations of Automated and Digital Library Systems

- Evolution of library services from traditional to automated and digital environments; Concepts, objectives, scope and components of automated and digital library systems;
- Historical development and emerging paradigms of library automation and digital libraries;
- Comparative analysis of traditional, automated, digital, virtual and hybrid libraries;
- International initiatives, standards and best-practice frameworks for digital transformation.

Unit-II : System Architecture and Service Workflow

- Structure and functional components of automated and digital library systems;
- Architecture of integrated information systems and digital library environments;
- Workflow design for acquisition, processing, access and service delivery;
- Software infrastructure, implementation planning and system integration;
- User-centred, multilingual and accessible system design principles.

Unit-III : Knowledge Organization and Metadata Management

- Resource organization through cataloguing, acquisition, circulation and serials control;
- Metadata standards and encoding schemes: MARC 21, Dublin Core, RDF, XML and BIBFRAME;
- Persistent identifiers and resource identification systems: DOI, URI, IRI and Handle System;
- Authority control, subject access systems and interoperability frameworks;
- Metadata mapping, crosswalks, harvesting protocols and linked data integration.

Unit-IV : Information Discovery and Digital Services

- OPAC, Web-OPAC, discovery layers and federated search systems;
- Information retrieval models, search strategies and relevance ranking techniques;
- Web-scale discovery services, semantic technologies and knowledge graphs;
- Digital content management, user experience and interface design;
- Digital preservation, institutional repositories and long-term access services.

Unit-V : Standards, Platforms and Emerging Technologies

- National and international standards for automated and digital library systems;
- Integrated Library Systems (ILS), Digital Library Software and repository platforms;
- Open-source ecosystems, cloud computing and Software-as-a-Service (SaaS) solutions;
- Linked Open Data, Semantic Web technologies and Artificial Intelligence applications;
- Emerging trends in intelligent, data-driven and next-generation digital information systems.

Reading List

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First Semester

Major/Core Course

Course Code : PG1LISC1014 (500-599)

Course Title : Smart Library Systems (Practice)

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-1A			
Course Code	**Course Title**			L	T	P	Th.	Pr.	1A	Total
PG1LISC1014 (500-599)	**Smart Library Systems (Practice)**	Major/ Core Course	4	0	0	4	0	40	10	50

Unit-I: Advanced Integrated Library Systems and Discovery Services

- Advanced installation, configuration and administration of Koha;
- Customization of OPAC, circulation, acquisitions, serials and reports in Koha;
- Koha database management, backup, security and performance optimization;
- Data migration from legacy systems to Koha and cross-platform library system migration;
- Integration of Koha with VuFind Discovery Interface;
- API-based interoperability and integration of library systems.

Unit-II: Digital Libraries, Institutional Repositories and Content Management

- Installation, configuration and administration of DSpace;
- Repository creation and management using EPrints;
- Digital exhibition and collection development using Omeka;
- Metadata harvesting through OAI-PMH and interoperability practices;
- Data migration between repositories and digital library platforms;
- Digital collection management, preservation and access services.

Unit-III: Data Management, Metadata Standards and Bibliographic Modeling

- Data cleaning, transformation and reconciliation using OpenRefine and related tools;
- Metadata creation, validation and quality control;
- Metadata crosswalks and schema mapping;
- Authority control, entity reconciliation and identifier management;
- Bibliographic and metadata migration using MARC 21, Dublin Core and BIBFRAME;
- RDA implementation and bibliographic modeling using RIMMF;

- Automated metadata enrichment and interoperability testing.

Unit-IV: Semantic Web, Linked Data and Artificial Intelligence Applications

- Ontology development using Protégé and related tools;
- RDF, RDFS, OWL and SPARQL implementation;
- Linked Data creation, enrichment and publishing;
- Knowledge Graph development using Wikidata, DBpedia and graph databases;
- Automated subject indexing using Annif;
- AI-assisted metadata generation, classification and knowledge organization;
- Practical use of Generative AI tools for library services.

Unit-V: Smart Library Applications and User-Centred Technologies

- Development of Angular-based library discovery interfaces;
- Library website design and development using modern web technologies;
- Mobile application development for library services;
- Reference management systems using Zotero, Mendeley and EndNote;
- Development of integrated discovery and knowledge access services;
- Design and implementation of a Smart Library project integrating Koha, SLIMS, VuFind, DSpace, EPrints, Omeka, RIMMF, Annif, Linked Data and Knowledge Graph technologies.

Reading List

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First Semester

Major/Core Course

Course Code : PG1LISC1015 (500-599)

Course Title : Intelligent Discovery and Scholarly Networks

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC1015 (500-599)	**Intelligent Discovery and Scholarly Networks**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Foundations of Scholarly Discovery and Knowledge Ecosystems

- Evolution of scholarly communication, digital scholarship and knowledge ecosystems;
- Knowledge discovery, information retrieval and scholarly workflows;
- Open Science, Open Access, Open Data and FAIR Principles;
- Scholarly publishing models and knowledge dissemination;
- Scholarly identifiers and information infrastructures;
- ORCID, DOI, ISNI, Research Organization Registry (ROR), Crossref and DataCite;
- Global scholarly communication initiatives and emerging trends.

Unit-II: Scholarly Discovery Systems and Intelligence Platforms

- Principles of scholarly information discovery and academic search;
- Academic search engines and scholarly discovery platforms;
- Google Scholar, Semantic Scholar, Dimensions, Lens.org, OpenAlex, BASE and CORE;
- AI-powered discovery tools and intelligent literature exploration;
- SciSpace, Elicit, Consensus, Scinapse and Connected Papers;
- Scholarly mapping and literature discovery using ResearchRabbit and Litmaps;
- Search strategies, citation chasing, recommendation systems and semantic retrieval;
- Scholarly intelligence and knowledge discovery using Dimensions Analytics.

Unit-III: Scholarly Networks, Knowledge Graphs and Academic Visibility

- Concepts and structure of scholarly, citation and collaboration networks;
- Co-authorship, co-citation and bibliographic coupling networks;
- Knowledge graphs and linked scholarly data;

- Wikidata, OpenAlex Graph, Dimensions Knowledge Graph and Semantic Web applications;
- Scholar profiling and academic identity management;
- ORCID, ResearchGate, Vidwan, IRINS, Google Scholar Profiles and Scopus Author Profiles;
- LIB-VAHINI and national scholarly information initiatives;
- Scholarly visibility, reputation, impact and digital presence.

Unit-IV: Scholarly Analytics, Big Data and Academic Integrity

- Scientometrics, bibliometrics, webometrics, informetrics and altmetrics;
- Fundamentals of Big Data Analytics in scholarly communication;
- Scholarly data mining, citation analytics and trend analysis;
- ScholarGPS, SciRank Global Scientific Index, Dimensions, Lens.org and OpenAlex analytics;
- Impact indicators, Field Citation Ratio (FCR), Relative Citation Ratio (RCR) and alternative metrics;
- AI and Machine Learning applications in scholarly analytics;
- Academic integrity, publication ethics and responsible metrics;
- Turnitin, DrillBit, iThenticate and similarity detection systems.

Unit-V: Practical Applications of Intelligent Discovery and Scholarly Networks

- Scholarly discovery using Google Scholar, Semantic Scholar, Dimensions, Lens.org and OpenAlex;
- Scholar profiling using ORCID, Vidwan, IRINS and ResearchGate;
- Exploration of scholarly resources through ROAD, DOAJ, OpenDOAR and CORE;
- Scholarly intelligence and ranking analysis using ScholarGPS, SciRank Global Scientific Index and Dimensions;
- Citation, bibliometric and Big Data analysis using Dimensions and OpenAlex datasets;
- Network visualization using VOSviewer, CiteSpace and Gephi;
- Knowledge graph exploration using Wikidata, Open Knowledge Maps and Dimensions Knowledge Graph;
- AI-assisted scholarly discovery using SciSpace, Elicit and Consensus;
- Practical exercises on literature discovery, analytics, network mapping and scholarly assessment;
- Mini project on intelligent discovery, scholarly networks and Big Data analytics.

Reading List

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Second Semester

Research Thesis/Project

Course Code : PG1LISC2031 (500-599)

Course Title : Research Thesis/Project

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2031 (500-599)	**Research Thesis/Project**	Research Thesis/Project	20	0	0	20	0	250	0	250

PG1LISC2031(Research Thesis / Project): Based on Survey research, experimental research, assignment Presentation and Viva-voce. Presentation and Viva-Voce (in the presence of external experts from other Universities/Institutions). Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (50 Marks, 4 credits)& Viva-voce (50 Marks, 4 Credits)-100 Marks, 8 Credits.

PG1LISC2031	Description	Marks	Credits
Research Thesis / Project	Based on Survey Research, Experimental Research, or Assignment. Preparation and submission of the Research Thesis/Project Report.	**150**	**12**
Seminar Presentation	Presentation of the Research Thesis/Project before the Department.	**50**	**4**
Viva-Voce	Oral examination conducted in the presence of External Experts from other Universities/Institutions.	**50**	**4**
Total	Research Thesis/Project Evaluation	**250**	**20**

Second Semester

Two-Credit Compulsory Couse

Course Code : PG1LISC2041 (500-599)

Course Title : Community Engagement

Community Engagementshall be a two-credit compulsory course for all students of One-year PG programmes. However, this shall not be taken into consideration in the calculation of SGPA and CGPA.

Second Semester

Major/Core Course

Course Code : PG1LISC2011 (500-599)

Course Title : Academic Library System

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2011 (500-599)	**Academic Library System**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Academic Libraries and their Users

- Higher education and libraries in India;
- Academic libraries – definition, meaning, importance, functions and types;
- Users of academic libraries – types of users and their needs, user study and user education;
- Structure and hierarchies of academic libraries, Role of UGC, AICTE, NCTE and other bodies in academic library development;
- Changing role of academic libraries – National and global scenario, Recommendations, Standards and Best practices.

Unit-II: Management of Academic Libraries

- Records management and library planning;
- Collection Development/Resource Optimization;

- Human Resource Management;
- Financial Management;
- Application of MIS, OR and TQM;
- Library Co-operative Organizations and Network services.

Unit-III: Services in Academic Libraries

- Traditional services;
- Documentation services;
- ICT-enabled services;
- Advanced scholar-specific services;
- Reference and information services to Research Scholars.

Unit-IV: Change Management in Academic Libraries

- Effects of Globalization on Libraries;
- Generation Gap due to Knowledge-based society;
- Change of academic environment and management style;
- Change of users' interests and learning techniques;
- Leadership style and qualities of Librarians.

Unit-V: Introduction of New Digital Applications in Academic Libraries

- Application of Academic Library 2.0;
- International academic library scenario;
- Academic Library Repositories;
- Library e-resource management, policy and programmes;
- Future trends in academic library development.

Reading List

Applegate, Rachel (2010). Managing the small college library. Englewood, CO: Libraries Unlimited. Bavakutty, M. (1986). College Libraries in India, Vol.7: A case study. West Yorkshire: MCB University press. Bavakutty, M. (1988). Libraries in higher education. New Delhi: Ess Ess.

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Practical strategies for modern academic library. London: Aslib-IMI. Hingwe, K S. (1982). Management of university libraries in India. Calcutta: The World Press.

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Isaac, Dorothy, Raju A.A.N., & Ramaiah, L.S., Ed. (1993). Academic libraries: role in the national development. T R Publications. Jenkins C. & Mary M. (1996). Collection development in academic libraries. Brookfield, VT: Gower.

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McDonald, Joseph & Micikon, Basney. (1994). Academic libraries: the dimensions of their effectiveness. Westport, CT: Greenwood Press. McNeil, B. (2004). Human resource management in today's academic library. Westport, CT: Greenwood Press.

Poole, Herbert, Ed. (1977). Academic library by the year 2000. New York: Bowker. Prashar, R G. (1991). Managing university libraries. New Delhi: Today & Tomorrow. Saini, B.S. (1976). Library organisation for higher education. New Delhi: Ess Ess.

Singh, Sewa and Arora, M., Ed. (1995). Handbook of college libraries: problems, finance and related aspects. New Delhi: Beacon Books. Srivastava S.N. and Verma S.C., (1980). University libraries in India. New Delhi: Vikas.

Trehan, G.L., (1985). College library development. New Delhi: Sterling Publishing.

University Grants Commission. (2001). Model curriculum: library and information Science. New Delhi: UGC.

Second Semester

Major/Core Course

Course Code : PG1LISC2012 (500-599)

Course Title : Semantic Digital Library System

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2012 (500-599)	**Semantic Digital Library System**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Institutional Digital Repository

- Genesis, Essential benefits of IDR, Aggregators;
- Projects of IDR; Integration of CMS and Visual Vocabulary with DSpace;
- Digital Media Archiving Cluster.

Unit-II: Designing and Configuration of IDR Software Framework in Generic Level

- Generic level software framework;
- Digital media archiving framework;
- Parameters selection for DMA Cluster.

Unit-III: Semantic Web Enabled IDR

- Key standards of Semantic IDR;
- Concept of IDR at the semantic level;
- Designing and configuration of IDR in semantic-level software framework;
- Designing controlled and visual vocabulary (MultiTes and TemaTres);
- Semantic graph interface.

Unit-IV: Development of Museum-related IDR

- Objectives of VRA Core in Omeka;
- Installation and configuration;
- Open-source standards in image cataloguing and digital CMS Metadata Editor;
- Single-window-based interface;
- Bibliography management repository, e-book viewer and cloud computing.

Unit-V: Development of Document Management and Community Communication

- Repository tools and standards requirements;
- Components and objectives of Document Management System (DMS);
- Installation and configuration of Providence;
- Import-based digital repository through Providence.

Unit-VI: AI-enabled Tools for Institutional Digital Repositories

- AI-enabled repository management: Application of ChatGPT (OpenAI), Google Gemini, Microsoft Copilot, and NotebookLM for intelligent repository management and digital library services.
- AI-assisted scholarly discovery: Use of SciSpace AI, Elicit, Consensus, and Semantic Scholar AI for literature discovery, research synthesis, scholarly communication, and knowledge exploration.
- AI-based metadata and indexing: Application of Annif and GROBID AI for automated metadata generation, bibliographic information extraction, semantic indexing, subject classification, and metadata enrichment.
- Intelligent repository services: AI-supported document processing, information retrieval, knowledge organization, semantic search, repository automation, and intelligent digital repository services.

Reading List

Fensel, D., Domingue, J. (2011). Handbook of Semantic Web Technologies. Germany: Springer. Fensel, D., Domingue, J. (2011). Handbook of Semantic Web Technologies. Germany: Springer.

Ma, Z. (2009). The Semantic Web for Knowledge and Data Management: Technologies and Practices. United States: Information Science Reference. Mandal, S. (2017). Development of Semantic Web Based Institutional Digital Repository: The New Way. Kolkata: Prova Prakashani.

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Second Semester

Major/Core Course

Course Code : PG1LISC2013 (500-599)

Course Title : Learning Content Management System

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2013 (500-599)	**Learning Content Management System**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Learning Management Systems and E-Learning

- Learning Management System (LMS): concept, architecture, features and components;
- E-Learning, Learning Content Management System (LCMS), MOOCs, Open Educational Resources (OER) and Open Access;
- National and international e-learning initiatives: SWAYAM, SWAYAM PRABHA, NPTEL, e-PG Pathshala, DIKSHA, National Digital Library of India (NDLI), Coursera, edX, FutureLearn and Udemy;
- Installation, configuration and administration of Moodle, Canvas, Google Classroom, Blackboard Learn and Open edX;
- AI-enabled learning platforms using ChatGPT, Google Gemini, Microsoft Copilot and NotebookLM.

Unit-II: E-Learning for Courses and Categories; Activities of Online Education

- Course and category creation, enrolment and user management;
- Learning activities: assignments, lessons, discussions, workshops, quizzes and collaborative learning;
- Blended learning, flipped classroom and competency-based learning;
- Learning analytics, student engagement and progress monitoring;
- AI-assisted course design and adaptive learning using MagicSchool AI, Khanmigo, ChatGPT and Google Gemini.

Unit-III: Quiz Creation, Assessment and Course Completion

- Question banks, quizzes and online examinations;
- Assignment submission, grading, rubrics and feedback;

- Course completion tracking, digital badges and certificates;
- Academic integrity and plagiarism detection using Turnitin, DrillBit and Ouriginal;
- AI-assisted question generation and assessment using Quizizz AI, QuestionWell, ChatGPT and Microsoft Copilot.

Unit-IV: Video Conferencing System and Assignments for E-Learning

- Virtual classrooms, webinars and synchronous learning;
- Integration of Zoom, Google Meet, Microsoft Teams, Cisco Webex and BigBlueButton with LMS;
- Multimedia learning resources, lecture recording and content sharing;
- Assignment creation, submission and peer evaluation;
- AI-enabled transcription, captioning, meeting summaries and virtual teaching assistants using Otter.ai, Fireflies.ai, Google Gemini and Microsoft Copilot.

Unit-V: E-Learning Interface and Communication

- User interface design, accessibility and responsive learning environments;
- Discussion forums, messaging, announcements and collaborative learning communities;
- Mobile learning, cloud-based LMS and social learning platforms;
- Integration of H5P, Genially, Canva for Education, Padlet and Mentimeter for interactive learning;
- AI-powered chatbots, recommendation systems, intelligent tutoring systems and personalized learning using ChatGPT, NotebookLM, Khanmigo and Google Gemini.

Reading List

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Second Semester

Major/Core Course

Course Code : PG1LISC2014 (500-599)

Course Title : Open Access System

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2014 (500-599)	**Open Access System**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Foundations of Open Access

- Open Access: definition, principles, purpose and evolution;
- Open Access movement and history;
- Open Information Resources: Open Data, Open Government Data and Open Educational Resources (OER);
- FAIR Principles and Open Science ecosystem;
- National initiatives: NDLI, e-PG Pathshala, SWAYAM, NPTEL.

Unit-II: Open Access Resources and Platforms

- OA pathfinders: DMOZ, DOAB and OATD;
- Gold and Green Open Access: DOAJ, OpenDOAR and ROAR;
- OA gateways and aggregators: SSRN, PLOS, BASE, CORE, OpenAlex and Lens.org;
- Open Data repositories, OA educational resources and citation services;
- Preprint repositories: arXiv, bioRxiv and medRxiv.

Unit-III: Open Access Initiatives and Repositories

- Open Access initiatives, organizations and scholarly publishers;
- OA journals, institutional repositories and disciplinary repositories;
- Major OA networks and collaborations: INASP, JISC, SPARC, SHERPA, UNESCO Global Open Access Portal, OpenAIRE, COAR, EOSC and NDLTD;
- Research repositories: Zenodo, Figshare, Dryad and Dataverse;
- National repositories: Shodhganga, ShodhGangotri and NDLI.

Unit-IV: Open Access Policies and Mandates

- Institutional, national and international Open Access mandates;
- NIH Public Access Policy, UKRI, Europe, Canada, India and Shodhganga mandates;
- Open Access policies of UNESCO, COAPI, World Bank and major research funders;
- Research Data Management (RDM), Data Archiving Policies and FAIR Data Principles;
- Copyright, Creative Commons (CC) licences and Plan S.

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Second Semester

Major/Core Course

Course Code : PG1LISC2015 (500-599)

Course Title : Informetrics

Name of Courses		Type	Credit	Pattern of Teaching-learning (hours per week)			Marks Distribution Th.-Pr.-IA			
Course Code	**Course Title**			L	T	P	Th.	Pr.	IA	Total
PG1LISC2015 (500-599)	**Informetrics**	Major/ Core Course	4	3	1	0	40	0	10	50

Unit-I: Foundations of Informetrics

- Librametrics, Bibliometrics, Scientometrics and Informetrics: meaning, scope and applications;
- Cybermetrics, Webometrics and Altmetrics: concepts, scope and characteristics;
- Citations, hyperlinks (sitations), article-level metrics and research impact;
- Evolution of research evaluation and scholarly communication;
- Emerging concepts: Research Analytics, Open Science Metrics and Responsible Metrics.

Unit-II: Citation Analysis and Research Impact

- Citation analysis: theory, citation behaviour and citation counts;
- Journal ranking, age study, obsolescence and research productivity;
- Authorship collaboration, self-citation and collaboration networks;
- Bibliographic coupling, co-citation analysis and co-word analysis;
- Science mapping and knowledge visualization.

Unit-III: Bibliometric Laws and Indicators

- Bibliometric laws: Lotka's Law, Bradford's Law, Zipf's Law, and empirical laws of Price, Garfield and Sengupta;
- Applications of bibliometric laws in digital and web environments;
- Research impact indicators: Journal Impact Factor (JIF), h-index, g-index, i10-index, CiteScore, SJR and SNIP;
- Webometric indicators: Web Impact Factor (WIF), WISER and alternative research metrics;
- Responsible metrics and research assessment frameworks.

Unit-IV: Bibliometric Tools and Research Analytics

- Bibliographic databases: Web of Science, Scopus, Google Scholar, OpenAlex, Dimensions AI and Lens.org;
- Bibliometric and visualization tools: VOSviewer, CiteSpace, Bibliometrix/Biblioshiny, Pajek and Gephi;
- Webometric and altmetric tools: Altmetric.com, PlumX, ImpactStory and Internet Archive;
- AI-enabled research analytics using ChatGPT, SciSpace AI, Elicit, Semantic Scholar AI and Consensus;
- Research profiling platforms: ORCID, ResearchGate, Google Scholar Profiles, ScholarGPS and SciRank.

Unit-V: Applications and Emerging Trends

- Applications of bibliometrics, webometrics and altmetrics in research evaluation;
- Open Science, Open Access and research assessment;
- Research intelligence, scientometric mapping and policy analysis;
- AI-driven bibliometric analysis, knowledge graphs and scholarly knowledge discovery;
- Emerging trends in Responsible Metrics, Research Analytics and Open Science.

Reading List

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