



**University of Kalyani**  
Department of Library and Information Science  
**Kalyani – 741235; West Bengal**

**MASTER OF LIBRARY AND INFORMATION SCIENCE**  
**(M.Lib.I.Sc)**

**CURRICULUM**  
*on the basis of*  
**Learning Outcomes-based Curriculum Framework (LOCF)**

*With effect from 2021-2023 academic session*

**Approved in the PGBOS meeting held on 23.10.2021**

# Master of Library and Information Science (M.Lib.I.Sc)

## Integrated Two Academic Sessions - Four Semester Course – Learning Outcomes-based Curriculum Framework (LOCF) (With effect from 2021-2023 academic session)

**Eligibility:** Bachelors Degree with Honours (10+2+3 system) or its equivalent (B.E., B. Tech., MBA, BBA, BCA etc.) from the University of Kalyani or from any recognized University.

**Intake:** Thirty five (35)

**Academic Calendar:** As per the University Academic calendar.

**Admission procedure:** As per the University notification.

### Course Structure:

- M.Lib.I.Sc curriculum consists of **104 credits** distributed in **34 courses** in **2 academic sessions** and **4 semesters**. Each student requires to complete **100 credits** of this curriculum and **4 credits** from Generic Elective Courses (GECs) offered by other departments under the University of Kalyani (this curriculum contains one GEC of 4 credits in second semester for students of other departments under the University of Kalyani)
- It is desirable that each credit will have **12** contact hours of teaching for **theory** or **18** contact hours of teaching for **practical** in a semester.
- **64 credits** are meant for **Core Courses** (coded as LIS-COR-XXX), **24 credits** for **Discipline Specific Elective** courses (coded as LIS-DSE-XXX), **2 credits** for **Ability Enhancement** courses (coded as LIS-AEC-XXX), **2 credits** for **Skill Enhancement** courses (coded as LIS-SEC-XXX), and **8 credits** for Dissertation work. These are required to be completed/earned by each student.
- **4 credits** are assigned to **Generic Elective Course** (coded as LIS-GEC-201) for other departments under this university.
- M.Lib. I. Sc course has a total **1300 marks** (1250 from the programme + 50 from Generic Elective Course to be completed from other departments of Kalyani University).
- Internal Assessment marks of a course is either **Continuous Evaluation (CE)** and/or **Project (PRJ)** and/or **Practical (PRC)** or **combination**.
- Internal assessment of a practice paper will be based on **Practical tests**.
- Intake capacity for the Open Course (LIS-GEC-201) will be the intake capacity of the department.

**Core Objective:** To impart skills in learners that are required to manage a modern library or information institution of any type or size with the help of classical principles of library and information science, and by applying cutting-edge technologies.

### Course Credit Structure

Sem	Course Code	Course Title	Course Type	Credit Pattern			Credit Value	Marks Distribution		
				Lecture (L)	Tutorial (T)	Practice (P)		Semester Examination	Internal Assessment	Total Marks
SEM I	LIS-COR-101	Library and Society	CORE	3	1	0	4	40	10	50
	LIS-COR-102	Document Classification (Theory)	CORE	2	2	0	4	40	10	50
	LIS-COR-103	Document Cataloguing (Theory)	CORE	3	1	0	4	40	10	50
	LIS-COR-104	Library Information Technology (Theory)	CORE	3	1	0	4	40	10	50
	LIS-COR-105	Library Information Technology (Practice)	CORE	0	1	3	4	40	10	50
	LIS-COR-106	Information Sources, Systems and Services	CORE	2	2	0	4	40	10	50
	LIS-AEC-107	107 A : Digital Information Literacy 107 B : Technical Writing	AECC	1	0	1	2	15 (Project)	10 (Presentation)	25
				14	8	4	26	255	70	325
SEM II	LIS-GEC-201	Information Resource Management	GEC	3	1	0	4	40	10	50
	LIS-COR-202	Document Classification (Practice)	CORE	0	1	3	4	40	10	50
	LIS-COR-203	Document Cataloguing (Practice)	CORE	0	1	3	4	40	10	50
	LIS-COR-204	Resource Description and Content Designation (Theory)	CORE	3	1	0	4	40	10	50
	LIS-COR-205	Resource Description and Content Designation (Practice)	CORE	0	1	3	4	40	10	50
	LIS-COR-206	Library System Management	CORE	3	1	0	4	40	10	50
				9	6	9	24	240	60	300
SEM III	LIS-COR-301	Information Representation and Retrieval	CORE	3	1	0	4	40	10	50
	LIS-COR-302	Knowledge Organization (Theory)	CORE	3	1	0	4	40	10	50
	LIS-COR-303	Knowledge Organization (Practice)	CORE	0	1	3	4	40	10	50
	LIS-COR-304	Automated Library System (Theory)	CORE	3	1	0	4	40	10	50
	LIS-COR-305	Automated Library System (Practice)	CORE	0	1	3	4	40	10	50
	LIS-DSE-306	306 A : Digital Resource Management 306 B : Knowledge Management	DSE	2	2	0	4	40	10	50
	LIS-SEC-307	307 A : Multilingual Information Retrieval 307 B : References and Citations: Network and Tools	SEC	1	0	1	2	15 (Project)	10 (Presentation)	25
				12	7	7	26	255	70	325
SEM	LIS-DSE-401	401 A : Research Methodology 401 B : Informetrics	DSE	3	1	0	4	40	10	50
	LIS-DSE-402	402 A : Digital Library System I 402 B : Community Information Systems and Services	DSE	3	1	0	4	40	10	50

IV	LIS-DSE-403	403 A : Digital Library System II 403 B : Semantic Web Technologies and Libraries	DSE	0	2	2	4	40	10	50
	LIS-DSE-404	404 A : Library Service Platform 404 B : Open Knowledge System	DSE	2	2	0	4	40	10	50
	LIS-DSE-405	405 A : Data Carpentry and Libraries 405 B : Virtual Learning and Libraries	DSE	2	2	0	4	40	10	50
	LIS-COR-406	Guided Research Project	CORE	2	6	0	8	75 (Text)	25 (Seminar Presentation)	100
				12	14	2	28	260	90	350
Grand total							104	1025	275	1300

### Credit Distribution

Core Courses (COR) – <b>64 credits</b>		Discipline Specific Elective Courses (DSE) – <b>24 credits</b>			
Theory	Practicum	Track A		Track B	
		Theory	Practicum	Theory	Practicum
Courses: 10 courses Credits: 40 credits	Courses: 6 courses Credits: 24 credits	Courses: 5 courses Credits: 20 credits	Courses: 1 course Credits: 4 credits	Courses: 5 courses Credits: 20 credits	Courses: 1 course Credits: 4 credits
Total : 16 courses and 64 credits		Total: 6 courses and 24 credits		Total: 6 courses and 24 credits	

Generic Elective Course (GEC)	Ability Enhancement Course (AEC) – <b>2 credits</b>		Skill Enhancement Course (SEC) – <b>2 credits</b>		Dissertation (Core Course)
	Track A	Track B	Track A	Track B	
Courses: 1 course Credits: 4 credits	Courses: 1 course Credits: 2 credits	Courses: 1 course Credits: 2 credits	Courses: 1 course Credits: 2 credits	Courses: 1 course Credits: 2 credits	Courses: 1 course Credits: 8 credits
Total : 1 course and 4 credits	Total : 2 courses and 4 credits		Total : 2 courses and 4 credits		Total : 1 course and 8 credits

**Note:** Students will select any one track (A or B) for DSE, AEC and SEC courses (preferable, not mandatory)



**Learning Outcomes Mapping: Programme Outcomes to Course Learning Outcomes  
(Semester I & Semester II)**

Programme Outcomes	Learning Outcome	LIS-COR-101	LIS-COR-102	LIS-COR-103	LIS-COR-104	LIS-COR-105	LIS-COR-106	LIS-AEC-107A	LIS-AEC-107B
To understand roles of a library in society as a memory institute		✓							
To provide foundation of knowledge organization			✓						
To provide foundation of resource description				✓					
To explore the possibilities of ICT in designing library services					✓				
To know applications of ICT in developing library systems and services						✓			
To understand the types and scopes of information resources, systems and services							✓		
To learn skills to retrieve digital information resources								✓	
To acquire skills in drafting technical communications									✓

  

Programme Outcomes	Learning Outcome	LIS-GEC-201	LIS-COR-202	LIS-COR-203	LIS-COR-204	LIS-COR-205	LIS-COR-206
To know the role of information in education and research		✓					
To know the structure & rules of enumerative classification			✓				
To manage bibliographic description and access points				✓			
To apply bibliographic data models in resource description					✓		
To apply content designation schemes in resource description						✓	
To know the basic management processes related to libraries							✓

**Learning Outcomes Mapping: Programme Outcomes to Course Learning Outcomes  
(Semester III & Semester IV)**

[illegible]

## Course Content Structure

	Course Code (Course Type)	Course Title	Course Summary	Marks Distribution			
				Term-end Exam	Int Assessment		Total Marks
					CE	PRC / PRJ	
S E M E S T E R I	LIS-COR-101 (Core)	Library and Society	Unit 1: Role of Libraries in Society Unit 2: Library Policies, Movements and Legislations Unit 3: Librarianship as a Profession Unit 4: Extension services, Networks and Consortia	40	10	NIL	50
	LIS-COR-102 (Core)	Document Classification (Theory)	Unit 1: Basic Concepts, Genesis and Schemes of Library Classification Unit 2: General Theory of Library Classification Unit 3: Applications of Classification Theories in Major Schemes Unit 4: Colon Classification 6 <sup>th</sup> edition	40	10	NIL	50
	LIS-COR-103 (Core)	Document Cataloguing (Theory)	Unit 1: Basic Concepts and Genesis Unit 2: Principles and Rules Unit 3: Cataloguing Codes Unit 4: Bibliographic Data Models	40	10	NIL	50
	LIS-COR-104 (Core)	Library Information Technology (Theory)	Unit 1: Physical and Logical Units of ICT Unit 2: Computer Networks and Distributed Information System Unit 3: Database Management System (DBMS) Unit 4: Programming Languages	40	10	NIL	50
	LIS-COR-105 (Core)	Library Information Technology (Practice)	Unit 1: Operating Systems, Unix-like OS (including Office Management Software) Unit 2: Programming language – Basic tasks and problem solving Unit 3: DBMS – Multipurpose DBMS and Bibliographic DBMS Unit 4: LAMP architecture	40	NIL	10 (PRC)	50
	LIS-COR-106 (Core)	Information Sources, Systems and Services	Unit 1: Information Resources Unit 2: Information Services and Products Unit 3: Electronic Information Products and Services Unit 4: Components and Users of Information Systems	40	NIL	10 (PRJ)	50
	LIS-AEC-107 A (Ability Enhancement)	Digital Information Literacy	Topics of this course aims to impart ability in learners for discovering academic resources through the help of new generation tools and services.	15+10 (Project + Presentation)			25
	LIS-AEC-107 B (Ability Enhancement)	Technical Writing	Topics of this course aims to impart ability in learners for better research communication with the help of many writing support tools.	15+10 (Project + Presentation)			25
S E M E S T R	LIS-GEC-201 (Generic Elective)	Information Resource Management	Unit 1: Information Sources and Information Resources Unit 2: Digital Information Literacy Unit 3: Accessing Electronic Resources Unit 4: Open Access Resources and OERs	40	10	NIL	50
	LIS-COR-202 (Core)	Document Classification (Practice)	Unit 1: Introduction to Dewey Decimal Classification (DDC) Unit 2: Dewey Decimal Classification - stage 1 Unit 3: Dewey Decimal Classification - stage 2 Unit 4: Dewey Decimal Classification - stage 3	40	NIL	10 (PRC)	50
	LIS-COR-203 (Core)	Document Cataloguing (Practice)	Unit 1: Introduction to AACR II Unit 2: AACR II – Rules for description Unit 3: AACR II – Rendering of access points Unit 4: AACR II – Steps for other entry forms	40	NIL	10 (PRC)	50

E R  II	LIS-COR-204 (Core)	Resource Description and Content Designation (Theory)	Unit 1: Cataloguing – Policies, Initiatives and Data models Unit 2: Subject Cataloguing and Authority Data Unit 3: Content Designation – Standards and Formats Unit 4: Content Designation – MARC 21 Family of Standards	40	10	NIL	50
	LIS-COR-205 (Core)	Resource Description and Content Designation (Practice)	Unit 1: CCC 5 <sup>th</sup> edition – Rules for description Unit 2: CCC 5 <sup>th</sup> edition – Rendering of access points Unit 3: Content Designation – CCF/B Unit 4: Content Designation – MARC 21 Family	40	NIL	10 (PRC)	50
	LIS-COR-206 (Core)	Library System Management	Unit 1: Administration of Libraries and Information Centres Unit 2: Library Housekeeping Operations and System Analysis Unit 3: Managerial Tasks of Library Administration Unit 4: Human Resource Management and Quality Cycles	40	Nil	10 (PRJ)	50
S E M E S T E R  III	LIS-COR-301 (Core)	Information Representation and Retrieval	Unit 1: Introduction to Information Retrieval System Unit 2: Subject Indexing: Principles and Practices Unit 3: Indexing Languages and Vocabulary Control Unit 4: Digital IR Systems Unit 5: IR Systems – Users, Evaluation and Trends	40	10	NIL	50
	LIS-COR-302 (Core)	Knowledge Organization (Theory)	Unit 1: Special Classification Schemes Unit 2: Classification and Knowledge Representation Unit 3: Classification as Knowledge Organization Systems (KOSs) Unit 4: Trends and Future of Library Classification	40	10	NIL	50
	LIS-COR-303 (Core)	Knowledge Organization (Practice)	Unit 1: Colon Classification – Advanced level Unit 2: Universal Decimal Classification Unit 3: SKOS and Classification Schemes Unit 4: Ontologies through Classification Schemes	40	NIL	10 (PRC)	50
	LIS-COR-304 (Core)	Automated Library System (Theory)	Unit 1: Introduction to Library Automation Unit 2: Components of Automated Library System Unit 3: Standards and Software related to Library Automation Unit 4: Trends and Future	40	10	NIL	50
	LIS-COR-305 (Core)	Automated Library System (Practice)	Unit 1: ILSs – Installation, configuration and customization Unit 2: ILSs – Subsystems and modules Unit 3: ILS Administration and User Interface Unit 4: ILS – Interoperability Issues	40	NIL	10 (PRC)	50
	LIS-DSE-306 A (Discipline Specific Elective)	Digital Resource Management	Unit 1: Introduction to Digital Information Resources Unit 2: Web 2.0 and Library 2.0 Unit 3: Content Designation through MARC 21 – Advanced level Unit 4: Metadata encoding– Generic and Domain-specific	40	10	NIL	50
	LIS-DSE-306 B (Discipline Specific Elective)	Knowledge Management	Unit 1: Information and Society Unit 2: Knowledge Economy and Knowledge Management, Unit 3: Content Management System Unit 4: Knowledge Dissemination and Marketing	40	10	NIL	50
	LIS-SEC-307 A (Skill Enhancement)	Multilingual Information Retrieval	Topics of this course aims to impart ability in learners in organizing multilingual resources and developing multilingual retrieval with focus on Indian languages.	15+10 (Project + Presentation)			25
	LIS-SEC-307 B (Skill Enhancement)	References and Citations: Network and Tools	Topics of this course aims to impart ability in learners for learning tools and techniques for exploring citation and reference networks.	15+10 (Project + Presentation)			25

S E M E S T E R  IV	LIS-DSE-401 A (Discipline Specific Elective)	Research Methodology	Unit 1: Introduction to Research Methodology Unit 2: Research Design and Methods Unit 3: Data Collection Tools, Data Analysis and Reporting Unit 4: Fundamentals of Statistics	40	10	NIL	50
	LIS-DSE-401 B (Discipline Specific Elective)	Informetrics	Unit 1: Statistics for Informetrics Unit 2: Introduction to Informetrics Unit 3: Indicators, Tools and Techniques Unit 4: Applications and Trends	40	10	NIL	50
	LIS-DSE-402 A (Discipline Specific Elective)	Digital Library System I	Unit 1: Historical and Theoretical Foundations Unit 2: Organization of Digital Objects - Issues and Challenges Unit 3: Architecture, Information Retrieval and User interfaces Unit 4: Design and Development of Digital Library Systems	40	10	NIL	50
	LIS-DSE-402 B (Discipline Specific Elective)	Community Information Systems and Services	Unit 1: Fundamentals of Community Information Services (CIS) Unit 2: Community Information Resources Unit 3: Community Information Resources: Organization and Access Unit 4: Digital Community Information Services	40	10	NIL	50
	LIS-DSE-403 A (Discipline Specific Elective)	Digital Library System II	Unit 1: Digital Library Software – Centralized Processing and Distributed Access Unit 2: Digital Library Software – Distributed Processing and Distributed Access Unit 3: Resource Organization Unit 4: Harvesting and Search Federation	40	NIL	10 (PRC)	50
	LIS-DSE-403 B (Discipline Specific Elective)	Semantic Web Technologies and Libraries	Unit 1: Introduction to Semantic Web Unit 2: Semantic Web Components Unit 3: Semantic Web Application Tools Unit 4: LODLAM – Linked Open Data for Libraries, Archive and Museums	40	NIL	10 (PRC)	50
	LIS-DSE-404 A (Discipline Specific Elective)	Library Service Platform	Unit 1: Library Service Platform – Concepts and Components Unit 2: Library Software Ecosystem Unit 3: Library Discovery Unit 4: Library Workflow Integration	40	NIL	10 (PRJ)	50
	LIS-DSE-404 B (Discipline Specific Elective)	Open Knowledge System	Unit 1: Introduction to Open Knowledge System Unit 2: Open Knowledge System - Mandate, Policies and Licensing Unit 3: Open Access Sources and Services Unit 4: Open Access – Interoperability and Integration	40	NIL	10 (PRJ)	50
	LIS-DSE-405 A (Discipline Specific Elective)	Data Carpentry and Libraries	Unit 1: From Data Carpentry to Library Carpentry Unit 2: Introduction to Openrefine Unit 3: Data Wrangling Techniques Unit 4: Data Extraction and Visualization	40	NIL	10 (PRJ)	50
	LIS-DSE-405 B (Discipline Specific Elective)	Virtual Learning and Libraries	Unit 1: Introduction to Virtual Learning Environment (VLE) Unit 2: VLE – Models and Resources Unit 3: Learning Content Management System (LCMS) Unit 4: Application of Open Source LCMS in VLE	40	NIL	10 (PRJ)	50
	LIS-COR-406 (Core)	Guided Research Project	On a selected topic pertaining to the applications of the professional techniques and their underlying principles. This guided research project is to be initiated at the 3 <sup>rd</sup> semester and is to be submitted for evaluation <b>within 21 days from the last examination date of the 4<sup>th</sup> semester examinations.</b>	75 (Text)	NIL	25 (Seminar Presentation)	100

## FIRST SEMESTER

**Course Code: LIS-COR-101**  
**Course Title: LIBRARY AND SOCIETY**

**Course Category: Core**  
**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
3	1	0	4	<b>40</b>	<b>10</b>	Nil	Nil	Nil	<b>50</b>	To provide learners an idea about the role of libraries in social development and in nation building.	<ul style="list-style-type: none"> <li>To know the historical and theoretical foundation of libraries;</li> <li>To explore the normative principles, legislation and IPR issues related to the discipline; and</li> <li>To understand professional duties of a librarian and the features of library networks, consortia and other extension services.</li> </ul>

### Module I : Library as a Social Institution

#### Unit 1: Role of Libraries in Society

- Objectives and functions of social institutions with special reference to libraries and information centers (LICs);
- Historical development of LICs, Information resources, Tools, techniques and technologies, Views of eminent thinkers;
- Basic laws and Five laws of Library Science, Modifications of Five laws, IFLA principles relating to bibliographical control, Other normative principles;
- Types of libraries (National and Copyright libraries, Academic libraries, Public libraries, Special libraries and Information centres, Other information agencies);
- Historical development of Library and Information Science as a discipline.

#### Unit 2: Library Policies, Movements and Legislations

- UNESCO charter of books, IFLA/UNESCO public library manifesto, other IFLA/UNESCO guidelines;
- International, and national programmes and policies (NAPLIS etc), Recommendations of National Knowledge Commission, India; NDLI and NVLI (in India)
- Library movement and development in India with special reference to West Bengal;
- Library legislation – needs, Indian scenario, West Bengal Public Libraries Act, 1979 (including amendments), Comparative study of library legislations in Indian states;
- Laws relating to information with special reference to India, including Press and Registration Act, Delivery of Books and Newspapers (Public Libraries) Act, 1954, Indian Copyright Act, 1957 with its amendments, Intellectual Property Rights, Right to Information, 2005 etc.

### Module II: Profession, Public relations and Extension activities

#### Unit 3: Librarianship as a Profession

- Occupation, Vocation and Profession, Attributes of profession;
- Librarianship as a profession in India and abroad;
- Professional ethics and duties of Library and Information workers, Information ethics;
- Professional associations and their role in library development (Indian and International);
- IFLA Core activities, Library and Information Science education and research: developments and trends.

#### Unit 4: Extension services, Networks and Consortia

- Public relations and extension activities - Definition, facets and programmes;
- Community information services in India and abroad, Local history collection and Area profile;
- Resource sharing and Networking – Basic concepts;
- Library Networks – National and International levels.;
- Library Consortia – National and International levels.

## FIRST SEMESTER

**Course Code: LIS-COR-101**

**Course Title: LIBRARY AND SOCIETY**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Baker, D., & Evans, W. (2011). *Libraries and society: Role, responsibility and future in an age of change*. Oxford: Chandos Publishing.
- Davis, D. W. (1975). *Public libraries as cultural and social centres*. New York: Scarecrow.
- Delanty, G. (2001). *Challenging knowledge: The university in the knowledge society*. Open Univ Pr.
- Feather, J. (2000). *The information society*. London: Library Association, IFLA. (1977). *Standards for library service* (2nd ed.). Munich: Verlag.
- Khanna, J. K. (1987). *Library & society*. Kurukshetra: Research Publications.
- Krishan Kumar, (1987). *Library organization*. Delhi: Vikas.
- Ranganathan, S. R. (1953), *Library Legislation. Hand Book to Madras Library Act. Madras*: Madras Library Association.
- Ranganathan, S. R. (1957). *Five laws of library science*. Delhi: UBS.
- Ranganathan, S. R., & Neelameghan, A. (1972). *Public library system*. Bangalore: Sarada Ranganathan Endowment.
- Rout, R. K. (1991). *Library legislation in India*. New Delhi: Reliance.
- UNESCO. (2000). *UNESCO School Library Manifesto: The school library in teaching and learning for all*. The Hague: IFLA Headquarters.
- UNESCO., & International Federation of Library Associations and Institutions. (1995). *Public library manifesto*. The Hague, Netherlands: IFLA.
- Vashisht, C. P. (1994). *Library movement and library development in India*. Delhi: ILA.
- Venkatappaiah, V. (1990). *Indian library legislation* (Vol. 2). New Delhi: Daya.
- Venkatappaiah, Velaga (1995). *Model State Library Policy and Legislation (For the States and Union Territories)* Delhi: Indian Library Association.

### Additional Reading List

- Banerjee, D. N. (1994). *India's National Library*. Herald of Library Science: 33, pp.3-4.
- Bell, D. (1980). *The social framework of the information society*. In Derrouzos M C & Moses, 1 (eds), *The computer age: a twenty year view*. Cambridge: MIT Press.
- Cornish, Graham P. (2001). *Interpreting the law for libraries, archives and information services* (Rev, 3rd.). London: Facet Publishing.
- India. (1959). *Advisory Committee for Libraries, Report*. Delhi: Manager of

Publications.

- India. Ministry of Human Resource Development Department of Culture (1986). *National Policy on Library and Information System - A Presentation*. New Delhi.
- Kent, A., Lancour, H., & Daily, J. E. (1991). *Encyclopedia of library and information science*. New York: Dekker.
- Kesavan, B. S. (1961). *India's National Library*. Calcutta : The National Library
- McGarry, K. J. (1993). *The changing concept of information: an introductory analysis*. (2nd. ed.). London: Facet Publishing.
- Mittal, R. L. (1984). *Library administration: theory & practice* (5th ed.). Delhi: Metropolitan.
- National Knowledge Commission, Working Group on Libraries (2006), *Recommendations*
- Norman, S. (2001). *Practical copyright for information professional*. London: Facet Publishing.
- Pilling, S., & Kenna, S. (2002). *Co-operation in action: Collaborative initiatives in the world of information*. London: Facet Pub.
- Planning Commission (1984). *Report of the Working Group on Modernisation of Libraries and Informatics for the Seventh Five Year Plan 1985-90*, New Delhi.
- Sharma, Pandey S.K. (1987). *Library & society*. New Delhi: Ess Ess Publications.
- Shera, J. H. (1970). *Sociological foundations of librarianship*. New York: Asia Pub. House.
- Shera, J. H. (1970). *The foundations of education of librarianship*. Bombay: Asia.
- SinghaRoy, D. K. (2014). *Knowledge society: New identities in emerging India*. New York: Cambridge University Press.
- Taragowski, A.S. (1998). *Global information infrastructure: the birth, vision and architecture*. Harrisburg: Idea Group.
- University Grants Commission (1959). *University and College Libraries, Containing the Report of the Library Committee of the UGC and the Proceedings of the Seminar on From Publisher to Reader held on March 4-7, 1957*, UGC: New Delhi.
- Vickery B. C., & Vickery A. (1987). *Information science in theory and practice*. London: Butterworth.
- Withers, F. N. (1974). *Standards for library service: an international survey*. Paris: Unesco.
- Yelfand, M. A. (1974). *University Libraries in Developing Countries*. Delhi: University of Delhi.

## FIRST SEMESTER

**Course Code: LIS-COR-102**

**Course Title: DOCUMENT CLASSIFICATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	10	Nil	Nil	Nil	50	To introduce learners with the basic processes of knowledge organization with special reference document classification.	<ul style="list-style-type: none"> <li>To acquire knowledge of historical and theoretical foundation of library classification;</li> <li>To know the features of traditional library classification schemes; and</li> <li>To understand the methods related to practical classification.</li> </ul>

### Module I: Theories of Document Classification

#### Unit 1: Basic Concepts, Genesis and Schemes of Library Classification

- Meaning, purpose and function of classification, Knowledge classification and Document classification;
- Classification schedule and its components, Kinds of scheme: Enumerative and Faceted;
- Subject and disciplines: Concept and features, Types of subjects, Modes of formation of subjects; Isolates and auxiliaries: Common (ACI and PCI) and special;
- Facets and Facet Analysis, Speciators and their kinds, Phase relations: levels and kinds/nature;
- Schemes of Library Classification and Switching Languages – BSO.

#### Unit 2: General Theory of Library Classification

- Normative principles – introduction, Contribution of CRG, FID/CR and DRTC;
- Laws, Canons, Principles and Postulates;
- Three planes of work, Fundamental categories;
- Application of normative principles in DDC, UDC and CC;
- Notational techniques in different classification systems.

### Module II: Applications of Document Classification

#### Unit 3: Applications of Classification Theories in Major Schemes

- Knowledge classification Vs. Document classification
- Document Classification – Prerequisites, Steps, Rules
- Colon Classification – History, Genesis and Structure;
- Dewey Decimal Classification – History, Genesis and Structure;
- Universal Decimal Classification – History, Genesis and Structure;

#### Unit 4: Colon Classification 6<sup>th</sup> edition

- Colon Classification – Nature and Features;
- Colon Classification – Structure and Rules;
- Facet analysis – Process and Steps
- Building of class number - Simple subjects;
- Colon Classification – Use of index.



## FIRST SEMESTER

**Course Code: LIS-COR-102**

**Course Title: DOCUMENT CLASSIFICATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Batty, C. D. (1966). *An introduction to colon classification*. London: Bingley.
- Bliss, H. E. (1935). *System of Bibliographic Classification*. New York : H.W. Wilson.
- Chan, L. M. (1985). *Cataloguing and classification: an introduction*. New York: McGraw Hill.
- F.I.D. (1993). *Universal Decimal Classification*. IME.
- Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
- Foskett, A. C. (1996). *The subject approach to information*. (5th ed.). London: Clive Bingley.
- Foskett, D. J. (1974). *Classification and indexing in social sciences*. London: Aslib.
- Krishan Kumar, (1980). *Theory of classification*. New Delhi: Vikas.
- Ranganathan, S. R. (1966). *Elements of library classification* (2nd ed.). Bombay: UBS.
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### Additional Reading List

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## FIRST SEMESTER

**Course Code: LIS-COR-103**

**Course Title: DOCUMENT CATALOGUING (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To introduce learners with the basic processes of resource description with the help of bibliographic data standards and catalogue codes.</li> <li>To understand historical and theoretical foundation of resource description and library cataloguing;</li> <li>To know normative principles and cataloguing codes;</li> <li>To know the authority data management and to study the initiatives and trends of library cataloguing.</li> </ul>

### Module I: Library Catalogue: Physical Forms & Logical Frameworks

#### Unit 1: Basic Concepts and Genesis

- Library catalogue – historical and theoretical foundations, Difference of Library catalogue from Library Accession Register, Shelf List and Bibliography;
- Objectives (objectives propounded by Cutter, Osborn, Lubetzky, Svenonius and FRBR) and Functions of library catalogue;
- Cataloguing rule base – need, types and applications;
- Physical forms – book, sheaf, card and machine-readable (including OPAC) forms – their advantages and disadvantages and suitability in different types of libraries, Inner forms – dictionary, classified and alphabetico-classed forms and their comparative studies;
- Entries – types, formats and their functions, Filing of entries – rules and tools.

#### Unit 2: Principles and Rules

- Normative principles – objectives, scope and applications;
- Normative principles – history and time line of development, International Conference on Cataloguing Principles (ICCP), 1961;
- Canons and principles of cataloguing as propounded by Ranganathan;
- IME/ICC principles;
- Standardization of Bibliographic Description – ISBDs, Consolidated ISBD, Revised ISBDs, FRBRized ISBDs.

### Module II: Codes and Data Models

#### Unit 3: Cataloguing Codes

- Cataloguing codes – definition, objectives, scope, need, components;
- Cataloguing codes – historical development;
- Features of Anglo-American Cataloguing Rules (AACR 2);
- Features of Classified Catalogue Code (CCC 5<sup>th</sup> edition);
- Features of RDA (Resource Description and Access).

#### Unit 4: Bibliographic Data Models

- Introduction to Bibliographic Data Models;
- ISBD as Bibliographic Models;
- ER Data Modeling in Bibliographic Universe;
- IFLA initiatives - FRBR, FRAD, FRSAD, LRM ;
- LoC initiatives and other – BIBFRAME 2.0, XOBIS.

## FIRST SEMESTER

**Course Code: LIS-COR-103**

**Course Title: DOCUMENT CATALOGUING (THEORY)**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- ALA (1968). *ALA Rules for filing Catalog Cards*. Chicago: ALA.
- Chan, L. M. (1994). *Cataloging and classification: An introduction*. New York: McGraw-Hill.
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### Additional Reading List

- Bean, C.A., & Green, R. (2001). *Relationships in organization of knowledge*. London: Kluwer.
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- Patton, G. E., & International Federation of Library Associations and Institutions. (2009). *Functional requirements for authority data: a conceptual model*. München: K.G. Saur.
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## FIRST SEMESTER

**Course Code: LIS-COR-104**

**Course Title: LIBRARY INFORMATION TECHNOLOGY (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution					Objectives	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To bestow knowledge of information technologies and to learn the applications of ICT in shaping modern libraries.</li> <li>To learn basic ICT concepts;</li> <li>To explore the possibilities of ICT in designing library services by using database and networking technologies;</li> <li>To know the basic of programming languages that are use for problem solving in libraries.</li> </ul>

### Module I: Basics of ICT

#### Unit 1: Physical and Logical Units of ICT

- Data, information and knowledge, ICT – definition, scope, application in human activities, social implication, Application of ICT in activities of library and information centres;
- Hardware and Devices related to ICT; Data Representation in Computer
- System software, Appalachian software, Operating Systems, Open source software and open standards
- Computer programing languages – classification, generations, program development tool and programing process
- Overview of popular high-level languages – C, C++, Java etc.

#### Unit 2: Computer Networks and Distributed Information System

- Computer networks – definition, scope, purpose, features and advantages, Types of network – LAN, MAN and WAN;
- Internet – origin, development, architecture, connection options; Internet in India – GIAS, ISPs and connection options; Internet addressing system – IP address and domain name system, Internet, Intranet and Extranet;
- Internet resource access tools – Telnet, FTP, Gopher, Archie, Mosaic and WWW;
- Web retrieval tools – subject directories, search engines and meta search engines;
- Distributed information system and library – Web 2.0, Library 2.0, Linked data, Cloud computing, Semantic Web.

### Module II: Applications in Libraries

#### Unit 3: Database Management System (DBMS)

- Concept, scope, purpose and advantages of DBMS;
- Entity, attributes and properties, Field, record and database;
- Data models – hierarchical, network and relational, Basics of RDBMS;
- WINISIS as bibliographic database management system;
- Bibliographic databases, Search strategy and techniques of data retrieval, CDROM database searching.

#### Unit 4: Programming Languages

- High-level Programming Languages;
- Programming in ‘C’ (level 1) – Basic skills;
- Programming in ‘C’ (level 2) – Loop & Array;
- Basic Scripting Languages – HTML, CSS, PHP;
- AMP architecture – Apache, MySQL/MariaDB, PHP

## FIRST SEMESTER

**Course Code: LIS-COR-104**

**Course Title: LIBRARY INFORMATION TECHNOLOGY (THEORY)**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Basandra, Suresh K. (2002). *Computers today*. New Delhi: Galgotia.
- Bob, W., & McKellen, M. (1995). *A beginner's guide to the PC*. Delhi: Affiliated East West Press,.
- Bradley, P. (1999). *Internet power searching: the advanced manual*. New York: Neal-Schuman Publishers.
- Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.
- Bradley, P., & Aslib. (2000). *World Wide Web: how to design and construct web pages*. London: ASLIB.
- Deenadayalu, R. (1990). *Computer science* (Vol. 2). New Delhi: TMH.
- Engard, N. C. (2009). *Library mashups: Exploring new ways to deliver library data*. Medford, N.J: Information Today, Inc.
- Engard, N. C. (2010). *Practical open source software for libraries*. Oxford: Chandos Publishing.
- Gorman, M. (2003). *The enduring library: technology, tradition, and the quest for balance*. Chicago: American Library Association.
- Hagler, R. (1997). *The bibliographic record and information technology*. Chicago: American Library Association.
- Jacsó, P., & Lancaster, F. W. (1999). *Build your own database*. Chicago: American Library Association.
- Jean, G. (2011). *Digital library*. New Delhi: World Technologies.
- Kam, D. (2009). *Role and policy implications of ICT in India*. New Delhi: Shree Publishers & Distributors.
- Library of Congress. (1988). *Advances in library information technology*. Washington, D.C: Cataloging Distribution Service, Library of Congress.
- Matthews, J. R. (1980). *Choosing an automated library system: A planning guide*. Chicago: American Library Association.
- Mukhopadhyay, P. (2013). *Course of action: Library information technology*. Kolkata: Prova Prakashani.
- Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.
- Walsh, T. (2005). *Introducing ICT: Basic to intermediate*. Dublin: Gill & Macmillan.
- Williams, H. E., & Lane, D. (2002). *Web database applications with PHP & MySQL*. Beijing: O'Reilly.

### Additional Reading List

- Chartered Institute of Library and Information Professionals (Great Britain). (1998). *Multimedia information & technology: MmIT*. London, England: Multimedia Groups of Aslib.
- Chowdhury, G. G., & Chowdhury, S. (2001). *Searching CD-ROM and online information sources*. London: Facet Publishing.
- Kernighan, B. W., & Ritchie, D. M. (1988). *The C programming language*. Englewood Cliffs, N.J: Prentice Hall.
- Leon, A. & Mathews, L. (2004.). *Fundamentals of information technology* (Latest edition.). Chennai: Leon Tech World.
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- Satyanarayana, N. R. (1995). *A manual of computerisation in libraries*. New Delhi: Wishwa Prakashan.
- Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.
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- Tanenbaum, A. S. (1984). *Structured computer organization*. Englewood Cliffs, N.J: Prentice-Hall.
- Tanenbaum, A. S. (1996). *Computer networks*. Upper Saddle River, N.J: Prentice Hall PTR.
- Vaughan, J., & ALA TechSource. (2011). *Web scale discovery services*. Chicago, Ill: ALA TechSource.
- Viswanathan, T. (1992). *Telecommunication switching systems and networks*. New Delhi: Prentice Hall of India Private Ltd.

## FIRST SEMESTER

**Course Code: LIS-COR-105**

**Course Title: LIBRARY INFORMATION TECHNOLOGY (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To provide learner basic ICT skills required for running a modern ICT-enabled library with a focus on open source software and open standards.</li> <li>To acquire skills for managing UNIX-like operating systems in a networked environment;</li> <li>To learn practical skills for bibliographic DBMSs ; and</li> <li>To know installation and configuration of open source LAMP based packages for library management.</li> </ul>

### Module I: Operating System and Basic Utilities

#### Unit 1: Operating Systems, Unix-like OS (including Office Management Software)

- MSDOS and Windows OS;
- Unix-like OS;
- Multiuser OS and related tools – telnet, ftp, ssh, http;
- Ubuntu LTS version (latest LTS);
- Office management software (Open Source).

#### Unit 2: Programming language – Basic tasks and problem solving

- C programming language – Use of GCC in Unix-like OS;
- C programming language – Basic tasks;
- C programming language – Loop and Array;
- Markup language – HTML, XML;
- Scripting language – PERL/PHP.

### Module II: DBMS and LAMP applications

#### Unit 3: DBMS – Multipurpose DBMS and Bibliographic DBMS

- MySQL/MariaDB – Basic tasks;
- MySQL/MariaDB – Advanced tasks as backend for LISs;
- Use of MySQL/MariaDB GUI, Backup and Restoration;
- WINISIS – Basic and Advanced level;
- Database search and retrieval.

#### Unit 4: LAMP architecture

- Installation and Configuration of LAMP in Ubuntu
- Connecting components of LAMP;
- Installation and basic configuration of open source LAMP software - Generic;
- Installation and basic configuration of open source LAMP software – LIS domain;
- Installation and basic configuration of open source LAMP software – Advanced;

## FIRST SEMESTER

**Course Code: LIS-COR-105**

**Course Title: LIBRARY INFORMATION TECHNOLOGY (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

### Essential Reading List

- Beukes-Amiss, C. M., & Beukes-Amiss, CM. (2013). *Information storage and retrieval software: WinISIS*.
- Bob, W., & McKellen, M. (1995). *A beginner's guide to the PC*. Delhi: Affiliated East West Press,.
- Bradley, P. (1999). *Internet power searching: the advanced manual*. New York: Neal-Schuman Publishers.
- Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.
- Bradley, P., & Aslib. (2000). *World Wide Web: how to design and construct web pages*. London: ASLIB.
- DuBois, P. (2009). *MySQL*. Upper Saddle River, N.J: Addison-Wesley.
- Engard, N. C. (2009). *Library mashups: Exploring new ways to deliver library data*. Medford, N.J: Information Today, Inc.
- Engard, N. C. (2010). *Practical open source software for libraries*. Oxford: Chandos Publishing.
- Gerner, J. (2006). *Professional LAMP: Linux, Apache, MySQL, and PHP Web development*. Indianapolis, IN: Wiley Pub.
- Hunger, S. (2001). *Debian GNU/Linux bible*. Indianapolis (In.) [etc.: Hungry Minds.
- Kanetkar, Y. P. (2013). *Let us C*. New Delhi: BPB Publications.
- Miguel, P. J. (2013). *Instant Debian: Build a Web Server*. Packt Publishing.
- Mukhopadhyay, P. (2013). *Course of action: Library information technology*. Kolkata: Prova Prakashani.
- Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.
- Raggi, E. (2011). *Beginning Ubuntu Linux*. New York, NY: Apress.
- Rosebrock, E., & Filson, E. (2006). *Setting up LAMP: Getting Linux, Apache, MySQL, and PHP Working Together*. Hoboken: John Wiley & Sons.
- Schwartz, R. L., Foy, B. D., & Phoenix, T. (2017). *Learning Perl: Making easy things easy and hard things possible*. Sebastopol, CA: O'Reilly.

### Additional Reading List

- Botto, Francis. (1993). *Multimedia, CD-ROM and compact disc: a guide for users and developers*. New Delhi: Galgotia.
- Chartered Institute of Library and Information Professionals (Great Britain). (1998).

*Multimedia information & technology: MmIT*. London, England: Multimedia Groups of Aslib.

- Chowdhury, G. G., & Chowdhury, S. (2001). *Searching CD-ROM and online information sources*. London: Facet Publishing.
- Deenadayalu, R. (1990). *Computer science* (Vol. 2). New Delhi: TMH.
- Grossett, R. E. (2005). *Use and effectiveness of CDS/ISIS for Windows (WINISIS) in two special libraries: Case study*.
- Hagler, R. (1997). *The bibliographic record and information technology*. Chicago: American Library Association.
- Jacsó, P., & Lancaster, F. W. (1999). *Build your own database*. Chicago: American Library Association.
- Jean, G. (2011). *Digital library*. New Delhi: World Technologies.
- Kelley, A., & Pohl, I. (1997). *A book on c: Programing in c*. Boston, MA: Addison-Wesley.
- Kernighan, B. W., & Ritchie, D. M. (1988). *The C programming language*. Englewood Cliffs, N.J: Prentice Hall.
- Leon, A. & Mathews, L. (2004.). *Fundamentals of information technology* (Latest edition.). Chennai: Leon Tech World.
- Library Association., & Library Information Technology Centre. (1996). *Library technology*. London: Published jointly by the Library Association and the Library Information Technology Centre.
- Library of Congress. (1988). *Advances in library information technology*. Washington, D.C: Cataloging Distribution Service, Library of Congress.
- Mathews, J. R. (1980). *Choosing an automated library system: A planning guide*. Chicago: American Library Association.
- Rajasekharan, K., & Nafala, K. M. (2007). *Creation of digital document archives with Winisis*. Kerala Institute of Local Administration.
- Satyanarayana, N. R. (1995). *A manual of computerisation in libraries*. New Delhi: Wishwa Prakashan.
- Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.

## FIRST SEMESTER

**Course Code: LIS-COR-106**

**Course Title: INFORMATION SOURCES, SYSTEMS AND SERVICES**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	Nil	10	Nil	Nil	50	To extend knowledge related to information resources, products and services that are relevant for users of a modern library.	<ul style="list-style-type: none"> <li>To understand the types and scopes of traditional information resources, products and services;</li> <li>To understand the types and scopes of digital information resources, products and services;</li> <li>To know the users of information systems to serve better.</li> </ul>

### Module I: Traditional Information Resources

#### Unit 1: Information Resources

- Information Sources – categories and features, Information sources vs. resources, Organization of information sources;
- Documentary Sources: Primary, Secondary and Tertiary, Institutional and Human Sources;
- Non print materials including digital information sources, Traditional Vs. Digital sources of information;
- Reference Books: Meaning, Differences with traditional book, Categories of reference books, Indian reference sources;
- Evaluation of Reference and Information Sources.

#### Unit 2: Information Services and Products

- Concept, definition, scope and types;
- Reference Referral, Documentation and Information Services: Definition, Need, Characteristics and Differences;
- Theories of reference services, Reference Process: Search strategy and techniques, Reference Questions and Reference Interview;
- Information services – types, scopes, alerting services, table-of-content services, SDI services, translation services, and so on;
- Information products – in-house information products (newsletter, house bulleting etc), information analysis and consolidation (IA+C) products, trade & product bulletins, grey literature.

### Module II: Digital Information Resources - Types, Components and Users

#### Unit 3: Electronic Information Products and Services

- Electronic information sources and services – Conceptual foundations, Types and characteristics, Traditional Vs. Digital information sources;
- Bibliographic databases, Citation databases, Full-text databases, Portals, Vortals and Gateways, Multimedia based information products, Open access knowledge system: products and services;
- Alerting services (CAS & e-CAS, SDI & e-SDI, RSS based services), Bibliographic, Referral, Literature search, Electronic document delivery and machine translation services;
- Virtual Reference Services: Tools and Techniques (Publishers based services – Xrefer, Credo etc, Library based services – QuestionPoint, VRD etc, Use of asynchronous and synchronous virtual communication tools);
- Trends and future.

#### Unit 4: Components and Users of Information Systems

- Information Institutions: Evolution, growth, types and role in information transfer cycle; Information centres: types, activities and their organization; Data Centres & Data Banks: Activities and services; Referral Centres and Clearing Houses, Information Analysis Centres: Activities, services and products;
- Information System: General System Theory, Design issues and principles;
- Information Systems and Networking: Meaning, Importance and Structure, Design and development of information systems – theories, models and steps;
- Structure and Services of Global, Regional and National Information Systems
- Users' Study : Types and Techniques; Information need analysis.



## FIRST SEMESTER

**Course Code: LIS-COR-106**

**Course Title: INFORMATION SOURCES, SYSTEMS AND SERVICES**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Bopp, R. E., & Smith, L. C. (1995). *Reference and information services: An introduction*. Englewood, Colo: Libraries Unlimited.
- Cheney, F. N. (1975). *Fundamental reference sources*. Chicago: American Library Association.
- Foskett, D. J. (1994). *Information service in libraries*. New Delhi: Anmol Publications.
- Guha, B. (1983). *Documentation and information: services, techniques and systems*. Calcutta: World Pr. Private Ltd.
- Katz, William A. (1992). *Introduction to Reference Work. Vol. 1: Basic Information Sources*. 6th ed. New York: McGraw-Hill.
- Krishan Kumar (1996). *Reference service*. New Delhi: Vikas Pub. House.
- Lannon, J. M. (1985). *Technical writing*. Boston: Little, Brown.
- Li, X., & Crane, N. (1993). *Electronic style: a guide to citing electronic information*. Westport: Meckler.
- Mills, G. H., & Walter, J. A. (1986). *Technical writing*. New York: Holt, Rinehart, and Winston.
- Mitchell, E., & Walters, S. A. (1995). *Document delivery services: Issues and answers*. Medford, NJ: Learned Information.
- Ranganathan, S. R. (2006). *Reference service*. Bangalore: Sarada Ranganathan Endowment for Library Science.
- Saracevic, T., Unesco., & UNISIST (Program). (1985). *A course in information consolidation: A handbook for education and training in analysis, synthesis and repackaging of information (preliminary version)*. Paris: General Information Programme and UNISIST, United Nations Educational, Scientific and Cultural Organization.
- Saracevic, T., Wood, J. B., & Unesco. (1981). *Consolidation of information: A handbook on evaluation, restructuring, and repackaging of scientific and technical information*. Paris: General Information Programme and UNISIST of the United Nations Educational, Scientific and Cultural Organization.
- Seetharama, S. (1997). *Information consolidation and repackaging: Framework, methodology, planning*. New Delhi: Ess Ess Publications.
- Walford, A. J., Mullay, M., & Schlicke, P. (1989). *Guide to reference material*. Gran Bretaña: Library Association.
- Weisman, H. M. (1972). *Information systems, services, and centers*. New York: Becker.

### Additional Reading List

- Cassell, K. A., & Hiremath, U. (2013). *Reference and information services: An introduction*.
- Crawford, J. (2006). *The Culture of evaluation in library and information services*. Burlington: Elsevier Science.
- Crawford, J., & Aslib. (2000). *Evaluation of library and information services*. London: Aslib.
- CSP International Ltd. (1986). *The Global structure of the electronic information services industry*. London: British Library.
- Farmer, L. S. J. (2007). *The human side of reference and information services in academic libraries: Adding value in the digital world*. Oxford: Chandos.
- Fourie, D. K., & Dowell, D. R. (2002). *Libraries in the information age: An introduction and career exploration*. Greenwood Village, Colo: Libraries Unlimited.
- Gorman, G. E. (2001). *Information services in an electronic environment*. Lanham, Md: Scarecrow Press.
- Katz, B. (2002). *Introduction to reference work*. Boston [etc.]: McGraw-Hill.
- Katz, W. A., & Tarr, A. (1978). *Reference and information services: a reader*. Metuchen, N.J: Scarecrow Press.
- Lankes, R. D., & Nast, P. (2008). *Virtual reference service: from competencies to assessment*. New York: Neal-Schuman Publishers.
- Lipow, A. G. (2003). *The virtual reference librarian's handbook*. Berk[e]ley [Calif.: Library Solutions Press.
- Lipson, C. (2006). *Cite right: A quick guide to citation styles--MLA, APA, Chicago, the sciences, professions, and more*. Chicago: University of Chicago Press.
- Primary Research Group. (2003). *Creating the virtual reference service*. New York, N.Y: Primary Research Group.
- Pugh, L. (2007). *Change management in information services*. Aldershot, Hampshire, England: Ashgate.
- Woodsworth, A., & Williams, J. F. (1994). *Managing the economics of owning, leasing, and contracting out information services*. Aldershot, England: Gower.

## FIRST SEMESTER

**Course Code: LIS-AEC-107 A**

**Course Title: DIGITAL INFORMATION LITERACY**

**Course Category: Ability Enhancement**

**Course Type: Practicum**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	<b>PRJ</b>	PRC	Prst			
1	0	1	2	Nil	Nil	15	Nil	10	25	To impart ability in learners for discovering academic resources through the help of new generation tools and services.	<ul style="list-style-type: none"> <li>To learn 'how-to' search academic resources and check their authentication;</li> <li>To discover LIS specific resources and 'how-to' organize retrieved resources for future use;</li> <li>To know using digital access brokers in resource discovery.</li> </ul>

- Prerequisites for digital information literacy;
- Skills for resource discovery – searching and retrieval;
- LIS specific resources – pathfinder services and open access resources;
- Concepts of copyrights and other IPRs;
- Open access licensing systems;
- Access to information services;

- Development of personal search environment (SDI, TOC, RSS/XML, Alerting services);
- Use of digital access brokers in resource discovery;
- Two dimensional search;
- Organization of retrieved resources.

## FIRST SEMESTER

**Course Code: LIS-AEC-107 B**

**Course Title: TECHNICAL WRITING**

**Course Category: Ability Enhancement**

**Course Type: Practicum**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	<b>PRJ</b>	PRC	Prst			
1	0	1	2	Nil	Nil	15	Nil	10	25	To impart ability in learners for better research communication with the help of many writing support tools.	<ul style="list-style-type: none"> <li>To learn to differentiate technical writing from creative writing, and know the prerequisites.</li> <li>To know use of writing support tools in standalone, and in online mode;</li> <li>To know automated reference management.</li> </ul>

- Technical writing vs. Creative writing;
- Writing tools – Management of long documents;
- GPT based tools, Grammar checking tools – online and embedded;
- Avoiding plagiarism – concepts and tools;
- Reference management in technical writing;

- Reference management tools (Zotero) and plugins;
- Presentation of technical data, Data visualization;
- Research report writing;
- Archiving research reports;
- Citation and Reference networks – tools and services.

## FIRST SEMESTER

Course Code: LIS-AEC-107

Course Category: Ability Enhancement  
Course Type: Practicum

### 107 A : DIGITAL INFORMATION LITERACY

### 107 B : TECHNICAL WRITING

#### Digital Information Literacy

- Andretta, S. (2012). *Ways of experiencing information literacy: Making the case for a relational approach*. Elsevier.
- Carlson, J., & Johnston, L. (2015). *Data information literacy: Librarians, data, and the education of a new generation of researchers*. Purdue University Press.
- Daugherty, A., & Russo, M. F. (2007). *Information literacy programs in the digital age: Educating college and university students online*. Chicago: Association of College and Research Libraries.
- Gavin, C. (2008). *Teaching information literacy: A conceptual approach*. Lanham, Md: Scarecrow Press.
- Godwin, P., & Parker, J. (Eds.). (2008). *Information literacy meets library 2.0*. Facet Publishing.
- Grassian, E. S., & Kaplowitz, J. R. (2001). *Information Literacy Instruction: Theory and Practice*. *Information Literacy Sourcebooks*. Neal-Schuman Publishers, Inc., 100 Newfield Ave., Edison, NJ 08837.
- Grassian, E. S., & Kaplowitz, J. R. (2005). *Learning to lead and manage information literacy instruction*. New York: Neal-Schuman Publishers.
- Lloyd, A. (2010). *Information literacy landscapes: Information literacy in education, workplace and everyday contexts*. Elsevier.
- Radcliff, C. J. (2007). *A practical guide to information literacy assessment for academic librarians*. Westport, connecticut: Libraries unlimited.
- Secker, J., & Coonan, E. (Eds.). (2012). *Rethinking information literacy: a practical framework for supporting learning*. Facet publishing.
- Spitzer, K. L., Eisenberg, M. B., & Lowe, C. A. (1998). *Information Literacy: Essential Skills for the Information Age*. Information Resources Publications, Syracuse University, 4-194 Center for Science and Technology, Syracuse, NY 13244-4100

#### Technical Writing

- Basu, B. N. (2007). *Technical Writing*. New Delhi: Prentice-Hall of India.
- Blake, G., & Bly, R. W. (1993). *The elements of technical writing* (p. 173). New York, NY: Macmillan.
- Driscoll, M., & Reid Jr, J. E. (1999). Web based training: An overview of training tools for the technical writing industry. *Technical Communication Quarterly*, 8(1), 73-86.
- Fitzpatrick, C. Y. (2006). *Peer review in an online technical writing course* (pp. 1-149). Indiana University.
- Gerson, S. J., & Gerson, S. M. (2000). *Technical writing: Process and product*. Prentice-Hall Order Processing Center, PO Box 11071, Des Moines, IA 50336-1071.
- Greenlaw, R. (Ed.). (2012). *Technical Writing, Presentational Skills, and Online Communication: Professional Tools and Insights: Professional Tools and Insights*. IGI Global.
- Laplane, P. A. (2018). *Technical Writing: A Practical Guide for Engineers, Scientists, and Nontechnical Professionals*. CRC Press.
- Pfeiffer, W. S. (1996). *Technical writing a practical approach*. Prentice-Hall, Inc..
- Pringle, A. S., & O'Keefe, S. (2003). *Technical writing 101: A real-world guide to planning and writing technical documentation*. Scriptorium Publishing.
- Reep, D. C. (2011). *Technical writing: Principles, strategies, and readings*. Boston, Mass: Longman.
- Van Laan, K. (2012). *The Insider's Guide to Technical Writing*. XML Press.
- Winberg, C., van der Geest, T., Lehman, B., & Nduna, J. (2010). Teaching technical writing in multilingual contexts: A meta-analysis. *Southern African Linguistics and Applied Language Studies*, 28(3), 299-308.

## SECOND SEMESTER

**Course Code: LIS-GEC-201**

**Course Title: INFORMATION RESOURCE MANAGEMENT**

**Course Category: Generic Elective**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
3	1	0	4	40	10	Nil	Nil	Nil	50	To introduce learners with the digital information resources with a focus on open access resources and open educational resources.	<ul style="list-style-type: none"> <li>To understand the role of information resources in education and research;</li> <li>To acquire digital information literacy skills; and</li> <li>To know availability of open access resources and OERs in respective domains.</li> </ul>

### Module I: Information Literacy

#### Unit 1: Information Sources and Information Resources

- Information Sources – categories and features, Information sources vs. Information resources, Organization of information sources;
- Role of information resources in education and research;
- Documentary Sources: Primary, Secondary and Tertiary;
- Institutional and Human Sources; Non print materials including digital information sources, Traditional Vs. Digital sources of information;
- Reference Books: Meaning, Differences with traditional book, Categories of reference books, Indian reference sources.

#### Unit 2: Digital Information Literacy

- Information literacy – elements, standards, indicators;
- Information literacy – role in knowledge society, digital divide;
- Digital information skills – programmes, initiatives, channels;
- Skills related to searching and browsing;
- Skills related to citation management;
- Managing social media.

### Module II: Information Resources: Digital and Open

#### Unit 3: Accessing Electronic Resources

- Accessing union catalogues;
- Accessing bibliographic databases;
- Accessing full-text databases and e-journal portals
- Accessing electronic alerting services;
- Managing Personal Information Environment.

#### Unit 4: Open Access Resources and OERs

- Open Access – what and why;
- Serials crisis and Open Access;
- Open Access – Gold path and Green path;
- Open Access ETDs, Open Access text books.
- Open Educational Resources (OERs) – Content, Systems and Services

## SECOND SEMESTER

**Course Code: LIS-GEC-201**

**Course Title: INFORMATION RESOURCE MANAGEMENT**

**Course Category: Generic Elective**

**Course Type: Theory**

### Essential Reading List

- Bawden, David & Robinson, Lyn (2012). *Foundations of information science*. London: Facet Publishing.
- Dearnley, J. & Feather, J. (2001). *The wired world: an introduction to the theory and practice of the information society*. London: Library Association.
- Delanty, G. (2001). *Challenging knowledge: the university in the knowledge society*. Open University Press.
- Feather, J. (2017). *The information society: a study of continuity and change*. 6th ed. London: Facet Publishing.
- Hider, P., Bawden, D., & Robinson, L. (2018). *Information resource description: Creating and managing metadata*. Facet Publishing.
- Martin, W. J. (1995). *The global information society*. Brookfield, VT: Gower.
- Salvaggio, J. L. (1989). *The information society: economic, social, and structural issues*. Hillsdale, NJ: Lawrence Erlbaum.
- Schopflin, K., & Walsh, M. (2019). *Practical knowledge and information management*. Facet Publishing.
- Vickery B. C. & Vickery A. (1987). *Information science in theory and practice*. London: Butterworth.
- Webster, F. (2002). *Theories of the information society*. 2nd Ed. London: Routledge

### Additional Reading List

- Bell, D. (1980). *The social framework of the information society*. In Derrouzos M C & Moses, L. (eds), *The computer age: a twenty year view*. Cambridge: MIT Press.
- Birkerts, S. (1995). *The Gutenberg elegies*. New York: Ballantine.
- Bonk, C. J. (2009). *The world is open: How Web technology is revolutionizing Education*. San Francisco: Jossey-Bass.
- Bozionelos, N. (2004). Socio-economic background and computer use: The role of computer anxiety and computer experience in their relationship. *International Journal of Human-Computer Studies*, 61(5), 725-746.

- Brown, C., Murphy, T. J., & Nanny, M. (2003). Turning techno-savvy into infor-savvy: Authentically integrating information literacy into the college curriculum. *The Journal of Academic Librarianship*, 29(6), 386-398.
- Brown, J. S. (2000). Growing up digital: How the Web changes work, education and the ways people learn. *Change* (March/April), 10-20.
- Dordick, H.S. & Wang, G. (1993). *The information society: a retrospective view*. Newbury Park, CA: Sage.
- Drucker, P. (1998). From capitalism to knowledge society. *The knowledge economy*, 15-34.
- Foster, A., & Rafferty, P. (2016). *Managing digital cultural objects : Analysis, discovery and retrieval*. Facet Publishing.
- Franks, P. C. (2018). *Records and information management*. Facet Publishing.
- Gilchrist, A, Ed. (2009). *Information science in transition*. London: Facet Publishing.
- Halonen, R. (2008). Action learning with an in formation system project: Subjective reflections. *Reflective Practice*, 9 (1), 98-99.
- Hegarty, B., Penman, M., Brown, C., Coburn, D., Gower, G., Kelly, O., . . . Moore, M. (2005). Approaches and implications of eLearning adoption in relation to academic staff efficacy and working . Palmerston North: Universal College of Learning and Ministry of Education.
- Heine, C., & O'Conner, D. (n.d.). 21st century digital information fluency model. Retrieved April 13, 2009, from <http://21cif.com/resources/difcore/>
- Machlup, F. (1984). *The economics of information and human capital*. Princeton: Princeton University Press.
- McGarry, K. J. (1993). *The changing concept of information: an introductory analysis*. (2nd. ed.). London: Facet Publishing.
- Masuda, Y. (1980). *The information society as post-industrial society*. Washington, D.C.: World Future Society.
- Singha Roy, D. K. (2014). *Knowledge society: new identities in emerging India*. New York: Cambridge University Press.

## SECOND SEMESTER

**Course Code: LIS-COR-202**

**Course Title: DOCUMENT CLASSIFICATION (PRACTICE)**

**Course category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	<ul style="list-style-type: none"> <li>To understand the structure and rules of DDC;</li> <li>To acquire skills for building class number by using DDC (DDC edition will be decided by department) ; and</li> <li>To know the precesses related to use DDC in web retrieval.</li> </ul>
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	
									To create skills in handling DDC scheme for organizing print resources and its applications in organizing digital resources.	

### Module I: DDC – Basic Level

#### Unit 1: Introduction to Dewey Decimal Classification (DDC)

- History and Genesis of DDC;
- Structure and rules of DDC;
- Steps in practical classification;
- Class number building in DDC - process;
- Use of DDC in retrieval.

#### Unit 2: Dewey Decimal Classification - stage 1 (Edition as decided by department)

- Summary;
- Schedule;
- Tables;
- Synthesis of class numbers – practical steps;
- Building class number for simple subjects;

### Module II: DDC – Advanced Level

#### Unit 3: Dewey Decimal Classification - stage 2 (Edition as decided by department)

- Relative index;
- Building class number for compound subjects.
- Building class number for complex subjects;
- Phase relations in DDC;
- Call number building by DDC

#### Unit 4: Dewey Decimal Classification - stage 3 (Edition as decided by department)

- Automated Call number (use of Cutter number, use of Dewey Cutter Program of OCLC (<http://www.oclc.org/support/services/dewey/program/license.en.html>);
- Shelf order;
- WebDewey trial;
- Use of DDC for organization of digital resources (CyberDewey);
- DDC Linked Data – Dewey.info). (<http://www.oclc.org/content/forms/worldwide/en/webdewey-free-trial.html>)

## SECOND SEMESTER

**Course Code: LIS-COR-202**

**Course Title: DOCUMENT CLASSIFICATION (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

### Essential Reading List

- British Standards Institution. (2005). *UDC, Universal Decimal Classification*. London: British Standards Institution.
- Chan, L. M., Comaromi, J. P., Mitchell, J. S., & Satija, M. P. (1996). *Dewey decimal classification: A practical guide*. Albany: Forest Press.
- Chan, L. M., & Salaba, A. (2016). *Cataloging and classification : an introduction (4<sup>th</sup> ed.)*. Lanham: Rowman & Littlefield Publishers, Inc.
- Dewey, M., & Mitchell, J. S. (2011). *Dewey decimal classification and relative index (23rd edition)*. Dublin, Ohio: OCLC Online Computer Library Center, Inc.
- Gopinath, M. A., Mangai, M. A. A. M., Neelamegha, A., & Prasad, K. N. (2004). *Subject classification practice: S. R. Ranganathan's postulational approach ; worked out examples using CC, DDC, and UDC schemes*. New Delhi: Published by Ess Ess Publications for Sarada Ranganathan Endowment for Library Science, Bangalore.
- Gnoli, C. (2020). *Introduction to knowledge organization*. Facet Publishing.
- Joudrey, D. M., Taylor, A. G., & Miller, D. P. (2015). *Introduction to cataloging and classification (11<sup>th</sup> ed.)*. California: Libraries Unlimited
- Satija, M. P. (2011). *A guide to the theory and practice of colon classification*. New Delhi: Ess Ess Publications.
- Satija, M. P. (2011). *The theory and practice of the Dewey Decimal Classification System*. TBAC Business Centre, Avenue 4, Station Lane, Witney, Oxford OX28 4BN, UK: Chandos Publishing.
- Satija, M. P. (2012). *Exercises in the 23rd edition of dewey decimal classification*.
- Singh, K. P. (2013). *UDC: A manual for classification practical and information resources*. New Delhi: Today & Tomorrow's Printers and Publishers.

### Additional Reading List

- Aida, S. (January 01, 2008). Use of the Universal Decimal Classification: A world-wide survey. *Journal of Documentation*, 64, 2, 211-228.
- Berman, J. J. (2021). *Classification Made Relevant*. Academic Press.
- British Standards Institution. (1963). *Guide to the Universal decimal classification (UDC)*. London.
- British Standards Institution. (1993). *Universal Decimal Classification: International medium edition*. Milton Keynes: BSI Standards.
- Broughton, V. (2015). *Essential classification*. Facet Publishing.
- Broughton, V. (2015). *Facet analysis*. Facet Publishing
- Davis, S. W. (1992). *DDC 20 workbook: A practical introduction to the Dewey Decimal Classification*. Albany, N.Y: Forest Press.
- Davis, S. W., & Charles Sturt University. (1997). *DDC 21 workbook: A practical introduction to the Dewey Decimal Classification*. Wagga Wagga, N.S.W: Centre for Information Studies, Charles Sturt University.
- Dewey, M., & Custer, B. A. (1979). *Dewey decimal classification and relative index (19th edition)*. Albany: Forest Press.
- Kaushik, S. K. (2004). *DDC 22: A practical approach*. New Delhi: Ess Ess Publications.
- Lazarinis, F. (2014). *Cataloguing and classification*. Chandos Publishing.
- Raju, A. A. N. (1995). *Dewey decimal classification (DDC 20): theory and practice, a practical & self instructional manual*. Madras, India: T.R. Publications.
- Rigby, M. (1981). *Automation and the UDC, 1948-1980*. The Hague: Fédération internationale de documentation.
- Rozman, D. (January 01, 2009). The practical value of classification summaries in information management and integration. *Extensions and Corrections to the UDC*, 31, 275-283.
- Spiteri, L. (2016). *Managing metadata in web-scale discovery systems*. Facet publishing.

## SECOND SEMESTER

**Course Code: LIS-COR-203**

**Course Title: DOCUMENT CATALOGUING (PRACTICE)**

**Course category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To help in understanding the rules of bibliographic description and rendering of access points;</li> <li>To know document cataloguing by using AACR II; and</li> <li>To know subject cataloguing and organization of catalogue entries.</li> </ul>

### Module I: AACR II – Basic Level

#### Unit 1: Introduction to AACR II

- Entries related with AACR II - main entry, added entry, reference entry, analytical entry;
- AACR II – structure and rules (description and access points);
- Main entries and Added entries;
- Managing Reference entries and Analytical entries;
- Filling rules related with AACR entries.

#### Unit 2: AACR II – Rules for description

- Monographs, Multi-volume books and composite books;
- Government documents and reports;
- Serials and Conference proceedings;
- Cartographic materials, Special materials and Electronic resources;
- Other forms.

### Module II: AACR II – Advanced Level

#### Unit 3: AACR II – Rendering of access points

- Persons;
- Corporate bodies;
- Title;
- Conflict of authorship;
- Subject access by Sears List of Subject Headings.

#### Unit 4: AACR II – Steps for other entry forms

- Reference entries;
- Analytical entries;
- Managing electronic resources;
- AACR II and MARC - Interrelationships;
- AACR II and RDA – the way ahead.



## SECOND SEMESTER

**Course Code: LIS-COR-203**

**Course Title: DOCUMENT CATALOGUING (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

### Essential Reading List

- Chan, L. M., & Salaba, A. (2016). *Cataloging and classification : an introduction (4<sup>th</sup> ed.)*. Lanham: Rowman & Littlefield Publishers, Inc.
- Hasan, N. (1984). *Cataloguing practice: According to classified catalogue code (Ed 5)*. New Delhi: Gitanjali Pub. House.
- Hunter, E. J. (1989). *Examples illustrating AACR 2 1988 revision*. London: Library Association.
- Joudrey, D. M., Taylor, A. G., & Miller, D. P. (2015). *Introduction to cataloging and classification (11<sup>th</sup> ed.)*. California: Libraries Unlimited
- Lehnus, D. J. (1971). *How to determine author and title entries according to AACR: An interpretive guide with card examples*. Dobbs Ferry, N.Y: Oceana Publications.
- Ranganathan, S. R., & Neelameghan, A. (1964). *Classified Catalogue Code, with additional rules for dictionary catalogue code. [By] S.R. Ranganathan, assisted by A. Neelameghan. (Edition 5.)*. Pp. 644. Asia Pub. House: London; Calcutta printed.
- Sharma, C. D. (1973). *Classified catalogue code in theory and practice*. Delhi: Metropolitan Book Co.
- Sharma, C. D., & Ranganathan, S. R. (1972). *Practical cataloguing, classified catalogue*. Delhi: Metropolitan Book Co.
- Swanson, E., & Minnesota AACR 2 Trainers. (1982). *A Manual of advanced AACR 2 examples*. Lake Crystal, Minn: Published for the Minnesota AACR 2 Trainers by Soldier Creek Press.
- Welsh, A., & Batley, S. (2012). *Practical cataloguing: AACR, RDA and MARC 21*. Chicago: Neal-Schuman, an imprint of the American Library Association.

### Additional Reading List

- Clack, D. H. (1990). *Authority control: Principles, applications, and instructions*. Chicago: American Library Association.

- Chambers, S. (2014). *Catalogue 2.0: The future of the library catalogue*. Facet Publishing.
- Hoffmann, C. F. B. (1980). *Getting ready for AACR 2: The cataloger's guide*. White Plains, N.Y: Knowledge Industry Publications.
- Joint Steering Committee for the Development of RDA (2021). *RDA Glossary*. Facet Publishing
- Hunter, E. J., & Fox, N. J. (1980). *Examples illustrating AACR 2: Anglo-American cataloguing rules second edition*. London: Library Assoc.
- Hunter, E. J. (1989). *An introduction to AACR 2: A programmed guide to the second edition of the Anglo-American cataloguing rules, 1988 revision*. London: C. Bingley.
- IFLA International Programme for UBC. (1984). *Guidelines for authority and reference entries*. London: IFLA International Programme for UBC.
- Olson, N. B., Intner, S. S., & Swanson, E. (1992). *Cataloging of audiovisual materials: A manual based on AACR 2*. DeKalb, Ill: Minnesota Scholarly Press.
- Olson, N. B., Intner, S. S., & Swanson, E. (1998). *Cataloging of audiovisual materials and other special materials: A manual based on AACR 2*. DeKalb, Ill: Minnesota Scholarly Press.
- Parameswaran, M., & Ranganathan, S. R. (n.d.). *Headings and access points for personal authors and corporate bodies: A comparative study of the Anglo-American Cataloguing Rules (2nd ed.) and the Classified Catalogue Code (5th ed.)*. Thesis (MSc) -- Loughborough University of Technology, 1988
- Rogers, J. A. V., & Saye, J. D. (1987). *Nonprint cataloging for multimedia collections: A guide based on AACR 2*. Littleton, Colo: Libraries Unlimited.
- Swanson, E., McClaskey, M. J., & Minnesota AACR 2 Trainers. (1980). *A Manual of AACR 2 examples*. Lake Crystal, Minn: Soldier Creek Press.
- Swanson, E., & Minnesota AACR 2 Trainers. (1985). *A manual of AACR 2 examples for "in" analytics: With MARC tagging and coding*. Lake Crystal, Minn: Published for the Minnesota AACR 2 Trainers by Soldier Creek Press.
- Varma, A. K. (1987). *Classified catalogue code: Entries and procedure*. Delhi: Vishwa-Kala Prakashan.

## SECOND SEMESTER

**Course Code: LIS-COR-204**

**Course Title: RESOURCE DESCRIPTION AND CONTENT DESIGNATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	To extend knowledge requires for modern cataloguing practices in relation to changes happening in different levels of cataloguing.	<ul style="list-style-type: none"> <li>To know new objectives, new principles and new bibliographic data models related to cataloguing;</li> <li>To understand subject cataloguing and role of authority data in cataloguing; and</li> <li>To acquire knowledge of content designation schemes.</li> </ul>
					CE	PRJ	PRC	Viva			
3	1	0	4	40	10	Nil	Nil	Nil	50		

### Module I: Cataloguing – Changing Scenario

#### Unit 1: Cataloguing – Policies, Initiatives and Data models

- Cataloguing Policies: need, purpose and advantages, Organization of cataloguing department;
- Centralized and co-operative cataloguing and Limited and selective cataloguing, Union Catalogue – layout, compilation, services (Indian and International);
- Content Designation initiatives – CCF, MARC, UNIMARC;
- IFLA initiatives – FRBR, FRAD, FRSAD; LoC initiative - BIBFRAME 2.0
- Subject and Name authority initiatives – Program for Cooperative Cataloging (BIBCO, CONSER, SACO, NACO) and VIAF.

#### Unit 2: Subject Cataloguing and Authority Data

- General principles of subject cataloguing;
- Subject heading lists and their features - Sears List of Subject Headings (SLSH), Library of Congress Subject Headings (LCSH);
- Subject cataloguing by chain procedure;
- Authority data – need, purpose and process;
- Authority data – name authority and subject authority, Rendering of Indic names;

### Module II: Cataloguing and Content Designation

#### Unit 3: Content Designation – Standards and Formats

- Machine-readable cataloguing and Content designation – definition, scope, objectives, advantages and application in bibliographic data management;
- Role of content designation in bibliographic data exchange;
- Content designation standards – Physical standards (ISO-2709, Z 39.2, MARC-XML etc.) and Logical standards (ISBDs, AACR, FRBR, FRAD, FRSAD etc);
- Bibliographic data formats - Common Communication Formats (CCF);
- Bibliographic data formats – UNIMARC.

#### Unit 4: Content Designation – MARC 21 Family of Standards

- MARC 21 bibliographic data format;
- MARC 21 authority data format;
- MARC 21 community information format;
- FRBRized MARC;
- Application of FRAD and FRSAD model in authority data management.

## SECOND SEMESTER

**Course Code: LIS-COR-204**

**Course Title: RESOURCE DESCRIPTION AND CONTENT DESIGNATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Hopkinson, A. (Ed.). (2008). *UNIMARC manual: Bibliographic format* (3rd ed). K.G. Saur.
- IFLA-LRM. (2017). *IFLA Library Reference Model: A Conceptual Model for Bibliographic Information*. (accessed on 31 December 2020). [https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017\\_rev201712.pdf](https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017_rev201712.pdf)
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- Simmons, P., & Hopkinson, A. (1992). CCF/B: the common communication format for bibliographic information.

### Additional Reading List

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- Zeng, M. L., & Qin, J. (2021). *Metadata*. Chicago : ALA Neal-Schuman
- Welsh, A., & Batley, S. (2012). *Practical cataloguing: AACR, RDA and MARC 21*. Chicago: Neal-Schuman, an imprint of the American Library Association.

## SECOND SEMESTER

**Course Code: LIS-COR-205**

**Course Title: RESOURCE DESCRIPTION AND CONTENT DESIGNATION (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To impart knowledge of classified catalogue code and to provide skills in managing content designation based cataloguing.</li> <li>To know document cataloguing by using CCC 5<sup>th</sup> ed. ;</li> <li>To understand basic level of content designation based cataloguing;</li> <li>To develop skill in integration of bibliographic and authority data.</li> </ul>

### Module I: Classified Catalogue Code

#### Unit 1: CCC 5<sup>th</sup> edition – Rules for description

- Simple books, Multi-volume books and Composite books;
- Government documents and reports;
- Serials and Conference proceedings;
- Special materials;
- Other forms.

#### Unit 2: CCC 5<sup>th</sup> edition – Rendering of access points

- Personal authors;
- Corporate authors;
- Title;
- Conflict of authorship;
- Subject access through Chain indexing.

### Module II: Content Designation

#### Unit 3: Content Designation – CCF/B

- Introduction to CCF/B;
- CCF/B – Structure and Rules;
- CCF/B – Content Designation Process;
- CCF/B – Managing Bibliographic Relationships
- CCF/B in Practice.

#### Unit 4: Content Designation – MARC 21 Family

- MARC 21 family of standards;
- MARC 21 bibliographic format;
- MARC 21 authority format;
- Integration of Bibliographic and Authority formats;
- MARC 21 in practice.

## SECOND SEMESTER

**Course Code: LIS-COR-205**

**Course Title: RESOURCE DESCRIPTION AND CONTENT DESIGNATION (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

### Essential Reading List

- Hopkinson, A. (Ed.). (2008). *UNIMARC manual: Bibliographic format* (3rd ed). K.G. Saur.
- IFLA. (1998). *Functional requirements for bibliographic records: final report* (UBCIM publications; N.S., Vol. 19). (accessed on 31 December 2020) <https://www.ifla.org/publications/functional-requirements-for-bibliographic-records>
- IFLA-LRM. (2017). *IFLA Library Reference Model: A Conceptual Model for Bibliographic Information*. (accessed on 31 December 2020) [https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017\\_rev201712.pdf](https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017_rev201712.pdf)
- Library of Congress. (2000). *MARC 21 concise formats*. Washington, D.C: Library of Congress, Cataloging Distribution Service.
- Library of Congress. (2003). *Metadata encoding & transmission standard*. Washington, DC: The Office.
- Library of Congress. (2011). *Bibliographic Framework Initiative*. (accessed on 10 May 2021) <https://www.loc.gov/bibframe/>
- Library of Congress. (2021). *Resource Description and Access: Information and resources in preparation for RDA*. (accessed on 10 May 2021) <https://www.loc.gov/aba/rda/>
- Library of Congress., & National Library of Canada. (1999). *MARC 21 format for authority data: Including guidelines for content designation*. Washington: Library of Congress, Cataloging Distribution Service.
- Library of Congress., & National Library of Canada. (2000). *MARC 21 format for classification data: Including guidelines for content designation*. Washington: Library of Congress, Cataloging Distribution Service.
- Library of Congress., Library and Archives Canada., British Library., & National Library of Canada. (2000). *MARC 21 format for holdings data: Including guidelines for content designation*. Washington: Library of Congress, Cataloging Distribution Service.
- Library of Congress., Library and Archives Canada., British Library., National Library of Canada., & British Library. (1999). *MARC 21 format for bibliographic data:*

*Including guidelines for content designation*. Washington: Library of Congress, Cataloging Distribution Service.

Library of Congress., Library and Archives Canada., British Library., National Library of Canada., & British Library. (2000). *MARC 21 format for community information: Including guidelines for content designation*. Washington: Library of Congress, Cataloging Distribution Service.

OCLC. (2003). *Connect authority data across cultures and languages to facilitate research: Access VIAF*. OCLC Inc. <https://www.oclc.org/en/viaf.html> (accessed on 21 October 2021)

Simmons, P., & Hopkinson, A. (1992). CCF/B: the common communication format for bibliographic information.

### Additional Reading List

- Bhardwaj, R. K., & Margam, M. (2017). Metadata framework for online legal information system in Indian environment. *Library review*.
- Cathy, W., & Jia, M. (January 01, 2006). Towards accessibility to digital cultural materials: a FRBRized approach. *Oclc Systems & Services: International Digital Library Perspectives*, 22, 3, 217-232.
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- Lamba, M. (2021). *Technological advancements in library service innovation*. Hershey: ISR.
- Lambert, T. S., Heraclidou, A., & Bounia, A. (2021). *Emerging technologies and museums: Mediating difficult heritage*. New York : Berghahn
- Mayernik, M. S., Huddle, J., Hou, C.-Y., & Phillips, J. (2017). *Modernizing Library Metadata for Historical Weather and Climate Data Collections*. [Philadelphia, PA] : Routledge, Taylor & Francis Group
- Riva, P., Le Bœuf, P., & Žumer, M. (2017). *IFLA library reference model: A conceptual model for bibliographic information*. IFLA.

## SECOND SEMESTER

**Course Code: LIS-COR-206**

**Course Title: LIBRARY SYSTEM MANAGEMENT**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ*	PRC	Viva			
3	1	0	4	40	Nil	10	Nil	Nil	50	To confer knowledge of library management with special reference to system analysis, workflow handling and personnel management.	<ul style="list-style-type: none"> <li>To understand basic concepts related to organization, administration and management of libraries;</li> <li>To gather knowledge of library housekeeping, maintenance, planning and finance;</li> <li>To know human resource and quality cycles.</li> </ul>

### Module I: Library Workflow Management

#### Unit 1: Administration of Libraries and Information Centres

- Concept, definition and scope of library administration;
- Library organization – structure, process of structuring, charts (horizontal and vertical), Library organization Vs. Library administration;
- General principles of management and their application to the administration of libraries and information centres;
- Management philosophy and schools of thought;
- Functions and principles of scientific management.

#### Unit 2: Library Housekeeping Operations and System Analysis

- Different sections of libraries and information centres and their functions;
- Acquisition and technical processing of library materials;
- Serials control and Circulation control;
- Collection development – policies, procedures, evaluation and weeding, Stock maintenance and Stock verification – policies and procedures; Resource optimization
- System analysis and design, Library as a system, System analysis of library workflow.

### Module II: Records, Personnel and Quality Management

#### Unit 3: Managerial Tasks of Library Administration

- Library committee and Library authority – Types, functions and need, Librarian and his role in decision making, Library rules and regulations;
- Library records and reports - Records management, Reports – types, compilation, annual reports, Library statistics;
- Maintenance - Stock management, Preservation and Conservation;
- Planning – purpose, types and steps, Building and space management, Library furniture;
- Finance – Source, Budgeting techniques, Financial estimation and cost benefit analysis;

#### Unit 4: Human Resource Management and Quality Cycles

- Objectives of human resource management, Manpower Planning, Categories of staff, Staffing requirements, Leadership and Motivation;
- Method of manpower planning – Job analysis, Job description, Selection, Recruitment, Induction and deployment, Training and Development;
- Performance appraisal, Interpersonal relation, Group dynamics, Johari Window;
- Monitoring and controlling techniques – OR, MIS, MBO, SWOT, DFD, Network Analysis, PERT/CPM, PEP, MAP, PCS.
- Quality Indicator in LIS domain – LibQUAL+. COUNTER, EQUINOX, ISO-9000 and Quality improvement cycle, Total Quality Management (TQM).

\*Students need to study selected library system(s) within the state or outside the state as part fulfillment of this course criteria. They need to submit a project report\* on the basis of a study tour.

## SECOND SEMESTER

**Course Code: LIS-COR-206**

**Course Title: LIBRARY SYSTEM MANAGEMENT**

**Course Category: Core**

**Course Type: Theory**

### Essential Reading List

- Appleton, L. (2021). *Practical tips for successful library management*. Facet Publishing.
- Bakewell, K. G. B. (1997). *Managing user-centred libraries and information services*. (2nd ed.). London: Maxwell.
- Dadson, E. (2021). *Emergency planning and response for libraries, archives and museums*. Facet Publishing
- Evans, G. E., & Greenwell, S. (2020). *Management basics for information professionals*, 4<sup>th</sup> ed. Facet Publishing
- Georgi, C., Bellanti, R., & Holbrook, F. K. (2013). *Excellence in Library Management*. Hoboken: Taylor and Francis.
- Hayes, R. M. (2001). *Models for library management, decision-making, and planning*. San Diego, Calif: Academic Press.
- Krishan Kumar. (1985). *Library manual*. New Delhi: Vikas.
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- Rowley J. (2001). *Information marketing*. Aldershot: Ashgate.
- Shera, J. S. (1978). *Library organization*. New Delhi: Vikas.

### Additional Reading List

- Cook, C. (2002). *The maturation of assessment in academic libraries: The role of LibQUAL+ TM*. Bradford, England: Emerald Group Pub.
- Baker, D., & Ellis, L. (2021). *Libraries, digital information, and COVID : practical applications and approaches to challenge and change*. Chandos Publishing.
- Evans, G. E. (1983). *Management techniques for librarians. 2nd ed.* New York: Academic Press.
- Heath, F. M., Kyrrilidou, M., & Askew, C. A. (2004). *Libraries act on their LibQUAL+ findings: From data to action*. Binghamton, NY: Haworth Information Press.
- Janice Simmons-Welburn, J., & McNeil, B. (2004). *Human resource management in today's academic library: Meeting challenges and creating opportunities*. Libraries Unlimited.

- Koizumi, M. (2017). *Inherent Strategies in Library Management*. Chandos Publishing.
- Lancaster, F. W., & Sandore, B. (1997). *Technology and management in library and information services*. Champaign, Ill: University of Illinois Graduate School of Library and Information Science.
- Laughlin, S., & Wilson, R. W. (2008). *The quality library: A guide to staff-driven improvement, better efficiency, and happier customers*. Chicago: American Library Association.
- McKinney, J. B. (2015). *Effective financial management in public and nonprofit agencies* (4th ed). Libraries Unlimited
- Moran, B. B., & Morner, C. J. (2017). *Library and information center management* (9th ed.). Libraries Unlimited.
- O'Connor, S. (2015). *Library management in disruptive times: skills and knowledge for an uncertain future*. Facet Publishing.
- Peter, C., & Gorman, G.E. (2001). *Managing information resources in libraries and information services: collection management in theory and practice*. London: Facet Publishing.
- Prytherch, R. ed. (1998). *Gower handbook of information management*. London: Gower.
- Pugh, L. (2007). *Change management in information services*. Aldershot, Hampshire, England: Ashgate.
- Rush, E. B. (2020). *The efficient library: Ten simple changes that save time and improve service*. Libraries Unlimited.
- Saponaro, M. Z., & Evans, G. E. (2019). *Collection management basics* (7th ed.). Libraries Unlimited.
- Simmons-Welburn, J., & McNeil, B. (2004). *Human resource management in today's academic library: Meeting challenges and creating opportunities*. Westport, Conn: Libraries Unlimited.
- Stueart, R. D., Moran, B. B., & Morner, C. J. (2013). *Library and information center management*.
- Woolls, B., Valenza, J. K., & Dawkins, A. M. (2021). *The school library manager : Surviving and thriving* (7th ed.). Libraries Unlimited

## THIRD SEMESTER

**Course Code: LIS-COR-301**

**Course Title: INFORMATION REPRESENTATION AND RETRIEVAL**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution					Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To extend the knowledge of information retrieval models and techniques with a focus on digital discovery system.</li> <li>To learn basic concepts related to information representation and information retrieval system;</li> <li>To understand features, components, types and models of digital IR system;</li> <li>To understand IR evaluation methods.</li> </ul>

### Module I: Classical IRR

#### Unit 1: Introduction to Information Retrieval System

- 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 2: 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 3: 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 on-line thesaurus: tools and methods.

### Module II: Digital IRR

#### Unit 4: 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 - On-line IR, Optical-disk based IR, OPAC and Web IR;
- Multiple database searching, Common Command Language, NISO and ISO standards, Multi-lingual/Cross-language information retrieval systems and projects;
- Web IR: Meaning scope & 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 5: 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.



### THIRD SEMESTER

**Course Code: LIS-COR-301**

**Course Title: INFORMATION REPRESENTATION AND RETRIEVAL**

**Course Category: Core**

**Course Type: Theory**

#### Essential Reading List

- Chowdhury, G. G. (2010). *Introduction to modern information retrieval*. 3<sup>rd</sup> ed. London, Facet Publishing.
- Foskett, A. C. *Subject approach to information*. (2012). 6<sup>th</sup> Ed. London: The Library Association.
- Ghosh, S. B. and Satpathi, J. N., Eds. (1998). *Subject indexing systems: concepts, methods and techniques*. Calcutta. IASLIC.
- Lancaster, F. W. (1979). *Information retrieval systems: characteristics, testing, and evaluation*. 2<sup>nd</sup> Ed. New York, John Wiley.
- Lancaster, F. W., and Curry, E. L. (2015). *Indexing and abstracting in theory and practice*. New Edition. Facet Publishing, London.
- Manning, C. D., Raghavan, P., & Schütze, H. (2018). *Introduction to information retrieval*. Cambridge: Cambridge University Press.
- Ribeiro-Neto, Berthier and Baeza-Yates, Ricardo. *Modern information retrieval: the concepts and technology behind search* (ACM Press Book). 2<sup>nd</sup> ed. Addison-Wesley Professional, 2011.913p. ISBN: 9780321416919.
- Salton, G. and McGill, Michael I. (1983). *Introduction to information retrieval*. 1983. New York, McGraw-Hill.
- Sparck, J. K., & Willett, P. (1997). *Readings in information retrieval*. San Francisco, Calif: Morgan Kaufman.

#### Additional Reading List

- Aitchison, J., Gilchrist, A., & Bawden, D. (2004). *Thesaurus construction and use: A practical manual*. New York: Europa Publications.
- Anderson, James D. (1997). *Guidelines for indexes and related information retrieval devices: a technical report*. Bethesda, Maryland: National Information Standard Organization.
- Bawden, D. (2007). Information seeking and information retrieval: the core of the information curriculum. *Journal of Education for Library and Information Science*. 48 (2), pp.125-138.
- Borko, Harold and Bernier, Charles L. (1978). *Indexing concepts and methods*. New York, Academic Press.

- Chu, H. (2010). *Information representation and retrieval in the digital age*. Medford, N.J: Published for the American Society for Information Science and Technology by Information Today.
- Fugmann, R. (1993). *Subject analysis and indexing: theoretical foundation and practical advice*. Frankfurt: Verlag.
- Gilchrist, A. (1997). *From classification to knowledge organization: Dorking revisited or past is prelude*. The Hague: International Federation for Information and Documentation.
- Hyvönen, E. (2012). *Publishing and using cultural heritage linked data on the semantic Web*. San Rafael, Calif: Morgan & Claypool Publishers.
- International Organization for Standardization. (2013). *Information and documentation: Thesauri and interoperability with other vocabularies*. Geneva: ISO.
- ISO 2788:1986. *Guidelines for the establishment and development of monolingual thesauri*. Geneva: International Organization for Standardization.
- Jones, Karen Sparck, Ed. (1981). *Information retrieval experiment*. London, Butterworth.
- Nie, J.-Y. (2010). *Cross-language information retrieval*. San Rafael, Calif: Morgan & Claypool.
- Peters, C., Braschler, M., & Clough, P. (2012). *Multilingual information retrieval: From research to practice: Carol Peters, Martin Braschler, Paul Clough*. (Multilingual Information Retrieval.) Heidelberg: Springer.
- Quinn, B. (1994). Recent theoretical approaches in classification and indexing. *Knowledge Organization*. 21(3); p.140—147.
- Rasmussen, E. M. (2003). Indexing and retrieval for the Web. *Annual Review of Information Science and Technology (ARIST)*, 37, 91-124.
- Sarkhel, Juran Krishna (2001). *Information analysis in theory and practice*. Kolkata, Classique Books, 2001.
- Sarkhel, Juran Krishna. (2005). *Evaluation of indexing systems*. In MLII-102; Unit 5, p.177-208: Information Processing and Retrieval, Edited by S B Ghosh. New Delhi, Indira Gandhi National Open University.
- Svenonius, E. (2000). *The intellectual foundation of information organization*. Cambridge: MIT Press.
- Vickery, B. C. (1986). Knowledge representation: a brief review. *Journal of documentation*. 42 (3), pp.145-159.

### THIRD SEMESTER

**Course Code: LIS-COR-302**

**Course Title: KNOWLEDGE ORGANIZATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
3	1	0	4	40	10	Nil	Nil	Nil	50	To introduce learners with the ongoing experiments in theoretical and practical levels for using classification as a digital KOS.	<ul style="list-style-type: none"> <li>To explore role of library classification as knowledge representation tool and KOS;</li> <li>To know steps in developing special classification schemes; and</li> <li>To study the use of technologies in classification.</li> </ul>

#### Module I: Depth Schedules and Special Classification Schemes

##### Unit 1: Special Classification Schemes

- Need and purpose of special classification schemes;
- Theories of facet analysis and depth schedule;
- Application of theories of facet analysis: Ranganthan's theory, CRG theory and Louise Spiteri's theory;
- Study of special classification schemes;
- Design of special classification schemes: steps and processes.

##### Unit 2: Classification and Knowledge Representation

- Domain Knowledge Modeling – Concepts and Theories;
- Knowledge Representation in DDC & UDC;
- Knowledge Representation in CC;
- Classification and Information Retrieval;
- Revision process of major classification schemes.

#### Module II: Classification and Digital Knowledge Organization

##### Unit 3: Classification as Knowledge Organization Systems (KOSs)

- Classification as Knowledge Organization System (KOS);
- Ontology and Library Classification;
- Classification schemes for Upper Ontologies and Domain Ontologies;
- Ontology: Tools and Rules;
- SKOS: Tools and Rules;

##### Unit 4: Trends and Future of Library Classification

- Automatic classification - Application of NLP and AI techniques;
- Classification and Digital resource organization;
- Uses of classification in automatic document clustering;
- Web-based classification systems;
- Projects and initiatives in classification research, Indian school of research in automatic classification;

### THIRD SEMESTER

**Course Code: LIS-COR-302**

**Course Title: KNOWLEDGE ORGANIZATION (THEORY)**

**Course Category: Core**

**Course Type: Theory**

#### Essential Reading List

- Foskett, A. C. (2012). *The subject approach to information*. 6<sup>th</sup> ed. London: Facet publishing.
- King, B., & Reinold, K. (2008). *Finding the Concept, Not Just the Word: A Librarian's Guide to Ontologies and Semantics*. Burlington: Chandos Publishing.
- Kumar, K. (2003). *Theory of classification*. New Delhi: Vikas.
- Kumbhar, R. (2012). *Library classification trends in the 21st century*. Witney: Chandos Publishing (Oxford) Ltd.
- Ohdedar, A. K. (1994). *Book Classification*. Calcutta: Bengal Library Association.
- Ranganathan, S. R. (1937). *Prolegomena to library classification*. Madras: Madras Library Association.
- Ranganathan, S. R. (1962). *Elements of Library Classification*. 3<sup>rd</sup> ed. Bombay: Asia Publishing.
- Needham, C. D. (1971). *Organizing knowledge in libraries*. 2<sup>nd</sup> ed.. London: Andre Deutsch.

#### Additional Reading List

- Broughton, V. (2017). *Essential classification*. London: Facet Publishing.
- Batty, C. D. (1966). *An introduction to colon classification*. London: Bingley.
- Chan, L. M. (1985). *Cataloguing and classification: an introduction*. New York: McGraw Hill.
- Chan, L. M., Richmond, P. A., & Svenonius, E. (1985). *Theory of subject analysis: A sourcebook*. Littleton, Colo: Libraries Unlimited.
- Dhiman, A. K. & Yashoda Rani. (2005). *Learn library classification*. New Delhi: Ess Ess.
- Dhyani, P. (1998). *Library classification: theory and principles*. New Delhi: Wishwa Prakashan.
- Dhyani, P. (1983). *Classification schemes and Indian libraries*. New Delhi: Metropolitan.
- Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
- Foskett, D. J. (1974). *Classification and indexing in social sciences*. London: Aslib.
- Fox, E. A., & ITorres, R. S. (2014). *Digital library technologies: Complex objects, annotation, ontologies, classification, extraction, and security*.

- Halgamuge, S. K., & Wang, L. (2005). *Classification and clustering for knowledge discovery*. Berlin: Springer.
- Hunter, E. J. (1988). *Classification made simple*. Aldershot: Gower.
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- Sood, S. P. (1998). *Universe of knowledge and universe of subjects*. Jaipur: G. Star Printers.
- Taylor, A. G. (2007). *Introduction to cataloguing and classification* (10th ed.). New Delhi: Atlantic.

### THIRD SEMESTER

**Course Code: LIS-COR-303**

**Course Title: KNOWLEDGE ORGANIZATION (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To impart knowledge in using classification schemes in advanced level, in designing depth classification, and to know SKOS and Ontology.</li> <li>To explore role of library classification as knowledge representation tool;</li> <li>To know steps in developing special classification schemes; and</li> <li>To study the use of technologies in library classification.</li> </ul>

#### Module I: Classification schemes – Advanced Level

##### Unit 1: Colon Classification – Advanced level (Edition as decided by department)

- Building of class number - compound subjects;
- Building of class number - complex subjects;
- Phase relations;
- Use of devices;
- Notational techniques and Telescoping of array

##### Unit 2: Universal Decimal Classification (Edition as decided by department)

- Main tables;
- Auxiliary tables;
- Common auxiliaries and Special auxiliaries;
- Facetisation and Synthesis.;
- Building class number for simple, compound and complex subjects;

#### Module II: Classification schemes - SKOS and Ontologies

##### Unit 3: SKOS and Classification Schemes

- SKOS editors and tools;
- SKOS and Faceted classification;
- Colon Classification to SKOS;
- DDC to SKOS;
- UDC to SKOS.

##### Unit 4: Ontologies through Classification Schemes

- Use of ontology editors;
- Ontology languages and standards;
- Design of a domain ontology;
- Ontological representation of classification schemes;
- Ontology based library retrieval.

### THIRD SEMESTER

**Course Code: LIS-COR-303**

**Course Title: KNOWLEDGE ORGANIZATION (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

#### Essential Reading List

- Dhiman, A. K. & Yashoda Rani. (2005). *Learn library classification*. New Delhi: Ess Ess.
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- Fox, E. A., & ITorres, R. S. (2014). *Digital library technologies: Complex objects, annotation, ontologies, classification, extraction, and security*.
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- Maltby, A. (1975). *Sayers' manual of classification for librarians*. (5th ed.). London: Andre Deutsch.
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- Ranganathan, S. R. (1966). *Elements of library classification* (2nd ed.). Bombay: UBS.
- Sandia National Laboratories., United States. (2007). *Skos XSLT and Transforming RDF Resources for use in a Production Semantic Technologies Application*. Washington, D.C: United States. National Nuclear Security Administration.
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- Taylor, A. G. (2007). *Introduction to cataloguing and classification* (10th ed.). New Delhi: Atlantic.
- Wong, W., Liu, W., Bennamoun, M., & IGI Global. (2011). *Ontology learning and knowledge discovery using the Web: Challenges and recent advances*. Hershey, Pa: IGI Global (701 E. Chocolate Avenue, Hershey, Pennsylvania, 17033,USA).

### THIRD SEMESTER

**Course Code: LIS-COR-304**

**Course Title: AUTOMATED LIBRARY SYSTEM (THEORY)**

**Course Category: Core**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
3	1	0	4	40	10	Nil	Nil	Nil	50	To provide knowledge related to software ecosystem in a library with focus on integrated library system (ILS) along with software, standards and trends.	<ul style="list-style-type: none"> <li>To learn basic concepts related to library automation including global recommendations;</li> <li>To understand workflow of library automation; and</li> <li>To explore the practical applications of library automation software and standards.</li> </ul>

#### Module I: Workflow of Library Automation

##### Unit 1: Introduction to Library Automation

- Library automation – what, why, advantages;
- Historical development and generation of library automation;
- Integrated Library System (ILS) - general requirements, steps and implementation;
- Global recommendations and best practice guidelines (OLE, ILS-DI etc);
- Role of standards and software;
- RFP (Request For Proposal) for library automation.

##### Unit 2: Components of Automated Library System

- Library system and subsystems; Procedural model of library automation;
- Software-level requirements for automation workflow;
- Components - Acquisition subsystem, Cataloguing subsystem, Circulation subsystem and Serials control subsystem;
- User interface subsystem and ILS Administration.

#### Module II: Library Automation – Standards, Software and Trends

##### Unit 3: Standards and Software related to Library Automation

- Library standards – scope, objectives, types and advantages;
- Library automation standards – global and national;
- Open standards – features, application and advantages;
- Library automation software – functional requirements, global recommendations and RFPs; ILSs available in India – types and features;
- Open source software in library automation;

##### Unit 4: Trends and Future

- Five generations of ILSs
- From ILS to LSP;
- Interoperability issues (ILSDI, REST/API);
- Cloud based library automation and Library mashup;
- Trends and future of library automation software.

### THIRD SEMESTER

**Course Code: LIS-COR-304**

**Course Title: AUTOMATED LIBRARY SYSTEM (THEORY)**

**Course Category: Core**

**Course Type: Theory**

#### Essential Reading List

- Breeding, M. (2010). *Next-gen library catalogs*. New York: Neal-Schuman Publishers.
- Breeding, M., & ALA TechSource. (2008). *Open source integrated library systems*. Chicago, IL: American Library Association.
- Clayton, M., & Batt, C. (2020). *Managing library automation*. 2<sup>nd</sup> ed. London : Routledge.
- Kochtanek, T. R., & Matthews, J. R. (2002). *Library information systems: From library automation to distributed information access solutions*. Westport, Conn: Libraries Unlimited.
- Mukhopadhyay, P. (2008). *Library automation through Koha*. Kolkata: Prova Prakashani.
- Mukhopadhyay, P. (2014). Library automation processes. Unit 2 **In** BLIS – Course 9 (ICT in Libraries), New Delhi: IGNOU.
- Mukhopadhyay, P. (2005.). *Library automation – software packages*. Unit 6 **In** MLIS – MLII-104 (ICT Applications – Part I), New Delhi: IGNOU.
- Mukhopadhyay, P. (2005). *Introduction to Library Automation*. Unit 1 **In** CICTAL – BLII-003 (Library Automation and Digitization), New Delhi: IGNOU.
- Mukhopadhyay, P. (2006). *Five laws and ten commandments: The open road of library automation in India*. (Proceedings of the National Seminar on Open Source Movement - Asian Perspective, XXII, IIT Roorkee, 2006. IASLIC, Kolkata. 2006. p. 27-36.) IASLIC.
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- Singh, M., & Sanaman, G. (2012). Open source integrated library management systems: Comparative analysis of Koha and NewGenLib. *Electronic Library*, 30, 6, 809-832.

#### Additional Reading List

- Anuradha, K. T., & Savanur, K. (2010). Installing newgenlib: open source library automation package. *SRELS Journal of Information Management*, 47(6), 621-630.
- Ayres, F. H., Ridley, M., Nielsen, L. P. S., & British Library. (1998). *The Bradford OPAC 2: Managing and displaying retrievals from a distributed search in Z39.50*. Boston Spa: British Library Research and Innovation Centre.

- Breeding, M. (2009). *Opening up library systems through web service and SOA: Hype, or reality?*. Chicago: ALA TechSource.
- Breeding, M., & Library and Information Technology Association (U.S.). (2012). *Cloud computing for libraries*.
- Clarke, Dougan & Associates. (1988). *Library automation feasibility study: Final report*. Waterloo, Ont.: The Associates.
- Crawford, W., & Gorman, M. (1995). *Future libraries: Dreams, madness & reality*. Chicago: American Library Association.
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- Head, J. W., & McCabe, G. B. (1996). *Introducing and managing academic library automation projects*. Westport, Conn: Greenwood Press.
- James E. Rush Associates. (1983). *Library systems evaluation guide*. Powell, Ohio: James E. Rush Associates.
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- Library and Information Technology Association (U.S.). (2002). *Open source software for libraries: An open source for libraries collaboration*. Chicago: LITA.
- Morris, A., & Dyer, H. (1998). *Human aspects of library automation*. Brookfield, Vt: Gower.
- Murphy, F. J., Pollitt, A. S., & White, P. R. (1991). *Matching OPAC user interfaces to user needs*. Huddersfield: The Polytechnic of Huddersfield.
- Pitkin, G. M. (1991). *The Evolution of library automation: Management issues and future perspectives*. Westport, CT: Meckler.
- Sirohi, S., & Gupta, A. (2010). *Koha 3 library management system*. Birmingham: Packt Pub.
- Texas State Library. (1995). *Library automation standards and guidelines*. Austin, Tex: Texas State Library, Library Development Division.
- Tramullas, J., & In Garrido, P. (2013). *Library automation and OPAC 2.0: Information access and services in the 2.0 landscape*. Hershey, Pa: Information Science Reference.
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### THIRD SEMESTER

**Course Code: LIS-COR-305**

**Course Title: AUTOMATED LIBRARY SYSTEM (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	1	3	4	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To provide skills to install, configure and use of open source ILSs along with the skills of basic administration and management of interoperability.</li> <li>To use open source ILS right from installation to configuration;</li> <li>To explore basic and advanced features of selected ILS ; and</li> <li>To know ILS administration and interoperability.</li> </ul>

#### Module I: ILS – Operational Skills

##### Unit 1: ILSs – Installation, configuration and customization

- LAMP architecture;
- Web architecture setup;
- Installation and Instance creation;
- Global system setting;
- Basic parameters settings.

##### Unit 2: ILSs – Subsystems and modules

- Acquisition – Settings and Module;
- Cataloguing - Settings and Module;
- Serials control - Settings and Module;
- Circulation and Patron Management;
- Report generation, Export/Import; Tools and Utilities.

#### Module II: ILS – Advanced Skills

##### Unit 3: ILS Administration and User Interface

- OPAC, OPAC 2.0, OPAC Mashup;
- Usage statistics through Web analytics;
- Configuration of Enhanced features;
- Privilege control;
- Backup and Restoration.

##### Unit 4: ILS – Interoperability Issues

- Bibliographic and Authority data integration;
- Data conversion and export/import;
- OAI/PMH (MARCXML & OAI-DC);
- ILS/DI and REST/API applications;
- Cloud hosted ILS – requirements and steps.



### THIRD SEMESTER

**Course Code: LIS-COR-305**

**Course Title: AUTOMATED LIBRARY SYSTEM (PRACTICE)**

**Course Category: Core**

**Course Type: Practicum**

#### Essential Reading List

- Breeding, M., & ALA TechSource. (2008). *Open source integrated library systems*. Chicago, IL: American Library Association.
- Clarke, Dougan & Associates. (1988). *Library automation feasibility study: Final report*. Waterloo, Ont.: The Associates.
- Jost, R. M. (2016). *Selecting and Implementing an Integrated Library System*. New York: Chandos publishing.
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- Singh, M., & Sanaman, G. (2012). Open source integrated library management systems: Comparative analysis of Koha and NewGenLib. *Electronic Library*, 30, 6, 809-832.
- Winnebago Software Company. (1993). *Guide to library automation: A step-by-step introduction*. Caledonia, MN: Winnebago Software Co.

#### Additional Reading List

- Anuradha, K. T., & Savanur, K. (2010). Installing newgenlib: open source library automation package. *SRELS Journal of Information Management*, 47(6), 621-630.
- Ayres, F. H., Ridley, M., Nielsen, L. P. S., & British Library. (1998). *The Bradford OPAC 2: Managing and displaying retrievals from a distributed search in Z39.50*. Boston Spa: British Library Research and Innovation Centre.
- Boss, R. W. (2008). Open source integrated library system software. *PLA Tech Notes*.
- Breeding, M. (2009). *Opening up library systems through web service and SOA: Hype, or reality?*. Chicago: ALA TechSource.
- Breeding, M. (2010). *Next-gen library catalogs*. New York: Neal-Schuman Publishers.
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- Cooper, M. D. (1996). *Design of library automation systems: File structures, data structures, and tools*. New York: Wiley

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- Morris, A., & Dyer, H. (1998). *Human aspects of library automation*. Brookfield, Vt: Gower.
- Mukhopadhyay, P. (2005.). *Library automation – software packages*. Unit 6 **In** MLIS – MLII-104 (ICT Applications – Part I), New Delhi: IGNOU.
- Mukhopadhyay, P. (2005). *Introduction to Library Automation*. Unit 1 **In** CICTAL – BLII-003 (Library Automation and Digitization), New Delhi: IGNOU.
- Mukhopadhyay, P. (2006). *Five laws and ten commandments: The open road of library automation in India*. (Proceedings of the National Seminar on Open Source Movement - Asian Perspective, XXII, IIT Roorkee, 2006. IASLIC, Kolkata. 2006. p. 27-36.) IASLIC.
- Murphy, F. J., Pollitt, A. S., & White, P. R. (1991). *Matching OPAC user interfaces to user needs*. Huddersfield: The Polytechnic of Huddersfield.
- Pitkin, G. M. (1991). *The Evolution of library automation: Management issues and future perspectives*. Westport, CT: Meckler.
- Rooks, D. C. (1988). Implementing the automated acquisitions system: Perspectives of a personnel administrator. *Library Acquisitions: Practice & Theory*, 12(3-4), 431-436.
- Sirohi, S., & Gupta, A. (2010). *Koha 3 library management system*. Birmingham: Packt Pub.
- Texas State Library. (1995). *Library automation standards and guidelines*. Austin, Tex: Texas State Library, Library Development Division.

### THIRD SEMESTER

**Course Code: LIS-DSE-306 A**

**Course Title: DIGITAL RESOURCE MANAGEMENT**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	10	Nil	Nil	Nil	50	To impart skills necessary to handle digital information resources in a library of any type or size with focus on cutting edge technologies.	<ul style="list-style-type: none"> <li>To understand nature, features, scopes and limitations of digital information resources;</li> <li>To know the use of text retrieval, CMS and AJAX;</li> <li>To explore the advanced level bibliographic data management</li> </ul>

#### Module I: Digital Resources – Nature, Features and Platforms

##### Unit 1: Introduction to Digital Information Resources

- Definition, scope, features and advantages of digital information resources;
- Socio-legal aspects of digital information resources (copyright, DRM, other IPR issues, licensing issues);
- Electronic Information Products and Services;
- Text retrieval engines – scope, features and utilities; Retrieval features of selected text retrieval engines – Apache-Solr, Lucene, MGPP and Zebra;
- Online thesaurus – development and integration.

##### Unit 2: Web 2.0 and Library 2.0

- Web 2.0 - what, why, components and use;
- Web 2.0 tools and technologies;
- Library 2.0 – application of Web 2.0 tools in library services;
- Information mashpup;
- Trends and future.

#### Module II: Digital Resources – Organization and Dissemination

##### Unit 3: Content Designation through MARC 21 – Advanced level

- Designing MARC 21 based Frameworks for different document types;
- Integration of Authority lists and Authority data in MARC 21 formats;
- Managing Reference entries and Analytical entries;
- Geospatial data management in MARC;
- Multi-script records management in MARC.

##### Unit 4: Metadata encoding– Generic and Domain-specific

- Metadata - what, why, types and use;
- Metadata models and Best practice guidelines;
- Generic metadata schema – Dublin Core (Simple and Qualified);
- Domain-specific metadata schema – Learning objects, ETD and Other domains;
- RDF/XML and Metadata interoperability.

### THIRD SEMESTER

**Course Code: LIS-DSE-306 A**

**Course Title: DIGITAL RESOURCE MANAGEMENT**

**Course Category: DSE**

**Course Type: Theory**

#### Essential Reading List

- Aleksander, I. (1985). *Advanced digital information systems*. Englewood Cliffs, NJ: Prentice-Hall International.
- Arthur, M. H. (2006). *Expanding a digital content management system: For the growing digital media enterprise*. Amsterdam: Elsevier Focal Press.
- Casey, M. E., & Savastinuk, L. C. (2007). *Library 2.0: A guide to participatory library service*. Medford, N.J: Information Today.
- Hjelm, J. (2001). *Creating the semantic Web with RDF: Professional developer's guide*. New York: Wiley.
- Miller, S. J. (2011). *Metadata for digital collections: a how-to-do-it manual*. New York: Neal-Schuman Publishers.
- Mukhopadhyay, A. (2007). *Guide to MARC 21: For cataloging of books and serials with functional definitions, examples and working resources*. Oxford: Chandos.
- Zeng, M. L., & Qin, J. (2014). *Metadata. 2nd, rev. ed.* Chicago: American Library Association.

#### Additional Reading List

- Akerkar, R. (2009). *Foundations of the Semantic Web: XML, RDF and ontology*. Oxford, U.K: Alpha Science International.
- Berry, M. W., & Browne, M. (2005). *Understanding search engines: Mathematical modeling and text retrieval*. Philadelphia, PA: SIAM, Society for Industrial and Applied Mathematics.
- Chamis, A. Y. (1991). *Vocabulary control and search strategies in online searching*. New York: Greenwood Press.
- Chin, A. G. (2001). *Text databases and document management: Theory and practice*. Hershey, Pa: Idea Group Pub.
- Courtney, N. (2007). *Library 2.0 and beyond: Innovative technologies and tomorrow's user*. Westport, Conn: Libraries Unlimited.
- Croft, W. B., Metzler, D., & Strohman, T. (2010). *Search engines: Information retrieval in practice*. Boston: Addison-Wesley.
- Evjen, B. (2007). *Professional XML*. Indianapolis, IN: Wrox/Wiley Pub.
- Ford, Kevin. (2013). *LC Classification as linked data*. Università di Firenze Dipartimento di Storia, Archeologia, Geografia, Arte e Spettacolo.

- Goker, A., & Davies, J. (2009). *Information retrieval: Searching in the 21st century*. Chichester, U.K: Wiley.
- Harman, D. K. (2011). *Information retrieval evaluation*. San Rafael, Calif. (1537 Fourth Street, San Rafael, CA 94901 USA: Morgan & Claypool.
- Hitzler, P., Krötzsch, M., & Rudolph, S. (2010). *Foundations of Semantic Web technologies*. Boca Raton: CRC Press.
- Hooland, S. ., & Verborgh, R. (2014). *Linked data for libraries: How to clean, link and publish your metadata*. Chicago, IL: Neal-Schuman.
- Jones, K. M. L., & Farrington, P.-A. (2011). *Using WordPress as a library content management system*. Chicago, IL: ALA TechSource.
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- Lin, Q., Allebach, J. P., & Fan, Z. (2011). *Imaging and printing in a web 2.0 world II*. Bellingham, WA: SPIE.
- Meadow, C. T., Boyce, B. R., & Kraft, D. H. (2000). *Text information retrieval systems*. San Diego: Academic Press.
- Méndez Rodríguez, Eva María, & Greenberg, Jane. (2012). *Linked data for open vocabularies and HIVE's global framework*. EPI SCP.
- Ndubisi, N. O. (2006). *Content management systems*. Bradford, England: Emerald Group Pub.
- Rüger, S. M. (2010). *Multimedia information retrieval*. San Rafael, Calif.: Morgan & Claypool Publishers.
- Vossen, G., & Hagemann, S. (2007). *Unleashing Web 2.0: From concepts to creativity*. Amsterdam: Elsevier/Morgan Kaufmann.
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- Wong, W, Liu, W, Bennamoun, M, Wei Wang,, Payam Barnaghi,, & Andrzej Bargiela,. (2011). *Learning SKOS relations for terminological ontologies from text*. IGI Global
- Yu, H. (2005). *Content and workflow management for library web sites: Case studies*. Hershey, PA: Information Science Pub.
- Welsh, A., & Batley, S. (2012). *Practical cataloguing: AACR, RDA and MARC 21*. Chicago: Neal-Schuman, an imprint of the American Library Association.

### THIRD SEMESTER

**Course Code: LIS-DSE-306 B**

**Course Title: KNOWLEDGE MANAGEMENT**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	10	Nil	Nil	Nil	50	To impart skills necessary to handle knowledge management, knowledge products archiving, and tools for knowledge organization.	<ul style="list-style-type: none"> <li>To understand nature, features, scopes of knowledge management;</li> <li>To know the use of knowledge products archiving and marketing tools;</li> <li>To use research data management tools and services.</li> </ul>

#### Module I: Introduction to Knowledge Management

##### Unit 1: Information and Society

- Information Science: Origin and development, scope and coverage, relationship with other disciplines and professions, Information properties;
- Information Communication: Types, Barriers, Models, Process and Theories;
- Information Society: Social implications; Genesis; Changing role of information institutions and information professionals;
- Information Policies: Nationals and International plans, policies and programmes relating to information for development with special reference to India and developing countries;
- Politics of information: Universal data flow, Free flow of information vs. New World Information Communication Order, WSIS, Information poverty, Digital divide.

##### Unit 2: Knowledge Economy and Knowledge Management

- Knowledge society and Knowledge economics. Knowledge Management: Concepts and tools, Tacit vs Explicit knowledge;
- Document management Vs. Information management Vs. Knowledge management;
- Economics of information: Concept, scope and objectives; Information as a commodity, Information economics vs. Economics of information;
- Theories and Models: Demand and supply of information; Economic principles relevant to information, Production, distribution and consumption of information and knowledge, Machulp's model;
- Information Marketing: Marketing of information product and services, Planning, process and strategies, Economic analysis models, cost-benefit analysis and cost effectiveness, Market research.

#### Module II: Knowledge Management – Organization and Visibility

##### Unit 3: Content Management System

- Content Management – what, why, types and use;
- Use of Mark-up languages in content management (SGML, HTML, XML and XHTML);
- Content management – principles, models, workflows and best practices;
- Content management software;
- Managing open contents and learning contents.

##### Unit 4: Knowledge Dissemination and Marketing

- Digital archives and repositories;
- Research Data Management (RDM) and Data repositories;
- Socio-academic webspace;
- Academic impact metrics;
- Knowledge marketing tools and services.

### THIRD SEMESTER

**Course Code: LIS-DSE-306 B**

**Course Title: KNOWLEDGE MANAGEMENT**

**Course Category: DSE**

**Course Type: Theory**

#### Essential Reading List

- Delanty, G. (2002). *Challenging knowledge: The university in the knowledge society*. Buckingham: Open University Press.
- Drucker, P. (2016). *Post-Capitalist Society*. United Kingdom: Routledge.
- Drucker, P. F. (1993). The rise of the knowledge society. *The Wilson Quarterly*, 17(2), 52-72.
- Foray, D. (2002). *The Knowledge Society*. Oxford: Blackwell for UNESCO.
- Jarvis, P. (2014). *The Age of Learning: Education and the Knowledge Society*. Hoboken: Taylor and Francis.
- Livingstone, D. W. (2012). *Professional Learning in the Knowledge Society*. New York: Sense Publishers.
- Marchegiani, L. (2021). *Digital Transformation and Knowledge Management*. New York: Routledge.
- SinghaRoy, D. K. (2014). *Towards a knowledge society: New identities in emerging India*. New York: Cambridge University Press.
- Sörlin, S., & Vessuri, H. (Eds.). (2007). *Knowledge society vs. knowledge economy: Knowledge, power, and politics*. Netherlands: Springer.

#### Additional Reading List

- Abell, A., Oxbrow, N., & TFPL Ltd. (2006). *Competing with knowledge: The information professional in the knowledge management age*. London: Facet.
- Ackerman, M. S., Pipek, V., & Wulf, V. (2014). *Sharing Expertise: Beyond Knowledge Management*. Cambridge: MIT Press.
- Al-Ali, N. (2003). *Comprehensive intellectual capital management: Step-by-step*. Hoboken, N.J: Wiley.
- Allee, V. (1997). *The knowledge evolution: Expanding organizational intelligence*. Boston, Mass: Butterworth-Heinemann.
- Amindon, D. M. (2001). *Innovation Strategy for the Knowledge Economy*. Oxford: Butterworth-Heinemann.
- Amindon, D. M. (2001). *Innovation Superhighway: Harnessing Intellectual Capital for Collaborative Advantage*. Oxford: Butterworth-Heinemann.
- Castells, M. (2010). *The rise of the network society*. Chichester, West Sussex: Wiley-Blackwell.
- Cerroni, A. (2020). *Understanding the knowledge society: A new paradigm in the sociology of knowledge*.
- David, P. A., & Foray, D. (2001). An introduction to the economy of the knowledge society. MERIT-Infonomics Research Memorandum series.

- Despres, C., & Chauvel, D. (2012). *Knowledge Horizons*. Hoboken: Taylor and Francis.
- Evers, H. D. (2003). Transition towards a knowledge society: Malaysia and Indonesia in comparative perspective. *Comparative Sociology*, 2(2), 355-373.
- Graham, P. J., & Dickinson, H. D. (2007). Knowledge-system theory in society: Charting the growth of knowledge-system models over a decade, 1994–2003. *Journal of the American Society for Information Science and Technology*, 58(14), 2372-2381.
- Haravu, L.J. (2002). Lectures on Knowledge Management: Paradigms, Challenges and Opportunities. Bangalore: Sarada Ranganathan Endowment for Library Science.
- Kamei, M. (2016). *Translation of ICT for education towards a knowledge society*. Hamburg: Anchor Academic Publishing.
- Konana, P., & Balasubramanian, S. (2002). India as a knowledge economy: aspirations versus reality. *Frontline*, 19(2), 65-9.
- Liebowitz, J. (2001). *Knowledge Management: Learning from Knowledge Engineering: Learning from Knowledge Engineering*. CRC Press.
- Martin, W. J. (1990). *The information society*. London: Aslib.
- Martin, W. J. (2017). *The global information society*. London: Routledge.
- Neelameghan, A. (1999). Information economy and knowledge society. *Information studies*, 2, 107-122.
- Nyhan, B., & Cedefop. (2002). *Taking steps towards the knowledge society: Reflections on the process of knowledge development*. Luxembourg: Office for Official Publications of the European Communities.
- Stehr N., Ruser A. (2017). *Knowledge Society, Knowledge Economy and Knowledge Democracy*. In: Carayannis E., Campbell D., Efthymiopoulos M. (eds) Handbook of Cyber-Development, Cyber-Democracy, and Cyber-Defense. Springer, Cham.
- World Summit on the Knowledge Society, & Lytras, M. D. (2008). *The open knowledge society: A computer science and information systems manifesto : First World Summit on the Knowledge Society, WSKS 2008, Athens, Greece, September 24-26, 2008 : proceedings*. Berlin: Springer-Verlag.
- Zack, M. H. H. (2012). *Knowledge and Strategy*. Hoboken: Taylor & Francis.

### THIRD SEMESTER

**Course Code: LIS-SEC-307 A**

**Course Title: MULTILINGUAL INFORMATION RETRIEVAL**

**Course Category: Skill Enhancement**

**Course Type: Practicum**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Prst			
1	0	1	2	Nil	Nil	15	Nil	10	25	To impart ability in learners to organize and disseminate multilingual documents with special focus on Indian languages.	<ul style="list-style-type: none"> <li>To learn 'how-to' prepare text retrieval engines to support Indian languages;</li> <li>To use the tools and resources developed in India for managing multilingual computing;</li> <li>To know 'how-to' process multilingual resources.</li> </ul>

- ASCII, ISCII, Unicode;
- Indian initiatives and projects for multilingual computing;
- Technology Development for Indian Languages (TDIL - tdil-dc.in) ;
- Multilingual computing – prerequisites and standards;
- Indic scripts - features and nature, unity in diversity;
- Indic-scripts based retrieval – software requirements;

- Multilingual information retrieval in library software;
- Zebra search engine configuration for multilingual retrieval;
- Elastic search engine configuration for multilingual retrieval;
- Apache-Solr search engine configuration for multilingual retrieval;
- Organization of multilingual resources.

### THIRD SEMESTER

**Course Code: LIS-SEC-307 B**

**Course Title: REFERENCES AND CITATIONS: NETWORK AND TOOLS**

**Course Category: Skill Enhancement**

**Course Type: Practicum**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Prst			
1	0	1	2	Nil	Nil	15	Nil	10	25	To impart ability in learners to use tools related to citations study, citations management and AI based tools for literature review.	<ul style="list-style-type: none"> <li>To learn 'how-to' use and apply citation management tools and data visualization techniques;</li> <li>To understand advanced level use of reference management tools for better literature review;</li> <li>To know the use of AI based tools in literature review.</li> </ul>

- Citations study tools – Publish or Perish, BibExcel;
- Citations network visualization – Pajek, SocSciBot;
- Altmetric study tools and Article-level metrics;
- API based citations collection (dimensions.ai);
- API based altmetric data collection;

- Reference management tools for advanced research literature organization (as search tool, citations gathering, retraction detection etc);
- Creation and use of reference map for literature review – online services;
- Creation and use of reference map for literature review – standalone services;
- Ranking of abstracts – use of AI based tools and services;
- AI based text summarization.

### THIRD SEMESTER

Course Code: LIS-SEC-307

Course Type: Skill Enhancement

Course Type: Practicum

#### 307 A : MULTILINGUAL INFORMATION RETRIEVAL

#### 307 B : REFERENCES AND CITATIONS: NETWORK AND TOOLS

##### Multilingual Information Retrieval

- Bijal, Dalwadi, & Sanket, Suthar. (2014). *Overview of Stemming Algorithms for Indian and Non-Indian Languages*.
- Croft, W. B. (2000). *Advances in Information Retrieval: Recent Research from the Center for Intelligent Information Retrieval*.
- Ferro, N., & In Peters, C. (2019). *Information retrieval evaluation in a changing world: Lessons learned from 20 years of CLEF*.
- FIRE (Conference), Majumder, P., Mitra, M., Bhattacharyya, P., Subramaniam, L. V., Contractor, D., Rosso, P., ... FIRE (Conference). (2013). *Multilingual information access in South Asian languages: Second International Workshop, FIRE 2010, Gandhinagar, India, February 19-21, 2010 and Third International Workshop, FIRE 2011, Bombay, India, December 2-4, 2011, Revised selected papers*.
- Govindaraju, V., & Setlur, S. R. (2010). *Guide to OCR for Indic Scripts: Document Recognition and Retrieval*. London: Springer London.
- Grefenstette, G. (1998). *Cross-language information retrieval*. Boston, MA: Kluwer Academic Publishers.
- Lafferty, J., & Croft, W. B. (2003). *Language modeling for information retrieval*. Dordrecht: Kluwer Academic.
- Majumder, P., Mitra, M., & Datta, K. (2005). Multilingual information access: an Indian language perspective. *Important Unresolved Matters*, 22.
- Moran, S., & Cysouw, M. (2018). *The Unicode cookbook for linguists: Managing writing systems using orthography profiles*. Language Science Press. <https://directory.doabooks.org/handle/20.500.12854/34976>
- Pal, D., Majumder, P., Mitra, M., Mitra, S., & Sen, A. (2008, October). Issues in searching for indian language web content. In *Proceedings of the 2nd ACM workshop on Improving non English web searching* (pp. 93-96).
- Peters, C., & Cross Language Evaluation Forum (6, 2005, Wien). (2006). *Accessing multilingual information repositories: 6th workshop of the Cross-Language Evaluation Forum, CLEF 2005, Vienna, Austria, 21-23 September, 2005 : revised selected papers*. Berlin [u.a.]: Springer.
- Peters, C., & Cross Language Evaluation Forum. (2003). *Advances in cross language information retrieval: Revised papers*.

- Peters, C., Braschler, M., & Clough, P. (2012). *Multilingual information retrieval: From research to practice*. Heidelberg: Springer.
- Sakai, T., Oard, D. W., & Kando, N. (Eds.). (2021). *Evaluating Information Retrieval and Access Tasks: NTCIR's Legacy of Research Impact*. Springer Nature. <https://directory.doabooks.org/handle/20.500.12854/34328>
- Ture, F. (2013). *Searching to Translate and Translating to Search: When Information Retrieval Meets Machine Translation*. ProQuest LLC. 789 East Eisenhower Parkway, P.O. Box 1346, Ann Arbor, MI 48106. Tel: 800-521-0600; Web site: <http://www.proquest.com/en-US/products/dissertations/individuals.shtml>.

##### References and Citations: Network and Tools

- Abraham, A., Hassanien, A.-E., & Snášel, V. (2010). *Computational Social Network Analysis: Trends, Tools and Research Advances*. London: Springer.
- Batagelj, V., & Mrvar, A. (2004). Pajek—analysis and visualization of large networks. In *Graph drawing software* (pp. 77-103). Springer, Berlin, Heidelberg.
- Cronin, B., & Sugimoto, C. R. (Eds.). (2014). *Beyond bibliometrics: Harnessing multidimensional indicators of scholarly impact*. MIT Press.
- Gilmour, R., & Cobus-Kuo, L. (2011). Reference management software: A comparative analysis of four products. *Issues in science and technology librarianship*, 66(66), 63-75.
- Ridgeway, T., Cover, P., Stone, C., Southeastern Library Association., & American Library Association. (1986). *Improving ref'er-ence man'age-ment*. Chicago: Reference and Adult Services Division, American Library Association.
- Ridley, D. (2013). *The literature review: A step-by-step guide for students*. London: SAGE Pub.
- Shapland, M. (2000). *Evaluation of reference management software*. London: South Bank University.
- Van Eck, N. J., & Waltman, L. (2014). CitNetExplorer: A new software tool for analyzing and visualizing citation networks. *Journal of informetrics*, 8(4), 802-823.
- Zhao, D., & Strotmann, A. (2015). Analysis and visualization of citation networks. *Synthesis lectures on information concepts, retrieval, and services*, 7(1), 1-207.

## FOURTH SEMESTER

**Course Code: LIS-DSE-401 A**  
**Course Title: RESEARCH METHODOLOGY**

**Course Category: DSE**  
**Course Type: Theory**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide knowledge to understand research methods and steps so that learners can provide research support library services to users.</li> <li>To know concepts related to research methods and procedures in general;</li> <li>To understand research support tools and research communication process; and</li> <li>To help in identifying research information sources.</li> </ul>

### Module I: Steps and Procedures of Research

#### Unit 1: Introduction to Research Methodology

- Concept, meaning, objectives and process of research;
- Criteria and problems of research;
- Types of research – Descriptive, Analytical, Applied, Fundamental, Qualitative, Quantitative, Conceptual, Empirical, etc.
- Ranganathan's spiral of scientific method; Indian approaches to research;
- Ethical aspects of research – Academic integrity issues.

#### Unit 2: Research Design and Methods

- Research design: Meaning, need and features of good design; Identification and formulation of problem; Hypothesis; Types of research design; Sampling techniques;
- Stages of research and Designing research proposal;
- Literature search – Print, Non-print and Electronic sources;
- Research methods – Types and scopes;
- Types of research method - Descriptive method; Historical method; Scientific method; Experimental Method and Delphi method; Survey method and Case Study method.

### Module II: Research data – Organization and Presentation

#### Unit 3: Data Collection Tools, Data Analysis and Reporting

- Data Collection – Introduction; Data Collection Tools and Techniques – Questionnaire; Schedule; Interview; Observation; Scales and check and list; Library records, Reports;
- Data Analysis and Interpretation – Introduction (Data – meaning and types; Statistics – meaning and types [Descriptive and Inferential]);
- Data presentation – Generalization, Tabulation, Graphical presentation and Use of statistical packages;
- Research reporting – structure, styles, contents, guidelines, quality parameters and citation standards, Research archiving – tools and services

#### Unit 4: Fundamentals of Statistics

- Understanding research data;
- Collection, organization and presentation of data through statistics;
- Application of statistical techniques in LIS;
- Measures of Central Tendency – Mean, Median and Mode;
- Estimation and testing of hypothesis; Errors in testing hypothesis; Chi-Square Test; Statistical tools – Basic level.



## FOURTH SEMESTER

**Course Code: LIS-DSE-401 A**  
**Course Title: RESEARCH METHODOLOGY**

**Course Category: DSE**  
**Course Type: Theory**

### Essential Reading List

- Busha, Charles A, & Harter, Stephen P. (1980). *Research methods in librarianship: techniques and interpretations*. New York: Academic Press.
- Donald, H. K. & Boyce, Bert R. (1991). *Operations research for libraries and information agencies: techniques for the evaluation of management decision alternatives*. San Diego: Academic Press.
- Gorman, G. E., Clayton, P., Shep, S. J., & Clayton, A. (2005). *Qualitative research for the information professional: A practical handbook*. London: Facet.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Lawal, I. O. (2009). *Library and information science research in the 21st century: a guide for practicing librarians and students*. Oxford, UK: Chandos Pub.
- Leckie, G. J., Given, L. M., & Buschman, J. (2010). *Critical theory for library and information science: Exploring the social from across the disciplines*. Santa Barbara, Calif: Libraries Unlimited.
- Losee, Robert M., Jr., & Worley, Karen A. (1993). *Research and evaluation for information professionals*. San Diego: Academic Press.
- Margaret, L., Peter, Slater,, & Walker, Rennie. (1982). *Research and the practitioner: dissemination of research results within the library-information profession*. London: Aslib.
- Martyn, John, & Lancaster, F. Wilfrid. (1981). *Investigative methods in library and information science: an introduction*. Arlington, VA: Information Resources Press.
- McClure, C. R., & Hernon, P. (1991). *Library and information science research: perspectives and strategies for improvement*. Norwood, N.J: Ablex Pub. Corp.
- Mellon, Constance A. (1990). *Naturalistic inquiry for library science: methods and applications for research, evaluation, and teaching*. New York: Greenwood.
- Moore, N. (1983). *How to do research*. London: Library Association.
- Powell, Ronald R. (1997). *Basic research methods for librarians*. (3rd ed.). Greenwich, CT: Ablex Publishing Corporation.
- Prytherch, Ray. (1994). *Information management and library science: a guide to the literature*. Brookfield, VT: Gower.

- Ranganathan, S. R. (1949). Self-perpetuating scheme of classification. *Journal of Documentation*, 4(4), 223–244. <https://doi.org/10.1108/eb026135>
- Ranganathan, S. R. (1967). Prolegomena to library classification, with assistance of MA Gopinath. *Bangalore: Sarada Ranganathan endowment for library science*.
- Ranganathan, S. R. (1989). *Philosophy of library classification*. Sarada Ranganathan Endowment for Library Science (Bangalore, India).
- Slater, Margaret. (1990). *Research methods in library and information studies*. London: Library Association.

### Additional Reading List

- Khan, M. A. (2002). *Research methods in library and information science*. New Delhi: Cosmo Publications.
- Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Sage.
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Fernwood Publishing.
- Blanche, M. T., Blanche, M. J. T., Durrheim, K., & Painter, D. (Eds.). (2006). *Research in practice: Applied methods for the social sciences*. Juta and Company Ltd.
- Flick, U. (2020). *Introducing Research Methodology: Thinking Your Way Through Your Research Project*. Sage.
- Goddard, W., & Melville, S. (2004). *Research methodology: An introduction*. Juta and Company Ltd.
- Kuada, J. (2012). *Research methodology: A project guide for university students*. Samfundslitteratur
- McClure, C. R., & Hernon, P. (1991). *Library and information science research: Perspectives and strategies for improvement*. Norwood, N.J: Ablex Pub. Corp.
- Thomas, P. (2012). *Research methodology in library science*. Uxbridge: Koros.
- Wildemuth, B. M. (Ed.). (2016). *Applications of social research methods to questions in information and library science*. ABC-CLIO
- Glynn, L. (2006). A critical appraisal tool for library and information research. *Library Hi Tech*, 24(3), 387–399. <https://doi.org/10.1108/07378830610692154>

## FOURTH SEMESTER

**Course Code: LIS-DSE-401 B**  
**Course Title: INFORMETRICS**

**Course Category: DSE**  
**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	To provide knowledge to understand scope and applications of informetrics indicators in research impact measurement.	<ul style="list-style-type: none"> <li>To learn concepts related to informetrics indicators as academic impact metrics;</li> <li>To understand use of informetrics tools and techniques to measure research impact; and</li> <li>To know emerging issues in research impact study.</li> </ul>
					CE	PRJ	PRC	Viva			
3	1	0	4	<b>40</b>	<b>10</b>	Nil	Nil	Nil	<b>50</b>		

### Module I: Informetrics – Concepts and Components

#### Unit 1: Statistics for Informetrics

- Measures of Central Tendency – Mean, Median and Mode;
- Measures of Dispersion - Absolute and relative measures;
- Distributions, Bivariate Frequency Distribution - Bivariate data;
- Scatter Diagram, Correlation and regression, Rank Correlation;
- Level of significance and critical region; One tailed and two tailed tests;

#### Unit 2: Introduction to Informetrics

- Librametry, Bibliometrics, Scientometrics, Informetrics – Meaning, Scope and features;
- Cybermetrics and Webometrics – Meaning, scope, features;
- Laws of Bibliometrics, Application of Bibliometric laws in Web;
- Hyperlinks Vs. Citations (Sitations vs. Citations);
- Altmetrics and Article -Level Metrics.

### Module II: Informetrics – Tools and Trends

#### Unit 3: Indicators, Tools and Techniques

- Informetrics indicators (Journal Impact factor, Cite-Score, h-index and its derivatives, Scimago & SJR, Eigen factor) and Webometric indicators (Web Impact Factor, WISER etc);
- Informetrics data sources (SCI, SSCI, A&HCI, MSCI, SCOPUS, Google Scholar, Dimensiona.ai) and tools (PoP, BibExcel, Pajek, SocSciBot etc)
- Webometric tools – Generic search engines and specialized tools (LexiURL, SocSciBot, Internet archive, Pajek etc.);
- Altmetrics tools (Altmetric, ImpactStory, PloS);
- Bibliometric and Webometric techniques – Growth, Obsolescence (Synchronous vs. Diachronous studies), Citation and Co-Citation analysis, Network analysis, half-life, collaboration, Coupling, Informetric Modeling.

#### Unit 4: Applications and Trends

- Informetrics projects, initiatives and services;
- Webometrics projects, initiatives and services;
- Altmetrics projects, initiatives and services;
- Article-level metrics projects, initiatives and services;
- OA movement and Informetrics, Trends and future.

## FOURTH SEMESTER

**Course Code: LIS-DSE-401 B**  
**Course Title: INFORMETRICS**

**Course Category: DSE**  
**Course Type: Theory**

### Essential Reading List

- Egghe, L. (2005). *Power laws in the information production process: Lotkaian informetrics*. Amsterdam: Elsevier/Academic Press.
- Egghe, L., & Rousseau, R. (1990). *Introduction to informetrics: quantitative methods in library, documentation, and information science*. Amsterdam: Elsevier Science Publishers.
- Egghe, L., Neelameghan, A., & Sarada Ranganathan Endowment for Library Science. (2000). *Lectures on informetrics and scientometrics*. Bangalore: Sarada Ranganathan Endowment for Library Science.
- Egghe, Leo. (2009). *Lotkaian informetrics and applications to social networks*. The Belgian Mathematical Society.
- Glazier, Jack D, & Hall, Peter M. (1992). *Qualitative research in information management*. Englewood, CO: Libraries Unlimited,.
- Gorman, G. E., Clayton, P., Shep, S. J., & Clayton, A. (2005). *Qualitative research for the information professional: A practical handbook*. London: Facet.
- Hafner, Arthur W. (1997). *Descriptive statistical techniques for librarians*. (2nd ed.). Chicago: American Library Association.
- Martyn, John, & Lancaster, F. Wilfrid. (1981). *Investigative methods in library and information science: an introduction*. Arlington, VA: Information Resources Press.
- McClure, C. R., & Hernon, P. (1991). *Library and information science research: perspectives and strategies for improvement*. Norwood, N.J: Ablex Pub. Corp.
- Sen, B. K., Indian National Science Academy., & Indian National Commission for History of Science. (2005). *Growth of scientific periodicals in India (1901-1947)*.
- Simpson, I. S. (1990). *How to interpret statistical data: A guide for librarians and information scientists*. London: Library Association.
- Slater, Margaret. (1990). *Research methods in library and information studies*. London: Library Association.
- Stephen, Peter, & Hornby, Susan. (1995). *Simple statistics for library and information professionals*. London: Library Association.
- Stephen, Peter, & Hornby, Susan. (1995). *Simple statistics for library and information professionals*. London: Library Association.
- Tague-Sutcliffe, J. (1992). *Informetrics*. New York: Pergamon Press.

### Additional Reading List

- Alstete, J. W., Beutell, N. J., & Meyer, J. P. (2018). *Evaluating scholarship and research impact: History, practices, and policy development*. Emerald Group Publishing.
- Cronin, B., & Sugimoto, C. R. (2015). *Scholarly metrics under the microscope: From citation analysis to academic auditing*. Medford (N.J.: Information Today.
- Egghe, L. (2005). *Power laws in the information production process: Lotkaian informetrics*. Amsterdam: Elsevier Academic Press.
- Gupta, B. M. (1996). *Bibliometrics, scientometrics and informetrics*. New Delhi: Segment Books.
- Harzing, A.-W. (2011). *The publish or perish book*. Melbourne, Australia: Tarma Software Research.
- Ingwersen, P., & Ingwersen, P. (2012). *Scientometric Indicators and Webometrics--and the Polyrepresentation Principle Information Retrieval*. Sarada Ranganathan Endowment for Library Science
- Qiu, J., Zhao, R., Yang, S., & Dong, K. (2017). *Informetrics: Theory, methods and applications*. Singapore: Springer.
- Sugimoto, C. (2016). *Theories of informetrics and scholarly communication*. De Gruyter.
- Tananbaum, G. (2013). Article-level metrics: a SPARC primer. *SPARC*, [www.sparc.org/bm~doc/sparc-alm-primer.Pdf](http://www.sparc.org/bm~doc/sparc-alm-primer.Pdf)
- Thelwall, M. (2009). *Introduction to webometrics: Quantitative web research for the social sciences*. San Rafael: Morgan & Claypool Publ.
- Thelwall, M. (2009). *Introduction to webometrics: Quantitative web research for the social sciences*. San Rafael: Morgan & Claypool Publ.
- Wolfram, D. (2003). *Applied informetrics for information retrieval research*. Westport, Conn: Libraries Unlimited.

## FOURTH SEMESTER

**Course Code: LIS-DSE-402 A**  
**Course Title: DIGITAL LIBRARY SYSTEM I**

**Course Category: DSE**  
**Course Type: Theory**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To make students aware about the next big movement in library services – the digital library systems and its possible roles to reshape future library services.</li> <li>To learn concepts related to digital library systems;</li> <li>To know standards and software related to digital library systems; and</li> <li>To explore the use of DL architecture and standards in developing digital library systems.</li> </ul>

### Module I: Introduction to Digital Library System

#### Unit 1: Historical and Theoretical Foundations

- Nature, concepts, scopes, definitions and types of digital libraries;
- History of digital library initiatives, institutional repositories and open knowledge movement;
- Social, legal and economic issues;
- Digital information resources and Digital archiving
  - Digital information resources – features, types and bitstream formats;
  - Analog (traditional) vs. Digital information resources;
  - Digital archiving – features, advantages and applications;
- Traditional, automated, digital and virtual library systems – comparative study.

#### Unit 2: Organization of Digital Objects - Issues and Challenges

- Digital information resources and Digital archiving – Metadata framework;
- Digital library – Models and Initiatives;
- Crosswalks and Interoperability; Crosswalks of metadata schemas;
- Interoperability initiatives and standards;
- Digital Library – Software and Standards.

### Module II: Digital Library System – Architecture and Design

#### Unit 3: Architecture, Information Retrieval and User interfaces

- Web architecture – models, standards, protocols, tools and technologies;
- Web databases - technologies, standards and tools; products and services;
- Architecture of digital library systems - design issues, design principles and models;
- Information retrieval in digital library systems - retrieval models for digital library systems, use of vocabulary control devices, text retrieval tools – types, features and comparisons (Lucene, MGPP, Solr), search techniques – Boolean, relational and positional operators etc and study of information retrieval features of selected digital library systems;
- User interfaces of digital library systems – models, frameworks, design issues, principles, standards and study of user interfaces of selected digital library systems.

#### Unit 4: Design and Development of Digital Library Systems

- Digitization and collection development (hardware, software, process, file formats, issues, policies and principles, collection management);
- Collection development – steps and best practices;
- Federated search service – metadata-level and content-level harvesting;
- Web-scale resource discovery, Semantic web and digital libraries, Web accessibility;
- Trends and future.

## FOURTH SEMESTER

**Course Code: LIS-DSE-402 A**  
**Course Title: DIGITAL LIBRARY SYSTEM I**

**Course Category: DSE**  
**Course Type: Theory**

### Essential Reading List

- Arms, W. (2000). *Digital libraries*. Cambridge MA: MIT Press,.
- Barnes, S. J. (2004). *Becoming a digital library*. New York: Marcel Dekker.
- Bayross, I. (2000). *Using Apache, MySQL, PHP and PERL on Linux*. New Delhi: BPB Publications.
- Borgman, G.L. (2000). *From Gutenberg to the global information infrastructure: access to information in networked world*. Cambridge MA: MIT Press.
- Briggs, A. (2005). *The definitive guide to user mode Linux*. Mumbai: Shrof Publishers.
- Brophy, P. (2001). *The library in the twenty-first century*. London: Library Association.
- Caplan, Priscilla. (2000). *Metadata fundamentals for all librarians*. Chicago:: ALA.
- Chowdhury, G.G., & Chowdhury, S. (2003). *Introduction to digital libraries*. London: Facet Publishing.
- Crawford, W., & Gorman, M. (1995). *Future libraries: Dreams, madness & reality*. Chicago: American Library Association.
- Deegan, M, & Tanner, S. (2003). *Digital futures: strategies for the information age*. London: Library Association.
- Fox, E. A., & Torres, R. S. (2014). *Digital Library Technologies: Complex Objects, Annotation, Ontologies, Classification, Extraction, and Security*. San Rafael: Morgan & Claypool Publishers.
- Fox, E. A., Logan, E., & International Conference on Asian Digital Libraries. (2004). *An Asian digital libraries perspective*. Amsterdam: Elsevier Ltd.
- Gorman, G.E, & Dorner, D.G. (2004). *Metadata applications and management*. London: Facet Publishing,.
- Hung Huang, K. (Ed.). (2011). *Digital Libraries: Methods and Applications*. IntechOpen. <https://doi.org/10.5772/608>
- Kruk, S. R., & McDaniel, W. D. (2009). *Semantic digital libraries*. Berlin: Springer.
- Lesk, M. (1997). *Practical digital libraries: books, bytes and bucks*. San Francisco: Morgan Kaufmann.
- Mukhopadhyay, P. (2014). *Interoperability and retrieval*. Paris: UNESCO.
- Roncevic, M. (2020). *One country one library: The model for an open national digital library that serves the changing needs of twenty-first century users, publishers, and libraries*.

- Unicode Consortium. (2005). *Unicode Consortium: The Unicode standard, version 4.1*. Reading: Addison Wesley.
- Witten, I. H., Bainbridge, D., & Nichols, D. M. (2010). *How to build a digital library*. Burlington, MA: Morgan Kaufmann Publishers.

### Additional Reading List

- Getting started with cloud computing: A LITA guide*. (2011). London: Facet Publishing.
- Hunter, G. S. (2000). *Preserving digital information: A how-to-do-it manual*. New York: Neal-Schuman Publishers.
- Marchionini, G. (1995). *Information seeking in electronic environments*. Cambridge: Cambridge University Press.
- Meadow, C.T, Boyce, B.R., & Kraft, D.H. (2000). *Text information retrieval systems* (2nd ed.). San Diego: Academic Press.
- Myers, D. (2004). *Professional Java XML programming with servlet and JSP*. Mumbai: Shrof Publishers.
- Oleck, J., & Primary Research Group. (2012). *Creating the digital library*. New York: Primary Research Group, Inc.
- Raymond, E. S. (2001). *The cathedral and the bazaar: musings on Linux and open source by an accidental revolutionary* . (Rev. ed.). Cambridge: O'reilly and Associates Inc.
- Shen, R., Gonçalves, M. A., & Fox, E. A. (2013). *Key issues regarding digital libraries: Evaluation and integration*. San Rafael, Calif.: Morgan & Claypool.
- Stewart, C. (2010). *The academic library building in the digital age: A study of construction, planning, and design of new library space*. Chicago, Ill: Association of College and Research Libraries.
- Tanenbaum, A.S. (2001). *Computer networks* (3rd ed.). New Delhi: Prentice-Hall.
- Thomas A. Peter. (2000). Library Trends: Special issue: Assessing digital library services, 49(2).
- Wright, A.S. (2004). *Professional PERL programming*. Mumbai: SPD/Apress Reprints.
- Yu, P. K. (2007). *Intellectual property and information wealth: Issues and practices in the digital age*. Westport, Conn: Praeger Publishers.

## FOURTH SEMESTER

**Course Code: LIS-DSE-402 B**

**Course Title: COMMUNITY INFORMATION SYSTEMS AND SERVICES**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Term-end Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
3	1	0	4	40	10	Nil	Nil	Nil	50	To introduce learners with the concepts of community information services and systems with public library as service providers.	<ul style="list-style-type: none"> <li>To learn concepts related to community information resources, systems and services;</li> <li>To know standards and software related to CISs; and</li> <li>To explore the applications of software and standards in developing digital CIS.</li> </ul>

### Module I: Introduction to Community Information Services

#### Unit 1: Fundamentals of Community Information Services (CIS)

- Nature, scope, use and users of community information, Survival Information and Citizen Action Information, Community of place vs. community of interest;
- Community Information Services – Definition, Need, Features and objectives;
- Providers of Community Information Services – Systems, Agencies and Institutions, Libraries as CIS Providers: Global and Indian scenario;
- Role of public libraries — IFLA/UNESCO Public Library Manifesto, Library Outreach Programmes, Library Publicity and Public Relation, E-Governance: Meaning, scope and purposes, E-Governance institutions in India;
- Community Information Systems and Services: Global and National Scenario.

#### Unit 2: Community Information Resources

- Nature and Scope, Differences with bibliographical resources;
- Documentary Sources: area profiles, land records, official publications, magazines, maps & atlases, photographs, personal collections, leaflets, local history materials, etc;
- Institutional Sources: Publications of local governments and government agencies, educational and religious institutions, NGOs, political parties, labour and peasant organizations, etc;
- Human Resources: village level leaders, field extension personnel, religious leaders, government officials, etc;
- Cultural heritage resources and Digital resources.

### Module II: Community Information Resources – Organization to Dissemination

#### Unit 3: Community Information Resources: Organization and Access

- Community Information Resources – data formats and metadata initiatives, bibliographic format vs. Community information format, CCO and other initiatives;
- Organization of Community Information Resources
  - Need of organization and Requirements for organization;
  - Content designators – CCF/F and MARC 21 CIF.
  - Metadata – Schemas and Encoding;
- Integrated processing of Community Information Resources and Bibliographic Resources, Subject Access to Community Information Resources – Vocabulary control tools;
- Access to Community Information Resources – Media and Mechanisms;
- Projects and initiatives on community information organization.

#### Unit 4: Digital Community Information Services

- Digital Community Information Services – Need, Advantages, Tools and Techniques;
- Software Framework for Community Information Services: Models, Components, Clusters, and Integration;
- Community Communication and Interaction: Tools, Techniques and Processes;
- User Interface of Community Information Services: Models and Applications;
- Multilingual Community Information Services: Indic Script based interface, processing and retrieval.

## FOURTH SEMESTER

**Course Code: LIS-DSE-402 B**

**Course Title: COMMUNITY INFORMATION SYSTEMS AND SERVICES**

**Course Category: DSE**

**Course Type: Theory**

### Essential Reading List

- Ainley, P. (1980). *Basics of community information: An action handbook for librarians*. London: Association of Assistant Librarians.
- American library Association. (1966). *Minimum standards for public library systems*. Chicago: ALA.
- Bunch, A. (1982). *Community information services: the origin, scope and development*. London: Clive Bingley.
- Bunch, A. (1993). *The basics of community information work*. London: Library Association.
- Coleman (P). (1986). *Community information policy and provisions. ASLIB Proceedings*, 38 (9), 305-316.
- Croneberger, R., Kapecky, M., Luck, C., & Appalachian Adult Education Center (Morehead State University). (1975). *The library as a community information and referral center*. Morehead, Ky: Appalachian Adult Education Center, Morehead State University.
- Durrance, J. C., & Fisher, K. E. (2002). *Online community information: Creating a nexus at your library*. Chicago, Ill: American Library Association.
- Durrance, J. C., & Schneider, K. G. (1996). Public library community information activities: Precursors of community networking partnerships. *Ann Arbor: School of Information, University of Michigan*. Retrieved March, 5, 1997. Available <<http://www.si.umich.edu>>
- Durrance, J.C. (1986). *Community information services: an innovation at the beginning of its second decade*. In *Advances in librarianship*, (Vol. V-13). Orlando: Academic Press.
- Keehan, A. L. (1980). *Establishing a local community information service: Part 1*. Library Board of Western Australia.
- LAWS Project Team: Integrated public sector vocabulary. (2005). Retrieved from <http://www.esd.org.uk/standards/ipsv/1.00/ipsv.doc>
- Library Association. (1980). *Community information: what libraries can do : a consultative document*. London: Library Association.

### Additional Reading List

- Library of Congress: MARC 21 concise format for community information*. (2006). washington: Library of Congress.
- Matthew, H. (1988). *Community information: A manual for beginners*. Newcastle-under-Lyme: AAL Pub.
- Mukhopadhyay, P. (2004). Community information services through web and CDROM: An open source framework for public libraries in India. Retrieved March 2014 from <http://www.drct.isibang.ac.in/xmlui/handle/1849/185>
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- Neelameghan, A. (2006). E-communities, community knowledge and knowledge management. *KnowGenesis, International Journal of Technical Communication*, 1(2), 21-27.
- Pantry, S. (1999). *Building community information networks: Strategies and experiences*. London: Library Association Pub.
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- Rowlat, M. (2002). A new profile for citizens' (or community) information? *Ariadne*, 19, 1-10.
- Sarkhel, J. K. (2000). A generalized framework for the design and development of an area profile. *Vidyasagar University Journal of Library and Information Science*. 5; 2000; pp. 3 - 16.
- Turick, D. (1978). *Community information services in libraries*. New York: Library Journal.

## FOURTH SEMESTER

**Course Code: LIS-DSE-403A**  
**Course Title: DIGITAL LIBRARY SYSTEM II**

**Course Category: DSE**  
**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	2	2	4	<b>40</b>	Nil	Nil	<b>10</b>	Nil	<b>50</b>	To impart the skills require to setup a digital library system by using open source software and open standards for rendering services. <ul style="list-style-type: none"> <li>To provide basic concepts related to digital library software;</li> <li>To understand basic steps in collection building; and</li> <li>To explore the process of harvesting and search federation.</li> </ul>

### Module I: Installation and Configuration

#### Unit 1: Digital Library Software – Centralized Processing and Distributed Access

- Installation and configuration;
- Metadata management;
- Collection building;
- Multilingual data management;
- Access and portability.

#### Unit 2: Digital Library Software – Distributed Processing and Distributed Access

- Installation and configuration;
- Metadata management;
- Collection building and Collection delegation;
- Multilingual data management;
- Access and Usage management.

### Module II: Workflow Management

#### Unit 3: Resource Organization

- Communities, Sub-communities and Collections;
- Metadata, License and Bitstream;
- E-people and authority delegation;
- Metadata registry;
- Interoperability management – OAI/PMH, REST, SWORD.

#### Unit 4: Harvesting and Search Federation

- Harvesting tools and software-level integration of harvesting tools;
- Collection building through harvesting;
- Archiving cultural and heritage objects;
- Search federation techniques;
- Web-scale resource discovery.



## FOURTH SEMESTER

**Course Code: LIS-DSE-403 A**

**Course Title: DIGITAL LIBRARY SYSTEM II**

**Course Category: DSE**

**Course Type: Practicum**

### Essential Reading List

- Arms, W. (2000). *Digital libraries*. Cambridge MA: MIT Press,.
- Barnes, S. J. (2004). *Becoming a digital library*. New York: Marcel Dekker.
- Bayross, I. (2000). *Using Apache, MySQL, PHP and PERL on Linux*. New Delhi: BPB Publications.
- Borgman, G.L. (2000). *From Gutenberg to the global information infrastructure: access to information in networked world*. Cambridge MA: MIT Press.
- Briggs, A. (2005). *The definitive guide to user mode Linux*. Mumbai: Shrof Publishers.
- Brophy, P. (2001). *The library in the twenty-first century*. London: Library Association.
- Caplan, Priscilla. (2000). *Metadata fundamentals for all librarians*. Chicago:: ALA.
- Chowdhury, G.G., & Chowdhury, S. (2003). *Introduction to digital libraries*. London: Facet Publishing.
- Crawford, W., & Gorman, M. (1995). *Future libraries: Dreams, madness & reality*. Chicago: American Library Association.
- Deegan, M, & Tanner, S. (2003). *Digital futures: strategies for the information age*. London: Library Association.
- Fox, E. A., & Torres, R. S. (2014). *Digital Library Technologies: Complex Objects, Annotation, Ontologies, Classification, Extraction, and Security*. San Rafael: Morgan & Claypool Publishers.
- Fox, E. A., Logan, E., & International Conference on Asian Digital Libraries. (2004). *An Asian digital libraries perspective*. Amsterdam: Elsevier Ltd.
- Gorman, G.E, & Dorner, D.G. (2004). *Metadata applications and management*. London: Facet Publishing,.
- Hung Huang, K. (Ed.). (2011). *Digital Libraries: Methods and Applications*. IntechOpen. <https://doi.org/10.5772/608>
- Kruk, S. R., & McDaniel, W. D. (2009). *Semantic digital libraries*. Berlin: Springer.
- Lesk, M. (1997). *Practical digital libraries: books, bytes and bucks*. San Francisco: Morgan Kaufmann.
- Mukhopadhyay, P. (2014). *Interoperability and retrieval*. Paris: UNESCO.
- Roncevic, M. (2020). *One country one library: The model for an open national digital library that serves the changing needs of twenty-first century users, publishers, and libraries*.

Unicode Consortium. (2005). *Unicode Consortium: The Unicode standard, version 4.1*. Reading: Addison Wesley.

Witten, I. H., Bainbridge, D., & Nichols, D. M. (2010). *How to build a digital library*. Burlington, MA: Morgan Kaufmann Publishers.

### Additional Reading List

- Getting started with cloud computing: A LITA guide*. (2011). London: Facet Publishing.
- Hunter, G. S. (2000). *Preserving digital information: A how-to-do-it manual*. New York: Neal-Schuman Publishers.
- Marchionini, G. (1995). *Information seeking in electronic environments*. Cambridge: Cambridge University Press.
- Meadow, C.T, Boyce, B.R., & Kraft, D.H. (2000). *Text information retrieval systems* (2nd ed.). San Diego: Academic Press.
- Myers, D. (2004). *Professional Java XML programming with servlet and JSP*. Mumbai: Shrof Publishers.
- Oleck, J., & Primary Research Group. (2012). *Creating the digital library*. New York: Primary Research Group, Inc.
- Raymond, E. S. (2001). *The cathedral and the bazaar: musings on Linux and open source by an accidental revolutionary* . (Rev. ed.). Cambridge: O'reilly and Associates Inc.
- Shen, R., Gonçalves, M. A., & Fox, E. A. (2013). *Key issues regarding digital libraries: Evaluation and integration*. San Rafael, Calif.: Morgan & Claypool.
- Stewart, C. (2010). *The academic library building in the digital age: A study of construction, planning, and design of new library space*. Chicago, Ill: Association of College and Research Libraries.
- Tanenbaum, A.S. (2001). *Computer networks* (3rd ed.). New Delhi: Prentice-Hall.
- Thomas A. Peter. (2000). Library Trends: Special issue: Assessing digital library services, 49(2).
- Wright, A.S. (2004). *Professional PERL programming*. Mumbai: SPD/Apress Reprints.
- Yu, P. K. (2007). *Intellectual property and information wealth: Issues and practices in the digital age*. Westport, Conn: Praeger Publishers.

## FOURTH SEMESTER

**Course Code: LIS-DSE-403 B**

**Course Title: SEMANTIC WEB TECHNOLOGIES AND LIBRARIES**

**Course Category: DSE**

**Course Type: Practicum**

Credit Structure				Marks Distribution					Objective	Learning Outcomes
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	2	2	4	<b>40</b>	Nil	Nil	<b>10</b>	Nil	<b>50</b>	To help learners to be acquainted with the semantic web technologies with a special emphasis on library linked data. <ul style="list-style-type: none"> <li>To provide concepts, features, scopes and advantages of Semantic web technologies in future generation library services;</li> <li>To introduce learners with semantic web tools; and</li> <li>To explore the use of LOD in library systems.</li> </ul>

### Module I: Semantic Web: Concepts and Components

#### Unit 1: Introduction to Semantic Web

- Semantic Web – what and why, concepts and possibilities;
- Major technologies for semantic web;
- Semantic web and scholarly resources;
- Semantic web technologies – applications in library services;
- Projects and initiatives.

#### Unit 2: Semantic Web Components

- Semantic web layers;
- Major components;
- RDF Triple, RDF-XML; RDF and Metadata;
- Uniform Resource Identifier;
- Ontology.

### Module I: Semantic Web: Tools and Applications

#### Unit 3: Semantic Web Application Tools

- Ontology editors;
- RDF support tools;
- SPARQL - RDF Query Language;
- RDF converter – MARC to RDF, DCMES to RDF;
- Semantic Web Framework (Apache-Jena etc).

#### Unit 4: LODLAM – Linked Open Data for Libraries, Archive and Museums

- Linked Open Data (LOD) – what and why;
- W3C recommendations;
- LOD applications scenario;
- LOD in libraries – name authority, subject authority etc;
- Trends and future.

## FOURTH SEMESTER

**Course Code: LIS-DSE-403 B**

**Course Title: SEMANTIC WEB TECHNOLOGIES AND LIBRARIES**

**Course Category: DSE**

**Course Type: Practicum**

### Essential Reading List

- Antoniou, G., & Antoniou, G. (2012). *A Semantic Web primer*. Cambridge, Mass: MIT Press.
- Allemang, D. & Hendler, J. (2011). *Semantic Web for the working ontologist : effective modeling in RDFS and OWL*, Elsevier.
- Fox, E. A., & Torres, R. S. (2014). *Digital library technologies: Complex objects, annotation, ontologies, classification, extraction, and security*.
- Halpin, H. (2012). *Social semantics : the search for meaning on the Web*, Springer.
- Heath, T. & Bizer, C. (2011). *Linked data [electronic resource] : evolving the web into a global data space* Morgan & Clypool.
- Hitzler, P., Krotzsch, M. & Rudolf, S. (2010). *Foundations of Semantic Web technologies*, Chapman & Hall.
- Hjelm, J. (2001). *Creating the semantic Web with RDF: Professional developer's guide*. New York: Wiley.
- Jones, K. M. L., & Farrington, P.-A. (2011). *Using WordPress as a library content management system*. Chicago, IL: ALA TechSource.
- Langville, A. N., & Meyer, C. D. (2006). *Google's PageRank and beyond: The science of search engine rankings*. Princeton, N.J: Princeton University Press.
- Segaran, T., Taylor, J., & Evans, C. (2009). *Programming the Semantic Web*. Beijing: O'Reilly

### Additional Reading List

- Auer, S. (2014). *Linked open data -- creating knowledge out of interlinked data*. Place of publication not identified: Springer.
- Fürste, F. M. (2011). *Linked Open Library Data: Bibliographische Daten und ihre Zugänglichkeit im Web der Daten ; Innovationspreis 2011*. Wiesbaden: Dinges & Frick.
- Lin, Q., Allebach, J. P., & Fan, Z. (2011). *Imaging and printing in a web 2.0 world II*. Bellingham, WA: SPIE.
- Meadow, C. T., Boyce, B. R., & Kraft, D. H. (2000). *Text information retrieval systems*. San Diego: Academic Press.
- Méndez Rodríguez, Eva María, & Greenberg, Jane. (2012). *Linked data for open vocabularies and HIVE's global framework*. EPI SCP.
- Ndubisi, N. O. (2006). *Content management systems*. Bradford, England: Emerald Group Pub.
- Rüger, S. M. (2010). *Multimedia information retrieval*. San Rafael, Calif.: Morgan & Claypool Publishers.
- Vossen, G., & Hagemann, S. (2007). *Unleashing Web 2.0: From concepts to creativity*. Amsterdam: Elsevier/Morgan Kaufmann.
- Warner, J. (2010). *Human information retrieval*. Cambridge, Mass: MIT Press.
- White, M. S. (2005). *The content management handbook*. Abingdon: Facet Pub.
- Wong, W, Liu, W, Bennamoun, M, Wei Wang,, Payam Barnaghi,, & Andrzej Bargiela,. (2011). *Learning SKOS relations for terminological ontologies from text*. IGI Global
- Yu, H. (2005). *Content and workflow management for library web sites: Case studies*. Hershey, PA: Information Science Pub.

## FOURTH SEMESTER

**Course Code: LIS-DSE-404 A**

**Course Title: LIBRARY SERVICE PLATFORM**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	<b>40</b>	Nil	<b>10</b>	Nil	Nil	<b>50</b>	To impart knowledge for developing library discovery based integration of retrieval silos in a library as a component of LSP.	<ul style="list-style-type: none"> <li>To provide concepts, features, scopes and advantages of LSP over traditional ILS;</li> <li>To explore open source library discovery tools ; and</li> <li>To understand the processes related to LSP and library discovery.</li> </ul>

### Module I: Introduction to Library Service Platform

#### Unit 1: Library Service Platform – Concepts and Components

- Library Service Platform (LSP) – what and why;
- ILS transition – social and technical factors;
- LSP vs ILS;
- LSP – global recommendations (OLE and ILSDI);
- LSP components.

#### Unit 2: Library Software Ecosystem

- Components of library ecosystem;
- LSP prerequisites – standards and software;
- LSP providers and LSP products;
- LSP technologies and LSP gold standards;
- LSP projects: OLE and FOLIO.

### Module II: Library Service Platform - Technologies

#### Unit 3: Library Discovery

- Library discovery – what and why;
- Library discovery – mechanisms and standards;
- Library discovery – software and tools;
- Open source discovery systems;
- Library discovery and full-text indexing.

#### Unit 4: Library Workflow Integration

- SoA architecture;
- Multi tenancy and Cloud hosting;
- FOLIO guidelines for workflow integration;
- ILS and ERMS integration;
- Trends and future.

## FOURTH SEMESTER

**Course Code: LIS-DSE-404 A**

**Course Title: LIBRARY SERVICE PLATFORM**

**Course Category: DSE**

**Course Type: Theory**

### Essential Reading List

- Bowers, Steven K., and Elliot J. Polak. "The Future of Cloud-Based Library Systems." In *The Top Technologies Every Librarian Needs to Know: A LITA Guide*, edited by Kenneth J. Varnum, 43–55. Chicago: ALA TechSource, 2014.
- Breeding, M., Discovery product functionality (2015). *Library technology reports*, 50(1), 5-32.
- Breeding, Marshall, The future of library resource discovery: a white paper commissioned by the NISO Discovery to Delivery (D2D) Topic Committee. Council of Undergraduate Research (2015). Available at: [http://www. cur. org/about\\_cur/ frequently\\_asked \\_questions\\_ /# 2](http://www.cur.org/about_cur/frequently_asked_questions_/#2) (Accessed on August 14, 2016).
- Breeding, Marshall. "APIs Unify Library Services." *Computers in Libraries* 34, no. 3 (April 2014): 22–24.
- Chad, K. The library management system is dead–long live the library ecosystem. *CILIP Update magazine* (2013): 18-20. Available at: [http://www.kenchadconsulting.com/wp-content/uploads/2013/09/LMS\\_is\\_dead\\_long\\_live\\_ecosystem\\_CILIP-Update\\_Sept2013.pdf](http://www.kenchadconsulting.com/wp-content/uploads/2013/09/LMS_is_dead_long_live_ecosystem_CILIP-Update_Sept2013.pdf) (Accessed on October 21, 2016).
- Chad, Ken. (2012). "Specification for a Unified (Next Generation) Library Resource Management System," version 2. Ken Chad Consulting, August 2012. <https://libtechrfp.wikispaces.com/Unified+library+resource+management+specification>.
- De Smet, Egbert, and Sangeeta N. Dhamdhare, *E-discovery tools and applications in modern libraries*. IGI Global, 2016.
- Dempsey, Lorcan, Untangling the library systems environment. In OCLC Book of the Blog, Lorcan Dempsey's Weblog (2009). Available at: [http://orweblog.oclc.org/untangling-the-library- systems-environment/](http://orweblog.oclc.org/untangling-the-library-systems-environment/) (Accessed on 14 August, 2016).
- UKSG, Impact of library discovery technologies: a report for UK (2013). Available at: [http://www.uksg.org/sites/uksg.org/files/UKSG\\_final\\_report\\_16\\_12\\_13\\_by\\_LI SU.pdf](http://www.uksg.org/sites/uksg.org/files/UKSG_final_report_16_12_13_by_LI_SU.pdf) (Accessed on 25 September, 2016).

### Additional Reading List

- Fu, Ping. "Supporting the Next-Generation ILS: The Changing Roles of Systems Librarians." *Journal of Library Innovation* 5, no. 1 (2014): 30–42.
- Grant, C. (November 28, 2016). FOLIO, acronym for "Future Of Libraries Is Open"? I'd suggest: "Fantasy Of Librarians Inflamed by Organizations". *Thoughts from Carl Grant*, 2016-11.
- Grant, Carl. "The Future of Library Systems: Library Services Platforms." *Information Standards Quarterly* 24, no. 4 (Fall 2012): 4–15.
- Helmer, John F., Stephen Bosch, Chris Sugnet, and Cory Tucker. "Innovation and Leadership through Collaboration: The Orbis Cascade Alliance Experience: An Interview with John Helmer." *Collaborative Librarianship* 4, no. 4 (2012): 183–85.
- Levy, Richard. "Library in the Cloud with Diamonds: A Critical Evaluation of the Future of Library Management Systems." *Library Hi Tech News* 30, no. 3 (2013): 9–13.
- Manifold, Alan. "Integrated Library Systems and Dis-Integrative Pressures." *International Trends in Library and Information Technology* 1, no. 2 (May–August 2014): 13–25.
- NISO Open Discovery Initiative Working Group, Open Discovery Initiative: Promoting Transparency in Discovery (2014). Available at: [http://www.niso.org/apps/group\\_public/download.php/14820/rp-19-2014\\_ODI.pdf](http://www.niso.org/apps/group_public/download.php/14820/rp-19-2014_ODI.pdf) (Accessed on August 22, 2016).
- Popp, Mary Pagliero, ed. *Planning and implementing resource discovery tools in academic libraries*. IGI Global, 2012.
- Wang, Yongming, and Trevor A. Dawes. "The Next Generation Integrated Library System: A Promise Fulfilled?" *Information Technology and Libraries* 31, no. 3 (2012): 76–84.
- Yeh, J., Sie, S., & Chen, C. (January 01, 2009). Extensible Digital Library Service Platform.

## FOURTH SEMESTER

**Course Code: LIS-DSE-404 B**  
**Course Title: OPEN KNOWLEDGE SYSTEM**

**Course Category: DSE**  
**Course Type: Theory**

Credit Structure				Marks Distribution					Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	2	0	4	40	Nil	10	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide knowledge related to OA paths, tools, licensing and services for enabling new generation of library services and products.</li> <li>To know concepts, features, scopes and advantages of open access (OA) resources;</li> <li>To understand OA sources, policies and licensing; and</li> <li>To explore the use of open contents in education, research and their integration with library systems.</li> </ul>

### Module I: Open Access: Philosophy and Infrastructure

#### Unit 1: Introduction to Open Knowledge System

- Scholarly communication and Open knowledge movement (history and landmarks);
- Open Access (OA) resources – nature, features, need and advantages (including citation advantages through article-level metrics);
- Open library system (O<sup>3</sup> library) – open contents, open source software and open standards;
- OA declarations – global and national;
- OA initiatives – global and national levels.

#### Unit 2: Open Knowledge System - Mandate, Policies and Licensing

- Scholarly communication and Open knowledge movement (history and landmarks);
- Open Access (OA) resources – nature, features, need and advantages;
- OA initiatives – global and national levels;
- OA declarations, mandates and policies – need and types;
- OA rights (author addenda) and licensing (Creative Commons and others).

### Module II: Open Access: Services and Technologies

#### Unit 3: Open Access Sources and Services

- OA Pathfinders and Gateways;
- Gold path of OA and Green path of OA;
- OA federation (BASE, CORE etc), Open Data, Open Innovations;
- OA educational resources and OA citation services;
- OA policy tools – SHERPA/RoMEO, SHERPA/JULIET, OpenDOAR.

#### Unit 4: Open Access – Interoperability and Integration

- OA interoperability initiatives – metadata-level, content-level, network-level, identifier-level, object-level and usage data-level;
- OA interoperability standards;
- OA content management - overview;
- OA content management workflow;
- Trends and future.

## FOURTH SEMESTER

**Course Code: LIS-DSE-404 B**  
**Course Title: OPEN KNOWLEDGE SYSTEM**

**Course Category: DSE**  
**Course Type: Theory**

### Essential Reading List

- Bailey, C. W., & Association of Research Libraries. (2005). *Open access bibliography: Liberating scholarly literature with e-prints and open access journals*. Washington, DC: Association of Research Libraries.
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- Chan, L., Kirsop, B., & Arunachalam, S. (2005). *Open access archiving: the fast track to building research capacity in developing countries*. London: Science and development network (SciDevNet)
- Crawford, W. (2011). *Open access: what you need to know now*. Chicago: American Library Association.
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- Oberländer, A., & Reimer, T. (2019). *Open Access and the Library*. MDPI - Multidisciplinary Digital Publishing Institute. <https://doi.org/10.3390/books978-3-03897-741-4>

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- Vos, R. A., & Fernandes, P. L. (2017). Open Science, Open Data, Open Source. Pfern/OSODOS v1.0.0 (v1.0.0). Zenodo. [doi.org/10.5281/zenodo.1015288](https://doi.org/10.5281/zenodo.1015288)

### Additional Reading List

- Jacobs, N. (2006). *Open access: key strategic, technical and economic aspects*. Oxford: Chandos.
- Mukhopadhyay, P. (2014). *Interoperability initiatives*. In UNESCO course on Open Access (Module 4: Interoperability and Retrieval in OA – Unit 2). New Delhi: CEMCA/UNESCO.
- Mukhopadhyay, P. (2014). *Resource description*. In UNESCO course on Open Access (Module 4: Interoperability and Retrieval in OA – Unit 1). New Delhi: CEMCA/UNESCO.
- Mukhopadhyay, P. (2014). *Retrieval*. In UNESCO course on Open Access (Module 4: Interoperability and Retrieval in OA – Unit 2). New Delhi: CEMCA/UNESCO.
- Okada, A., Connolly, T., & Scott, P. J. (2012). *Collaborative learning 2.0: Open educational resources*. Hershey PA: Information Science Reference.
- Schmidt, B., & Kuchma, I. (2012). *Implementing open access mandates in Europe: OpenAIRE study on the development of open access repository communities in Europe*. Göttingen: Universitätsverlag Göttingen.
- Swan, A., & Chan, L. (2009). *Open access scholarly information sourcebook: practical steps for implementing open access*. S.l.: Openoasis.org.
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## FOURTH SEMESTER

**Course Code: LIS-DSE-405 A**

**Course Title: DATA CARPENTRY AND LIBRARIES**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	Nil	10	Nil	Nil	50	To provide knowledge related to applications of data carpentry tools for developing data intensive library services by using a data wrangling tool.	<ul style="list-style-type: none"> <li>To know concepts, features, scopes and advantages of Openrefine as data wrangling software;</li> <li>To understand REST/API based data fetching, reconciliation and NER; and</li> <li>To explore the use of open access data sources.</li> </ul>

### Module I: Data Carpentry: Concepts and Tools

#### Unit 1: From Data Carpentry to Library Carpentry

- Data carpentry and Software carpentry – what and why;
- Library carpentry – scopes and features;
- Library carpentry – concepts and prerequisites;
- Data carpentry – application areas;
- Data intensive library services.

#### Unit 2: Introduction to Openrefine

- Openrefine – genesis and features;
- Openrefine – installation and configuration;
- Openrefine data formats – CSV, TSV, JSON and MARC;
- Openrefine – project creation and management;
- Openrefine - project export/import, dataset export/import.

### Module II: Data Carpentry Processes and Techniques

#### Unit 3: Data Wrangling Techniques

- Concept of REST/API based data wrangling;
- Sources of dataset APIs in LIS domain;
- API based data fetching in Openrefine;
- Named Entity Recognition – tools and techniques;
- Data reconciliation – tools and techniques.

#### Unit 4: Data Extraction and Visualization

- Introduction to General Refine Expression Language (GREL);
- GREL for strings management;
- GREL for numeric data and dates management;
- GREL for data extraction;
- Openrefine plugins – applications and utilities.



## FOURTH SEMESTER

**Course Code: LIS-DSE-405 A**

**Course Title: DATA CARPENTRY AND LIBRARIES**

**Course Category: DSE**

**Course Type: Theory**

### Essential Reading List

- Baker, J., Moore, C., Priego, E., Alegre, R., Cope, J., Price, L., ... & Wilson, G. (2016). Library Carpentry: software skills training for library professionals. *Liber Quarterly*, 26(3). <https://pdfs.semanticscholar.org/4885/c42e9b220177e59bd80c44b7681690bf1b08.pdf>
- Delpuch, A. (2019). A survey of OpenRefine reconciliation services. *arXiv preprint arXiv:1906.08092*.
- Delpuch, A. (2021). *OpenRefine user manual*. <https://docs.openrefine.org/>
- Guidry, T. (2021). *External Resources · OpenRefine/OpenRefine Wiki*. GitHub. <https://github.com/OpenRefine/OpenRefine>
- Karsdorp, F., Kestemont, M., & Riddell, A. (2021). *Humanities Data Analysis: Case Studies with Python*. Princeton University Press.
- Library Carpentry. (2019). *Past Workshops*. Library Carpentry. [https://librarycarpentry.org/past\\_workshops/](https://librarycarpentry.org/past_workshops/)
- Library Carpentry. (2020). *Our lessons*. Library Carpentry. <https://librarycarpentry.org/lessons/>
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- Pugachev, S. (2019). What Are "The Carpentries" and What Are They Doing in the Library?. *portal: Libraries and the Academy*, 19(2), 209-214. <https://muse.jhu.edu/article/721420>
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- Roy, L., & Sholler, D. (2019). What reference librarians should know about data science. *The Reference Librarian*, 60(2), 109-116
- Verborgh, R., & De Wilde, M. (2013). *Using OpenRefine*. Packt Publishing Ltd.
- White, P. B. (2019). Using data mining for citation analysis. *College & Research Libraries*, 80(1), 76. <https://crl.acrl.org/index.php/crl/article/viewFile/16892/18538>

### Additional Reading List

- Blum, A., Hopcroft, J., & Kannan, R. (2018). *Foundations of Data Science* (2018). Draft available at <https://www.cs.cornell.edu/jeh/book.Pdf>.
- Bryl, V., Bizer, C., Isele, R., Verlic, M., Hong, S. G., Jang, S., ... & Choi, K. S. (2014). Interlinking and knowledge fusion. In *Linked Open Data--Creating Knowledge Out of Interlinked Data* (pp. 70-89). Springer, Cham.
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- Foreman, J. W. (2014). *Data smart: Using data science to transform information into insight*.
- Kirk, A. (2012). *Data Visualization: a successful design process*. Packt publishing LTD.
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- Magle, C. T. *Data cleaning using OpenRefine* (Doctoral dissertation, Colorado State University. Libraries). <https://hdl.handle.net/10217/194888>
- Miller, J. D. (2017). *Big data visualization*. Packt Publishing Ltd
- Mitchell, R. (2018). *Web scraping with Python: Collecting more data from the modern web*. " O'Reilly Media, Inc."
- Saltz, J. S., & Stanton, J. M. (2018). *An introduction to data science*. Los Angeles: SAGE.
- Srinivasa, R. A. S. R., & Rao, C. R. (2021). *Data science: Theory and applications*. Amsterdam: North Holland.
- Stuart, D. (2020). *Practical Data Science for Information Professionals*. Facet Publishing.
- Van Rossum, G., & Drake Jr, F. L. (1995). *Python tutorial* (Vol. 620). Amsterdam: Centrum voor Wiskunde en Informatica.

## FOURTH SEMESTER

**Course Code: LIS-DSE-405 B**

**Course Title: VIRTUAL LEARNING AND LIBRARIES**

**Course Category: DSE**

**Course Type: Theory**

Credit Structure				Marks Distribution						Objective	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks		
					CE	PRJ	PRC	Viva			
2	2	0	4	40	Nil	10	Nil	Nil	50	To impart concept of virtual learning and roles of libraries therein with a focus on managing open source VLE called Moodle.	<ul style="list-style-type: none"> <li>To know concepts, features, scopes and advantages of virtual learning environment (VLE);</li> <li>To understand role of libraries in VLE; and</li> <li>To explore the use of open source LCMS called Moodle with a focus on integration of library resources.</li> </ul>

### Module I: Virtual Learning: Concepts and Tools

#### Unit 1: Introduction to Virtual Learning Environment (VLE)

- VLE – what, why and how;
- VLE and Library – scope, advantages and limitations;
- VLE vs. Traditional Learning Environment;
- VLE in India: issues and challenges;
- VLE projects in India – MooCs, Swayam, Swayamprabha, e-PG pathshala, Vidyamitra, Spoken tutorial, NPTEL and so on.

#### Unit 2: VLE – Models and Resources

- VLE – social constructivist theory; VLE – Four Quadrant Model;
- Digital Learning Objects – content, license, metadata
- VLE and Open Educational Resources (OER);
- OER and Courses – pathfinder services, directories;
- OER services – OERCommons, TeachingCommons, OER consortia.

### Module II: Virtual Learning: Application of LCMS

#### Unit 3: Learning Content Management System (LCMS)

- LCMS – scope, features and technologies;
- LCMS vs LMS;
- LCMS – Open source and Open standards;
- Learning analytics, LTI – Learning Tools Interoperability;
- LCMS – Comparison of available tools.

#### Unit 4: Application of Open Source LCMS in VLE

- Moodle – features and technical framework;
- Moodle – installation and configuration;
- Four quadrant based VLE in Moodle;
- Integration of library services in Moodle;
- Cloud hosting of Moodle.

## FOURTH SEMESTER

**Course Code: LIS-DSE-405 B**

**Course Title: VIRTUAL LEARNING AND LIBRARIES**

**Course Category: DSE**

**Course Type: Theory**

### Essential Reading List

- Amhag, L. (Ed.). (2020). *Virtual and mobile learning activities in higher education*. IGI Global.
- Barker, P., & Campbell, L. M. (2010). Metadata for learning materials: An overview of existing standards and current developments. *Technology, Instruction, Cognition and Learning*, 7(3-4), 225-243.  
[http://www.icbl.hw.ac.uk/publicationFiles/2010/TICLMetadata/TICLpaper.MetadataForEducation\\_postref.pdf](http://www.icbl.hw.ac.uk/publicationFiles/2010/TICLMetadata/TICLpaper.MetadataForEducation_postref.pdf)
- Büchner, A. (2016). *Moodle 3 administration*. Packt Publishing Ltd.
- Chatti, M. A., Dyckhoff, A. L., Schroeder, U., & Thüs, H. (2012). A reference model for learning analytics. *International Journal of Technology Enhanced Learning*, 4(5-6), 318-331.
- Clow, D. (2013). An overview of learning analytics. *Teaching in Higher Education*, 18(6), 683-695.
- D'Antoni, S., Savage, C., & Unesco. (2009). *Open educational resources: Conversations in cyberspace*. Paris: United Nations Educational, Scientific and Cultural Organization.
- Dvorak, R. (2011). *Moodle for dummies*. Hoboken, N.J: Wiley.
- Elder, A. (2019). *The OER starter kit*. Ames: Iowa State University Digital Press.
- Ferguson, R. (2012). Learning analytics: drivers, developments and challenges. *International Journal of Technology Enhanced Learning*, 4(5-6), 304-317.
- Flavin, M. (2020). *Re-imagining Technology Enhanced Learning: Critical Perspectives on Disruptive Innovation*. Springer Nature.
- Hodgkinson-Williams, C., & Arinto, P. (2017). *Adoption and impact of OER in the Global South* (p. 610). African Minds.
- Jacka, I. I. S. A. (2020). *Using virtual worlds in educational settings: making learning real*. S.l.: Routledge.
- Kanjilal, U., & Kaul, P. (2016). The journey of SWAYAM: India MOOCs initiative. <http://oasis.col.org/bitstream/handle/11599/2592/PDF?sequence=1&isAllowed=y>
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- Paul, Prantosh and Bhumali, A. and Kalishankar, Tiwary and Aithal, P. S. and Rajesh, R., SWAYAM: The Platform for Modern and Enhanced Online and Flexible Education - A Knowledge Survey (December 30, 2018). International Journal

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[https://library.oapen.org/bitstream/handle/20.500.12657/39552/2020\\_Book\\_RadicalSolutionsAndOpenScience.pdf?sequence=1#page=172](https://library.oapen.org/bitstream/handle/20.500.12657/39552/2020_Book_RadicalSolutionsAndOpenScience.pdf?sequence=1#page=172)
- Severance, C., Hanss, T., & Hardin, J. (2010). Ims learning tools interoperability: Enabling a mash-up approach to teaching and learning tools. *Technology, Instruction, Cognition and Learning*, 7(3-4), 245-262.
- Wesolek, A., Lashley, J., & Langley, A. (2018). *OER: A field guide for academic librarians*. Pacific University Press.
- Zhang, K., Bonk, C. J., Reeves, T. C., & Reynolds, T. H. (Eds.). (2019). *MOOCs and open education in the Global South: Challenges, successes, and opportunities*. Routledge

### Additional Reading List

- Abumandour, E.-S. T. (2021). Public libraries' role in supporting e-learning and spreading lifelong education: A case study. *Journal of Research in Innovative Teaching & Learning*, 14(2), 178–217. <https://doi.org/10.1108/JRIT-06-2019-0063>
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- Koohang, A., & Harman, K. (2007). *Learning objects: Theory, praxis, issues, and trends*. Santa Rosa, Calif: Informing Science Press.
- Magnuson, L. (2019). Embracing Embeddedness with Learning Tools Interoperability (LTI). *New Top Technologies Every Librarian Needs to Know: A LITA Guide*, 10.
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<https://doi.org/10.1108/02640470610671231>
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- Yang, H. H., & Yuen, S. C. Y. (Eds.). (2009). *Handbook of Research on Practices and Outcomes in E-Learning: Issues and Trends: Issues and Trends*. IGI Global.

## FOURTH SEMESTER

**Course Code: LIS-COR-406**

**Course Title: GUIDED RESEARCH PROJECT**

**Course Category: Core**

**Course Type: Dissertation**

Credit Structure				Marks Distribution			Objective
Lecture	Tutorial	Practice	Total Credit	Research Report	Seminar presentation	Total Marks	
2	6	0	8	75 (Text)	25	100	<ul style="list-style-type: none"> <li>To prepare students with their first organized research work on an area of professional interest by applying the skills acquired during the process.</li> <li>To complete a research project on a selected topic pertaining to the applications of the professional techniques ;</li> <li>To understand underlying principles by following research methods and standards; and</li> <li>To develop research skills and independent thinking.</li> </ul>

The following is an illustrative list (not comprehensive) of the broad areas (*including but not limited to*) that may be considered by the students:

Information seeking behaviour study	Webometric study of entities like websites, institutional repositories etc	Indigenous knowledge management systems
User survey by applying sense making approaches	Designing ERMS (electronic resource management system) for a given library	Community information service design
Designing of a depth schedule on a specific subdivision of a given subjects	StackMap for library OPAC	GLAM integration : Gallerias, Libraries, Archives, Museums
Design of domain ontology on a tiny area of knowledge	REST/API based interaction of library software	Digital library on a given area
Conversion of existing classification schemes into upper ontology	Use of text retrieval engines in managing Indian language documents	Multi-lingual digital library
Informetrics study for determining journal productivity	Performance study of text retrieval engines for multilingual resources	Portable digital library
Informetrics study for determining researcher productivity	Designing library discovery system through integration of retrieval silos	Learning object repositories
Altmetric study related to journals and websites		Designing virtual learning environment
		Use of LCMS for four quadrant learning system
		Bibliographic relationships modeling

## FOURTH SEMESTER

**Course Code: LIS-COR-406**

**Course Title: GUIDED RESEARCH PROJECT**

**Course Category: Core**

**Course Type: Dissertation**

### Reading List

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|--|--|
| <p>American Psychological Association. (2012). <i>APA style guide to electronic references</i>. American Psychological Association, Washington DC.</p> <p>Bui, Y. N. (2013). <i>How to write a master's thesis</i>. Sage Publications.</p> <p>Dissertation Workshop. (2011). OER Commons. Retrieved October 17, 2021, from <a href="https://www.oercommons.org/courses/dissertation-workshop?__hub_id=19">https://www.oercommons.org/courses/dissertation-workshop?__hub_id=19</a></p> <p>Gilbert, G. N. (2006). <i>From postgraduate to social scientist: A guide to key skills</i>. London: SAGE Publications.</p> <p>Gruba, P., &amp; Zobel, J. (2017). <i>How to write your first thesis</i>. (Springer eBooks.)</p> | <p>Rudestam, K. E., &amp; Newton, R. R. (1992). <i>Surviving your dissertation: A comprehensive guide to content and process</i>. Newbury Park, Calif: SAGE.</p> <p>Rugg, G., &amp; Petre, M. (2007). <i>A gentle guide to research methods</i>. Maidenhead: Open University Press. \</p> <p>Teitelbaum, H. (2003). <i>How to write a thesis</i>. New York: Macmillan USA.</p> <p>University Thesis and Dissertation Templates // Purdue Writing Lab. Purdue Writing Lab. Retrieved October 17, 2021, from <a href="https://owl.purdue.edu/owl/graduate_writing/thesis_and_dissertation/University_Thesis_and_Dissertation_Templates.html">https://owl.purdue.edu/owl/graduate_writing/thesis_and_dissertation/University_Thesis_and_Dissertation_Templates.html</a></p> |
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