



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

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

**SYLLABUS**  
**(Choice Based Credit System)**

*With effect from 2017-2019 academic session*

**Approved in the PGBOS meeting held on 18.04.2017**

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

**Integrated Two Academic Sessions - Four Semester Course – Choice based Credit System**  
(With effect from 2017-2019 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:** Twenty Seven (27)
- Academic Calendar:** As per the University Academic calendar
- Course Structure:**
- M.Lib.I.Sc curriculum consists of **64 credits** distributed in **24 courses** in **2 academic sessions** and **4 semesters**. Each student requires to complete **60 credits** of this curriculum and **4 credits** from open courses offered by other departments under the University of Kalyani. (The curriculum contains one open course 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 **24** contact hours of teaching for **practical** in a semester.
  - **28 credits** are meant for **Core Courses** (coded as LIS-CC-XXX), **28 credits** for **Hard Core** courses (coded as LIS-HC-XXX) and 4 credits for Soft Core courses (coded as LIS-SC-XXX). These are required to be completed/earned by each student.
  - **4 credits** are assigned to **Open Course** (coded as LIS-OC-206) for other department under this university.
  - M.Lib. I. Sc course has a total **1600 marks** (1500 from the Course + 100 for Open Course).
  - Internal Assessment marks of a course is either **Continuous Evaluation (CE)** and/or **Project (PRJ)** and/or **Practical (PRC)** or **combination**.
  - If internal assessment of a practice paper is based on **CE**, then it will be based on **Practical tests**.
  - Intake capacity for the Open Course (LIS-OC-206) will be the intake capacity of the department.

### 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-HC-101	Library, Information and Society	Hard Core	3	1	0	4	80	20	100
	LIS-CC-102	Document Classification (Theory)	Core	1	1	0	2	40	10	50
	LIS-CC-103	Document Cataloguing (Theory)	Core	1	1	0	2	40	10	50
	LIS-HC-104	Library Information Technology (Theory)	Hard Core	1	1	0	2	40	10	50
	LIS-HC-105	Library Information Technology (Practice)	Hard Core	0	0	2	2	40	10	50
	LIS-CC-106	Information Sources, Systems and Services	Core	2	1	1	4	80	20	100
SEM II	LIS-CC-201	Library System Management	Core	3	1	0	4	80	20	100
	LIS-CC-202	Document Classification (Practice)	Core	0	0	2	2	40	10	50
	LIS-CC-203	Document Cataloguing (Practice)	Core	0	0	2	2	40	10	50
	LIS-CC-204	Resource Description and Content Designation (Theory)	Core	1	1	0	2	40	10	50
	LIS-CC-205	Resource Description and Content Designation (Practice)	Core	0	0	2	2	40	10	50
	LIS-OC-206 (Open Course)	Information Resource Management	Open Course	3	1	0	4	80	20	100
SEM III	LIS-CC-301	Information Representation and Retrieval	Core	3	1	0	4	80	20	100
	LIS-CC-302	Knowledge Organization (Theory)	Core	1	1	0	2	40	10	50
	LIS-CC-303	Knowledge Organization (Practice)	Core	0	0	2	2	40	10	50
	LIS-HC-304	Automated Library System (Theory)	Hard Core	1	1	0	2	40	10	50
	LIS-HC-305	Automated Library System (Practice)	Hard Core	0	0	2	2	40	10	50
	LIS-HC-306	Digital Resource Management	Hard Core	3	0	1	4	80	20	100
SEM IV	LIS-HC-401	Research Methodology	Hard Core	3	1	0	4	80	20	100
	LIS-HC-402	Digital Library System (Theory)	Hard Core	1	1	0	2	40	10	50
	LIS-HC-403	Digital Library System (Practice)	Hard Core	0	0	2	2	40	10	50
	LIS-SC-404	Elective (any one from the list)	Soft Core	1	1	0	2	40	10	50
	LIS-SC-405	Elective (any one from the list)	Soft Core	1	1	0	2	40	10	50
	LIS-HC-406	Guided Research Project	Hard Core	0	4	0	4	80 (Text)	20 (Viva)	100
<b>Grand total</b>							<b>64</b>	<b>1280</b>	<b>320</b>	<b>1600</b>

## Course Contents Structure

	Course Code (Course Type)	Course Title	Course Summary	Marks Distribution			
				Semester Exam	Int Assessment		Total Marks
				CE	PRC / PRJ		
S E M E S T E R I	LIS-HC-101 (Hard Core)	Library, Information and Society	Unit 1: Library as a Social Institution Unit 2: Library Policies, Movements and Legislations Unit 3: Profession, Public relations and Extension activities Unit 4: Information and Society Unit 5: Knowledge Economy and Knowledge Management	80	10	10 (PRJ)	100
	LIS-CC-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 (Colon Classification 6 <sup>th</sup> edition)	40	NIL	10 (PRC)	50
	LIS-CC-103 (Core)	Document Cataloguing (Theory)	Unit 1: Basic Concepts and Genesis Unit 2: Principles and Rules Unit 3: Cataloguing Codes	40	10	NIL	50
	LIS-HC-104 (Hard 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)	40	10	NIL	50
	LIS-HC-105 (Hard 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	40	NIL	10 (PRC)	50
	LIS-CC-106 (Core)	Information Sources, Systems and Services	Unit 1: Information Sources Unit 2: Reference and Information Services Unit 3: Information Products Unit 4: Electronic Information Products and Services Unit 5: Components and Users of Information Systems	80	10	10 (PRJ)	100
S E M E S T E R I	LIS-CC-201 (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 Unit 5: Monitoring, Quality Control and Change Management	80	10	10 (PRJ in Library system study)	100
	LIS-CC-202 (Core)	Document Classification (Practice)	Unit 1: Introduction Unit 2: Dewey Decimal Classification - stage 1 Unit 3: Dewey Decimal Classification - stage 2	40	NIL	10 (PRC)	50
	LIS-CC-203 (Core)	Document Cataloguing (Practice)	Unit 1: Introduction Unit 2: AACR II – Rules for description Unit 3: AACR II – Rendering of access points	40	NIL	10 (PRC)	50

<b>E R  II</b>	LIC-CC-204 (Core)	Resource Description and Content Designation (Theory)	Unit 1: Cataloguing – Policies, Initiatives and Data models Unit 2: Authority Data and Subject Cataloguing Unit 3: Content Designation - Bibliographic and Authority Data Formats	40	10	NIL	50
	LIC-CC-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 – Basic level	40	NIL	10 (PRC)	50
	LIS-OC-206 (Open Course)	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 Unit 5: Open Educational Resources	80	10	10 (PRJ)	100
<b>S E M E S T E R  III</b>	LIS-CC-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	80	10	10 (PRJ)	100
	LIS-CC-302 (Core)	Knowledge Organization (Theory)	Unit 1: Special Classification Schemes Unit 2: Classification and Knowledge Representation Unit 3: Trends and Future of Library Classification	40	10	NIL	50
	LIS-CC-303 (Core)	Knowledge Organization (Practice)	Unit 1: Colon Classification – Advanced level Unit 2: Universal Decimal Classification Unit 3: SKOS and Ontology	40	NIL	10 (PRC)	50
	LIS-HC-304 (Hard Core)	Automated Library System (Theory)	Unit 1: Introduction to Library Automation Unit 2: Work-flow and Components of Automated Library System Unit 3: Standards and Software related to Library Automation	40	10	NIL	50
	LIS-HC-305 (Hard 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	40	NIL	10 (PRC)	50
	LIS-HC-306 (Hard Core)	Digital Resource Management	Unit 1: Organization of Digital Information Resources Unit 2: Content Management System Unit 3: Content Designation through MARC 21 – Advanced level Unit 4: Metadata encoding– Generic and Domain-specific Unit 5: Web 2.0 and Library 2.0 Unit 6: Practical Components	80	NIL	20 (PRC)	100
<b>S E</b>	LIS-HC-401 (Hard Core)	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 Unit 5: Informetrics	80	10	10 (PRJ in library survey/user survey)	100

M E S T E R IV	LIS-HC-402 (Hard Core)	Digital Library System (Theory)	Unit 1: Organization of Digital Objects - Issues and Challenges Unit 2: Architecture, Information Retrieval and User interfaces Unit 3: Design and Development of Digital Library Systems	40	10	NIL	50	
	LIS-HC-403 (Hard Core)	Digital Library System (Practice)	Unit 1: Digital Library Software – Centralized Processing and Distributed Access Unit 2: Digital Library Software – Distributed Processing and Distributed Access Unit 3: Harvesting and Search Federation	40	NIL	10 (PRC)	50	
	LIS-SC-404 (Soft Core)	Elective ( <b>any one</b> )		LIS-SC-404 A: Community Information System  Unit 1: Fundamentals of Community Information Services Unit 2: Community Information Resources: Organization and Access Unit 3: Digital Community Information Services	40	NIL	10 (PRJ)	50
		LIS-SC-404 A: Community Information System	LIS-SC-404 B: Open Knowledge System  Unit 1: Open Knowledge System - Mandate, Policies and Licensing Unit 2: Open Access Sources and Services Unit 3: Open Access – Interoperability and Integration					
	LIS-SC-405 (Soft Core)	Elective ( <b>any one</b> )		LIS-SC-405 A: Library Service Platform  Unit 1: Library Ecosystem Unit 2: Library Discovery Unit 3: Library Workflow Integration  LIS-SC-405 B: Semantic Web Technologies for Library  Unit 1: Semantic Web Components Unit 2: Semantic Web Application Tools Unit 3: LODLAM – Linked Open Data for Libraries, Archive and Museums	40	NIL	10 (PRJ)	50
LIS-SC-405 A: Library Service Platform	LIS-SC-405 B: Semantic Web Technologies for Library							
LIS-HC-406 (Hard Core)	Guided Research Project	On a selected topic pertaining to the applications of most 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>	80 (Text)	NIL	20 (Viva/Presentation)	100		

### FIRST SEMESTER

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	80	10	10	Nil	Nil	100	<ul style="list-style-type: none"> <li>To provide theoretical foundation of the course;</li> <li>To explore the normative principles, legislation and IPR issues related to the discipline; and</li> <li>To study features of information society and knowledge economics.</li> </ul>

**Unit 1: Library as a Social Institution**

- 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, Intellectual Property Rights, Right to Information, 2005 etc.

**Unit 3: Profession, Public relations and Extension activities**

- 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;

- 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, Promoting agencies of library and information services – National and International levels.

**Unit 4: 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 5: Knowledge Economy and Knowledge Management**

- Knowledge society and Knowledge economics. Knowledge Management: Concepts and tools;
- 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.

## FIRST SEMESTER

**Course Code: LIS-HC-101**

**Course Title: LIBRARY, INFORMATION AND SOCIETY**

**Course Type: Hard Core**

### Reading List

- Bell, D. (1980). *The social framework of the information society. In Derrouzos M C & Moses, I (eds), The computer age: a twenty year view.* Cambridge: MIT Press.
- Benjamin, J.B. (1986). *Communication: concept and contexts.* New York: Harper & Row.
- Cornish, Graham P. (2001). *Interpreting the law for libraries, archives and information services* (Rev, 3rd.). London: Facet Publishing.
- Vashisht, C. P. (1994). *Library movement and library development in India.* Delhi: ILA.
- 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.
- Drucker, P. (1998). From capitalism to knowledge society. *The knowledge economy*, 15-34.
- Feather, J. (2000). *The information society.* London: Library Association., IFLA. (1977). *Standards for library service* (2nd ed.). Munich: Verlag.
- India. (1959). *Advisory Committee for Libraries, Report.* Delhi: Manager of Publications.
- Khanna, J. K. (1987). *Library & society.* Kurukshetra: Research Publications.
- Koontz, C., Gubbin, B., & International Federation of Library Associations and Institutions. (2010). *IFLA public library service guidelines.* Berlin: De Gruyter Saur.
- Krishan Kumar (1986). *Library organization.* Delhi: Vikas.
- Kumar, P.S.G. (2001). *Indian encyclopedia of library & information science.* New Delhi: S. Chand.
- Kumar, P.S.G. (2002). *A student's manual of library & information science.* Delhi: BR Publishing House.
- Machlup, F. (1984). *The Economics of information and human capital.* Princeton: Princeton University Press.
- Martin, W. J. (1995). *The global information society.* Brookfield, VT: Gower.
- McGarry, K. J. (1993). *The changing concept of information: an introductory analysis.* (2nd. ed.). London: Facet Publishing.
- Masuda, Y. (1993). *The information society.*
- Mittal, R. L. (1984). *Library administration: theory & practice* (5th ed.). Delhi: Metropolitan.
- 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.
- Ranganathan, S. R. (1957). *Five laws of library science.* Delhi: UBS.
- Ranganathan, S. R., & Neelameghan, A. (1972). *Public library system.* Bangalore: Sarada Ranganathan Endowment.
- Rao Laxman, S., Vishwa Mohan, & Rao, S. S. (2001). *Changing dimensions of LIS education.* Hyderabad: IATLIS.
- Rout, R. K. (1991). *Library legislation in India.* New Delhi: Reliance.
- Sahai, S. (1973). *Library and community.* New Delhi: Today & Tomorrow.
- Sandy, N. (1999). *Copyright in further and higher education libraries* (4th ed.). London: Facet Publishing.
- Sharma, Pandey S.K. (1987). *Library & society.* New Delhi: Ess Ess Publications.
- Shera, J. H. (1970). *The foundations of education of librarianship.* Bombay: Asia.
- Shera, J. H. (1970). *Sociological foundations of librarianship.* New York: Asia Pub. House.
- SinghaRoy, D. K. (2014). *Knowledge society: New identities in emerging India.* New York: Cambridge University Press.
- Venkatappaiah, V. (1990). *Indian library legislation* (Vol. 2). New Delhi: Daya.
- Withers, F. N. (1974). *Standards for library service: an international survey.* Paris: Unesco.
- Taragowski, A.S. (1998). *Global information infrastructure: the birth, vision and architecture.* Harrisburg: Idea Group.
- 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.
- Vickery B. C., & Vickery A. (1987). *Information science in theory and practice.* London: Butterworth.



**FIRST SEMESTER**

**Course Code: LIS-CC-102**

**Course Type: Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>• To provide historical and theoretical foundation of library classification;</li> <li>• To explore the features of traditional library classification schemes; and</li> <li>• To know the methods related to designing depth schedule and to study the use of technologies in library classification.</li> </ul>

**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.

**Unit 3: Applications of Classification Theories (Colon Classification 6<sup>th</sup> edition)**

- Colon Classification – History, Genesis and Structure;
- 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-CC-102**

**Course Type: Core**

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

### Reading List

- Broughton, Vanda. (2004). *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.
- F.I.D. (1993). *Universal Decimal Classification*. IME.
- Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
- Foskett, D. J. (1974). *Classification and indexing in social sciences*. London: Aslib.
- Foskett, A. C. (1996). *The subject approach to information*. (5th ed.). London: Clive Bingley.
- Halgamuge, S. K., & Wang, L. (2005). *Classification and clustering for knowledge discovery*. Berlin: Springer.
- Hunter, E. J. (1988). *Classification made simple*. Aldershot: Gower.,
- Husain, Sabahat. (2004). *Library Classification: Facets and Analysis*. Delhi: B. R. Publishing.
- Jennex, Murray E. (2008). *Knowledge management: concepts, methodologies, tools and applications*. New York: Information Science Reference.
- King, B., & Reinold, K. (2008). *Finding the Concept, Not Just the Word: A Librarian's Guide to Ontologies and Semantics*. Burlington: Elsevier Science.
- Krishan Kumar. (1980). *Theory of classification*. New Delhi: Vikas.
- Kumbhar, R. (2011). *Library classification trends in the 21St century*. Burlington: Elsevier Science.
- Lim, E. H. Y., Liu, J. N. K., & Lee, R. S. T. (2011). *Knowledge seeker: Ontology modelling for information search and management : a compendium*. Berlin: Springer.
- Maltby, A. (1975). *Sayers' manual of classification for librarians*. (5th ed.). London: Andre Deutsch.
- Mukhopadhyay, A. (1976). *Guide to colon classification practical*. New Delhi: Metropolitan Book.
- Navalani, K., & Gidwani, N. N. (1981). *A practical guide to colon classification*. New Delhi: Oxford & IBH Pub. Co.
- Needham, C. D. (1971). *Organizing knowledge in libraries*. (2nd ed.). London: Andre Deutsch.,
- Pathak, L. P. (2000). *Sociological terminology and classification schemes*. New Delhi: Mittal Publications.
- Raju, A. A. N. (1984). *Decimal, Universal Decimal and Colon Classification: a study in comparison*. Delhi: Ajanta.
- Ranganathan, S. R. (2006). *Philosophy of library classification*. Bangalore: Ess Ess.
- Ranganathan, S.R. (1966). *Elements of library classification* (2nd ed.). Bombay: UBS.
- Ranganathan, S.R. (1967). *Prolegomena to library classification* (3rd ed.). Bombay: UBS.
- Ranganathan, S. R. (1987). *Colon classification*. Banglore: SRELS.
- Satija, M. P. (2011). *A guide to the theory and practice of colon classification*. New Delhi: Ess Ess Publications.
- 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.
- Vickery, B. C. (1968). *Faceted classification: a guide to construction and use of special schemes*. London: Aslib.
- Wynar, B. S. (1985). *Introduction to cataloguing and classification*. (7th ed.). New York: Libraries Unlimited.

**FIRST SEMESTER**

**Course Code: LIS-CC-103**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>• To provide historical and theoretical foundation of library cataloguing;</li> <li>• To help in understanding normative principles and cataloguing codes; and</li> <li>• To know the authority data management and to study the initiatives and trends of library cataloguing.</li> </ul>

**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, Svenonious 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 alphabetic-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.

**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).

## FIRST SEMESTER

Course Code: LIS-CC-103

Course Title: DOCUMENT CATALOGUING (THEORY)

Course Type: Core

### Reading List

- ALA (1968). *ALA Rules for filing Catalog Cards*. Chicago: ALA.
- Bean, C.A., & Green, R. (2001). *Relationships in organization of knowledge*. London: Kluwer.
- Bowman, J. H. (2003). *Essential cataloguing*. London: Facet Publishing.
- Chan, L. M. (1994). *Cataloging and classification: An introduction*. New York: McGraw-Hill.
- Chapman, Liz. (1984). *How to catalogue: a practical handbook*. London: Clive Bingley.
- Delsey, T. (1999). *The logical structure of AACR – Part I & Part II*. Retrieved from <http://www.nlc-bnc.ca/jsc/aacrdel.htm>
- Girja Kumar & Krishan Kumar (1988). *Theory of cataloguing* (5th ed.). New Delhi: Vikas.
- Heaney, M. (1995). Object-oriented cataloguing. *Information Technology and Libraries*, 14(3), 135–153.
- Horner, J. (1975). *Cataloguing*. London: AAL.
- Hunter, E. J. (1986). *Computerised cataloguing*. London: Clive Bingley.
- Hunter, E. J., & Blackwell, KGB. (1983). *Cataloguing*. London: Clive Bingley.
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- Zeng, M. L., & Žumer, M. (January 01, 2010). Introducing FRSAD and mapping it with SKOS and other models. *International cataloguing and bibliographic*

**FIRST SEMESTER**

**Course Code: LIS-HC-104**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide basic ICT concepts;</li> <li>To explore the possibilities of ICT in designing library services; and</li> <li>To know the use of database and networking technologies in developing library systems and services.</li> </ul>

**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, Appalchian 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.

**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.

## FIRST SEMESTER

**Course Code: LIS-HC-104**

**Course Type: Hard Core**

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

### 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,.
- Botto, Francis. (1993). *Multimedia, CD-ROM and compact disc: a guide for users and developers*. New Delhi: Galgotia.
- Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.
- Bradley, P. (1999). *Internet power searching: the advanced manual*. New York: Neal-Schuman Publishers.
- Bradley, P., & Aslib. (2000). *World Wide Web: how to design and construct web pages*. London: ASLIB.
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- 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.
- 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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- Chartered Institute of Library and Information Professionals (Great Britain). (1998). *Multimedia information & technology: MmIT*. London, England: Multimedia Groups of Aslib.
- 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.
- Satyanarayana, N. R. (1995). *A manual of computerisation in libraries*. New Delhi: Wishwa Prakashan.
- Rajaraman, V. (1995). *Fundamentals of computers*. New Delhi: PHI.
- Rajasekharan, K., & Nafala, K. M. (2007). *Creation of digital document archives with Winisis*. Kerala Institute of Local Administration.
- Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.
- Sinha, P. K. (1992). *Computer fundamentals: concept, systems and applications* (2nd ed.). Delhi: BPB Publications.
- Tanenbaum, A. S. (1996). *Computer networks*. Upper Saddle River, N.J: Prentice Hall PTR.
- Tanenbaum, A. S. (1984). *Structured computer organization*. Englewood Cliffs, N.J: Prentice-Hall.
- 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.
- 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.

**FIRST SEMESTER**

**Course Code: LIS-HC-105**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>• To provide basic ICT concepts;</li> <li>• To explore the possibilities of ICT in designing library services; and</li> <li>• To know the use of database and networking technologies in developing library systems and services.</li> </ul>

**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;
- LAMP architecture;
- Office management software.

**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.

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

- MySQL – Basic tasks;
- Use of MySQL GUI, Backup and Restoration;
- WINISIS – Basic level;
- WINISIS – Advanced level;
- Database search and retrieval.

## FIRST SEMESTER

Course Code: LIS-HC-105

Course Title: LIBRARY INFORMATION TECHNOLOGY (PRACTICE)

Course Type: Hard Core

### 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,.
- Botto, Francis. (1993). *Multimedia, CD-ROM and compact disc: a guide for users and developers*. New Delhi: Galgotia.
- Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.
- Bradley, P. (1999). *Internet power searching: the advanced manual*. New York: Neal-Schuman Publishers.
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- Gerner, J. (2006). *Professional LAMP: Linux, Apache, MySQL, and PHP Web development*. Indianapolis, IN: Wiley Pub.
- 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.
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- Kelley, A., & Pohl, I. (1997). *A book on c: Programing in c*. Boston, MA: Addison-Wesley
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- Mukhopadhyay, P. (2013). *Course of action: Library information technology*. Kolkata: Prova Prakashani.
- Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.
- Miguel, P. J. (2013). *Instant Debian: Build a Web Server*. Packt Publishing.
- Satyanarayana, N. R. (1995). *A manual of computerisation in libraries*. New Delhi: Wishwa Prakashan.
- Raggi, E. (2011). *Beginning Ubuntu Linux*. New York, NY: Apress.
- Rajasekharan, K., & Nafala, K. M. (2007). *Creation of digital document archives with Winisis*. Kerala Institute of Local Administration.
- Rosebrock, E., & Filson, E. (2006). *Setting up LAMP: Getting Linux, Apache, MySQL, and PHP Working Together*. Hoboken: John Wiley & Sons.
- Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.
- Schwartz, R. L., Foy, B. D., & Phoenix, T. (2017). *Learning Perl: Making easy things easy and hard things possible*. Sebastopol, CA: O'Reilly.



## FIRST SEMESTER

**Course Code: LIS-CC-106**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	1	1	4	80	10	10	Nil	Nil	100	<ul style="list-style-type: none"> <li>● To help in understanding the types and scopes of information resources</li> <li>● To know features of different forms and sources of information; and</li> <li>● To know the process of retrieving databases and on-line /web information resources in network environment.</li> </ul>

### Unit 1: Information Sources

- 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: Reference and Information Services

- 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;
- Alerting Services – Newspaper clippings and News brief services, CAS and SDI services, Abstracting and Indexing Services;
- Translation Services: Tools and Pools, Document Delivery Services, Reference services – advancements and trends.

### Unit 3: Information Products

- Information products: Meaning and objectives, Techniques of production and Design issues;
- Abstract and Abstracting: Types and Guidelines for preparation of Abstract;

- In-house Communications: Newsletters, House bulletins and other In-house communications;
- Trade and Product bulletins, Reports, Reviews and related products;
- Information Analysis, Packaging and Repackaging of Information. Packaging media and formats; Methodology for preparation of IA+C Products.

### Unit 4: 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 5: 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
- Library Networks and Consortia

- Users' Study : Types and Techniques; Information need analysis.

## FIRST SEMESTER

**Course Code: LIS-CC-106**

**Course Type: Core**

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

### Reading List

- Bopp, R. E., & Smith, L. C. (1995). *Reference and information services: An introduction*. Englewood, Colo: Libraries Unlimited.
- Cassell, K. A., & Hiremath, U. (2013). *Reference and information services: An introduction*.
- Cheney, F. N. (1975). *Fundamental reference sources*. Chicago: American Library Association.
- 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.
- Foskett, D. J. (1994). *Information service in libraries*. New Delhi: Anmol Publications.
- 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.
- Guha, B. (1983). *Documentation and information: services, techniques and systems*. Calcutta: World Pr. Private Ltd.
- 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.
- Krishan Kumar (1996). *Reference service*. New Delhi: Vikas Pub. House.
- Lankes, R. D., & Nast, P. (2008). *Virtual reference service: from competencies to assessment*. New York: Neal-Schuman Publishers.
- Lannon, J. M. (1985). *Technical writing*. Boston: Little, Brown.
- Li, X., & Crane, N. (1993). *Electronic style: a guide to citing electronic information*. Westport: Meckler.
- 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.
- 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.
- Pugh, L. (2007). *Change management in information services*. Aldershot, Hampshire, England: Ashgate.
- Primary Research Group. (2003). *Creating the virtual reference service*. New York, N.Y: Primary Research Group.
- 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
- Woodsworth, A., & Williams, J. F. (1994). *Managing the economics of owning*.

leasing, and contracting out information services. Aldershot, England: Gower.

## SECOND SEMESTER

**Course Code: LIS-CC-201**

**Course Type: Core**

**Course Title: LIBRARY SYSTEM MANAGEMENT**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ*	PRC	Viva		
3	1	0	4	80	10	10	Nil	Nil	100	<ul style="list-style-type: none"> <li>To provide basic concepts related to organization, administration and management of libraries and information centres;;</li> <li>To help in understanding library housekeeping , maintenance, planning and finance;</li> <li>To know the management processes related with human resource and quality cycle.</li> </ul>

### 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.

### 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

- Objectives of human resource management, Manpower Planning, Categories of staff, Staffing requirements;
- Method of manpower planning – Job analysis, Job description, Selection, Recruitment, Induction and deployment, Training and Development;
- Performance appraisal, Interpersonal relation, Group dynamics, Johari Window;
- Leadership – theories, styles, approaches and models;
- Motivation – theories of motivation, sources of motivation.

### Unit 5: Monitoring, Quality Control and Change Management

- Performance measurement, standards, and time-motion study;
- 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,
- Quality improvement cycle, Total Quality Management (TQM);
- Change management in library and information centres.

\*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-CC-201**

**Course Type: Core**

**Course Title: LIBRARY SYSTEM MANAGEMENT**

### Reading List

- Bakewell, K. G. B. (1997). *Managing user-centred libraries and information services*. (2nd ed.). London: Maxwell.
- Cook, C. (2002). *The maturation of assessment in academic libraries: The role of LibQUAL+ TM*. Bradford, England: Emerald Group Pub.
- Coote, H. & Batchelor, B. (1997). *How to market your library services effectively*. (2nd ed.). London: Aslib.
- Crawford, J. (1997). *Evaluation of library and information services effectively* (2nd ed.). London: Aslib.
- Edward, E. G. (1983). *Management techniques for librarians*. 2nd ed. New York: Academic Press, 1983 (2nd ed.). New York: Academic Press.
- Evans, G. E. (1983). *Management techniques for librarians*. (2nd ed.). New York: Academic Press.
- Georgi, C., Bellanti, R., & Holbrook, F. K. (2013). *Excellence in Library Management*. Hoboken: Taylor and Francis.
- Goutam, J. N. (1991). *Library and information management*. New Delhi:, 1991. New Delhi: Prentice-Hall India.
- Hayes, R. M. (2001). *Models for library management, decision-making, and planning*. San Diego, Calif: Academic Press.
- Heath, F. M., Kyrillidou, M., & Askew, C. A. (2004). *Libraries act on their LibQUAL+ findings: From data to action*. Binghamton, NY: Haworth Information Press.
- Hernon, P., & Altman, E. (1998). *Assessing service quality: Satisfying the expectations of library customers*. Chicago: American Library Association.
- Jain, A. K. (1999). *Marketing information products and services: a primer for library and information professionals*. New Delhi: Tata McGraw-Hill.
- Katz, W.A. (1980). *Collection development, the selection of materials for libraries*. New York: Holt, Rinehart & Winston.
- Krishan Kumar. (1985). *Library manual*. New Delhi: Vikas.
- 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.
- Martin, J. (2009). *Human resource management*. Los Angeles: SAGE.
- Mittal, R.L. (1984). *Library administration: theory and practice, Ed.5. Delhi: Metropolitan, 1984* (5th ed.). Delhi: Metropolitan.
- 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.
- Ranganathan, S.R. (1959). *Library administration* (2nd ed.). Bombay: Asia.
- Rowley J. (2001). *Information marketing*. Aldershot: Ashgate.
- Shera, J. S. (1978). *Library organization*. New Delhi: Vikas.
- Simmons-Welburn, J., & McNeil, B. (2004). *Human resource management in today's academic library: Meeting challenges and creating opportunities*. Westport, Conn: Libraries Unlimited.
- Spiller, David. (1974). *Book selection: an introduction to principles and practice*. (Rev, 2nd.). London: Clive Bingley.
- Stueart, R. D., & Eastlick, J. T. (1977). *Library management*. Littleton, Colo: Libraries Unlimited.
- Stueart, R. D., Moran, B. B., & Morner, C. J. (2013). *Library and information center management*.

## SECOND SEMESTER

**Course Code: LIS-CC-202**

**Course Type: Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	<b>40</b>	Nil	Nil	<b>10</b>	Nil	<b>50</b>	<ul style="list-style-type: none"> <li>To help in understanding the structure and rules of DDC;</li> <li>To know the precesses related to 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>

### Unit 1: Introduction

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

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

- Summary;
- Schedule;
- Tables;
- Building class number for simple subjects;

- Building class number for compound subjects.

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

- Relative index;
- Building class number for complex subjects;
- 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 and 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-CC-202**

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

**Course Type: Core**

### Reading List

- Aida, S. (January 01, 2008). Use of the Universal Decimal Classification: A world-wide survey. *Journal of Documentation*, 64, 2, 211-228.
- 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.
- 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.
- 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.
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- Kaushik, S. K. (2004). *DDC 22: A practical approach*. New Delhi: Ess Ess Publications.
- 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.
- Robinson, G. (1979). *UDC, a brief introduction*. The Hague: International Federation for 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.
- 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*.
- Sharma, P. S. K. (1998). *Practical approach to DDC: Dewey Decimal Classification made easy*. New Delhi: Ess Ess.
- Singh, K. P. (2013). *UDC: A manual for classification practical and information resources*. New Delhi: Today & Tomorrow's Printers and Publishers.
- Slavic, A., Civallero, E., & The International UDC seminar. (2011). *Classification & ontology: Formal approaches and access to knowledge : proceedings of the international UDC seminar 19-20 September 2011, The Hague, the Netherlands, organized by UDC Consortium, The Hague*. Würzburg: Ergon.

## SECOND SEMESTER

**Course Code: LIS-CC-203**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	<b>40</b>	Nil	Nil	<b>10</b>	Nil	<b>50</b>	<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>

### Unit 1: Introduction

- 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.

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

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

## SECOND SEMESTER

**Course Code: LIS-CC-203**

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

**Course Type: Core**

### Reading List

- Clack, D. H. (1990). *Authority control: Principles, applications, and instructions*. Chicago: American Library Association.
- Hasan, N. (1984). *Cataloguing practice: According to classified catalogue code (Ed 5)*. New Delhi: Gitanjali Pub. House.
- Hoffmann, C. F. B. (1980). *Getting ready for AACR 2: The cataloger's guide*. White Plains, N.Y: Knowledge Industry Publications.
- Hunter, E. J. (1979). *AACR 2: An introduction to the second edition of Anglo-American cataloguing rules*. London: C. Bingley.
- 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.
- Hunter, E. J. (1989). *Examples illustrating AACR 2 1988 revision*. London: Library Association.
- IFLA International Programme for UBC. (1984). *Guidelines for authority and reference entries*. London: IFLA International Programme for UBC.
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- 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
- 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.
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- Rogers, J. A. V., & Saye, J. D. (1987). *Nonprint cataloging for multimedia collections: A guide based on AACR 2*. Littleton, Colo: Libraries Unlimited.
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- 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.
- Singh, S. N., & Prasad, H. N. (1985). *Cataloguing manual AACR-II*. Delhi: B.R. Pub.
- 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.
- 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.
- Swanson, E., McClaskey, M. J., & Minnesota AACR 2 Trainers. (1980). *A Manual of AACR 2 examples*. Lake Crystal, Minn: Soldier Creek Press.
- Taylor, A. G. (1982). *AACR 2 headings: A five-year projection of their impact on*



*catalogs*. Littleton, Colo: Libraries Unlimited.

Varma, A. K. (1987). *Classified catalogue code: Entries and procedure*. Delhi: Vishwa-Kala Prakashan.

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-CC-204**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide historical and theoretical foundation of library cataloguing;</li> <li>To help in understanding normative principles and cataloguing codes; and</li> <li>To know the authority data management and to study the initiatives and trends of library cataloguing.</li> </ul>

### 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;

### Unit 3: Content Designation - Bibliographic and Authority Data 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), UNIMARC and MARC 21 bibliographic data format;
- MARC 21 authority data format;
- Application of FRAD and FRSAD model in authority data management.

## SECOND SEMESTER

**Course Code: LIS-CC-204**

**Course Type: Core**

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

### Reading List

- Aalberg, T., Barthelemy, J., Bekiari, C., Görz, G., Iorizzo, D., Jacob, M., ... Le, B. P. (2009). *FRBR, object-oriented definition and mapping to the FRBR(ER): (version 1.0). S.l.: CIDOC CRM.*
- 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.
- Delsey, T., & Library of Congress. (2002). *Functional analysis of the MARC 21 bibliographic and holdings format.* Washington, D.C.: Network Development and MARC Standards Office.
- Doerr, M., Riva, P., & Žumer, M. (January 01, 2013). FRBR entities: Identity and identification. *The Frbr Family of Conceptual Models*, 163-187.
- Hjelm, J. (2001). *Creating the semantic Web with RDF: Professional developer's guide.* New York: Wiley.
- Hopkinson, A., Hopkinson, A., Unesco., & UNISIST (Program). (1993). *Implementation notes for users of the common communication format for bibliographic information (CCF/B).* Paris: General Information Programme and UNISIST, United Nations Educational, Scientific and Cultural Organization.
- Jones, W., Ahronheim, J. R., & Crawford, J. (2002). *Cataloging the Web: Metadata, AACR, and MARC 21.* Lanham, Md: Scarecrow Press.
- 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., & 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.
- Liu, J. (2007). *Metadata and its applications in the digital library: Approaches and practices.* Westport, Conn: Libraries Unlimited.
- 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, England: Chandos Publishing.
- Simmons, P. (1984). *The common communication format: CCF. Paris.*
- Simmons, P. A., Hopkinson, A., Unesco., & UNISIST (Program). (1984). *CCF, the Common Communication Format. Paris: United Nations Educational, Scientific, and Cultural Organization.*
- Simmons, P., Hopkinson, A., Unesco., & UNISIST. (1992). *CCF/B: The common communication format for bibliographic information. Unesco.*

Smiraglia, R. P. (2005). *Metadata: A cataloger's primer*. Binghamton, NY: Haworth Information Press.

Welsh, A., & Batley, S. (2012). *Practical cataloguing: AACR, RDA and MARC 21*. Chicago: Neal-Schuman, an imprint of the American Library Association.

Willer, M., & Dunsire, G. (2013). *Bibliographic Information Organization In The Semantic Web*. Burlington: Elsevier Science.

Žumer, M., Zeng, M. L., & Salaba, A. (2010). *FRBR: A generalized approach to Dublin Core application profiles*. (Pittsburgh proceedings, 21-30.)

## SECOND SEMESTER

**Course Code: LIS-CC-205**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	<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 CCC 5<sup>th</sup> ed. ; and</li> <li>To know basic level of content designation based cataloguing.</li> </ul>
					CE	PRJ	PRC	Viva		
0	0	2	2	<b>40</b>	Nil	Nil	<b>10</b>	Nil	<b>50</b>	

**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.

**Unit 3: Content Designation – Basic level**

- Common Communication Format/Bibliographic (CCF/B);
- MARC 21 family of standards;
- MARC 21 bibliographic format;
- Authority lists and MARC 21 authority format;
- Use of WINISIS, ISIS-MARC, MARCEdit, and Cataloguing editors in application of content designation standards.

## SECOND SEMESTER

**Course Code: LIS-CC-205**

**Course Type: Core**

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

### Reading List

- Clack, D. H. (1990). *Authority control: Principles, applications, and instructions*. Chicago: American Library Association.
- Hasan, N. (1984). *Cataloguing practice: According to classified catalogue code (Ed 5)*. New Delhi: Gitanjali Pub. House.
- 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., & 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.
- Liu, J. (2007). *Metadata and its applications in the digital library: Approaches and practices*. Westport, Conn: Libraries Unlimited.
- 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, England: Chandos Publishing.
- 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
- 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.
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- Rogers, J. A. V., & Saye, J. D. (1987). *Nonprint cataloging for multimedia collections: A guide based on AACR 2*. Littleton, Colo: Libraries Unlimited.
- Salinger, F. A., & Zagon, E. (1985). *Notes for catalogers: A sourcebook for use with AACR 2*. White Plains, N.Y: Knowledge Industry Publications.
- Simmons, P. (1984). *The common communication format: CCF. Paris*.
- Simmons, P. A., Hopkinson, A., Unesco., & UNISIST (Program). (1984). *CCF, the Common Communication Format. Paris: United Nations Educational, Scientific, and Cultural Organization*.
- Simmons, P., Hopkinson, A., Unesco., & UNISIST. (1992). *CCF/B: The common communication format for bibliographic information. Unesco*.
- 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.

Taylor, A. G. (1982). *AACR 2 headings: A five-year projection of their impact on catalogs*. Littleton, Colo: Libraries Unlimited.

Varma, A. K. (1987). *Classified catalogue code: Entries and procedure*. Delhi: Vishwa-Kala Prakashan.

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-OC-206**

**Course Type: Open Course**

**Course Title: INFORMATION RESOURCE MANAGEMENT**

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	80	10	10	Nil	Nil	100	<ul style="list-style-type: none"> <li>To help in understanding the role of information resources in education and research;</li> <li>To develop digital information literacy skills; and</li> <li>To know basic level of search and organization of information resources.</li> </ul>

### 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.

### 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

- Open Access – what and why;
- Serials crisis and Open Access;
- Open Access – Gold path and Green path;
- Open Access ETDs;
- Open Access text books.

### Unit 5: Open Educational Resources

- OER – what and why;
- OER programmes and initiatives;
- OER repositories;
- OER and MooCs;
- OER and SWAYAM.

## SECOND SEMESTER

**Course Code: LIS-OC-206**

**Course Title: INFORMATION RESOURCE MANAGEMENT**

**Course Type: Open Course**

- American Library Association. (2006). Presidential Committee on Information Literacy. Retrieved from <http://www.ala.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cfm> Accessed June 20, 2009. Document ID: 126315.
- Anderson, T. (2009). Teaching and learning in a net-centric world. Retrieved May 13, 2009, from <http://terrya.edublogs.org/2009/04/28/social-networking-chapter/Ashcroft>,
- Baldi, S., Kutner, M., Greenberg, E., Jin, Y., Baer, J., Moore, E., . . . White, S. (2009). Technical report and data file user's manual for 2003 national assessment of adult literacy. Washington: National Centre for Educational Statistics.
- Bawden, David & Robinson, Lyn (2012). Foundations of information science. London: Facet Publishing.
- 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.
- Benjamin, J.B. (1986). Communication: concept and contexts. New York: Harper & Row.
- 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.
- Bransford, J. D., Sherwood, R. D., Hasselbring, T. S., Kinzer, C. K., & Williams, S. M. (1990). Anchored instruction: Why we need it and how technology can help. In D. Nix & R. J. Spiro (Eds.), Cognition, education, and multimedia: Exploring ideas in high technology (pp. 115-141). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- 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.
- 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.
- 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.
- Feather, J. (2008). The information society: a study of continuity and change. 5th ed. London: Facet Publishing.
- Halonen, R. (2008). Action learning with an information system project: Subjective reflections. Reflective Practice, 9 (1), 98-99.
- Haney, W., Russell, M., Gulek, C., & Fierros, E. (1998). Drawing on education: Using student drawings to promote middle school improvement. Schools in the Middle, 7 (3), 38-43.
- 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/>
- Gilchrist, Alan, Ed. (2009). Information science in transition. London: Facet Publishing.
- Machlup, F. (1984). The economics of information and human capital. Princeton: Princeton University Press.

Martin, W. J. (1995). The global information society. Brookfield, VT: Gower.  
 McGarry, K. J. (1993). The changing concept of information: an introductory analysis. (2nd. ed.). London: Facet Publishing.  
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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.  
 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

### THIRD SEMESTER

**Course Code: LIS-CC-301**

**Course Type: Core**

**Course Title: INFORMATION REPRESENTATION AND RETRIEVAL**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	80	10	10	Nil	Nil	100	<ul style="list-style-type: none"> <li>To provide basic concepts related to information representation and information retrieval system, subject indexing and indexing languages;</li> <li>To introduce features, components, types and models of digital IR system;</li> <li>To help in understanding information seeking behaviour and IR evaluation methods.</li> </ul>

#### 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.

#### 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-CC-301**

**Course Type: Core**

**Course Title: INFORMATION REPRESENTATION AND RETRIEVAL**

#### Reading List

- Aitchison, J. and Gilchrist, A. (2000). *Thesaurus construction and use: a practical manual*. 4th ed. London: Aslib.
- Anderson, James D. (1997). *Guidelines for indexes and related information retrieval devices: a technical report*. Bethesda, Maryland: National Information Standard Organization.
- 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. (2003). *Information representation and retrieval in the digital age*. Medford, N.J: Published for the American Society for Information Science and Technology by Information Today.
- Chowdhury, G. G. (2004). *Introduction to modern information retrieval*. 2<sup>nd</sup> ed. London, Facet Publishing.
- Foskett, A. C. *Subject approach to information*. (1996). 5<sup>th</sup> Ed. London: The Library Association.
- Fugmann, R.: *Subject analysis and indexing: theoretical foundation and practical advice*. Frankfurt: Verlag, 1983.
- Ghosh, S. B. and Satpathi, J. N., Eds. (1998). *Subject indexing systems: concepts, methods and techniques*. Calcutta. IASLIC.
- Gilchrist, A.: *From classification to knowledge organization*, 1997.
- Hyvönen, E. (2012). *Publishing and using cultural heritage linked data on the semantic Web*. San Rafael, Calif: Morgan & Claypool Publishers.
- ISO 2788:1986. *Guidelines for the establishment and development of monolingual thesauri*. Geneva: International Organization for Standardization.
- International Organization for Standardization. (2013). *Information and documentation: Thesauri and interoperability with other vocabularies*. Geneva: ISO.
- Jones, Karen Sparck, Ed. (1981). *Information retrieval experiment*. London, Butterworth.
- Lancaster, F. W. (1998). *Indexing and abstracting in theory and practice*. 2<sup>nd</sup> ed. Champaign Illinois, University of Illinois.
- Lancaster, F. W. (1979). *Information retrieval systems: characteristics, testing, and evaluation*. 2<sup>nd</sup> Ed. New York, John Wiley.
- Lancaster, F.W. (1986). *Vocabulary control for information retrieval*. 2nd ed. Arlington, VA: Information Resources.
- 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. (2003). Indexing and retrieval for the web. *Annual Review of Information Science and Technology*, 37, 91–124. Medford, NJ: Information Today Inc.

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.

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.

Sarkhel, Juran Krishna (2005). *Indexing systems and techniques*. In MLII-102; Unit 4, p.89-176: Information Processing and Retrieval, Edited by S B Ghosh. New Delhi, Indira Gandhi National Open University.

Sarkhel, Juran Krishna (2001). *Information analysis in theory and practice*. Kolkata, Classique Books, 2001.

Sparck, J. K., & Willett, P. (1997). *Readings in information retrieval*. San Francisco, Calif: Morgan Kaufman.

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-CC-302**

**Course Type: Core**

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

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <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>

**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 UDC;

- Knowledge Representation in CC;
- Knowledge Representation through Ontology;
- Knowledge Representation through SKOS.

**Unit 3: Trends and Future of Library Classification**

- Automatic classification - Application of NLP and AI techniques, Projects and initiatives, Indian school of research in automatic classification;
- Classification and Digital resource organization;
- Ontology: Tools and Rules;
- SKOS: Tools and Rules;
- Web-based classification systems.

### THIRD SEMESTER

Course Code: LIS-CC-302

Course Title: KNOWLEDGE ORGANIZATION (THEORY)

Course Type: Core

#### Reading List

- Broughton, Vanda. (2004). *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.
- F.I.D. (1993). *Universal Decimal Classification*. IME.
- Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
- Foskett, D. J. (1974). *Classification and indexing in social sciences*. London: Aslib.
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- 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,.
- Husain, Sabahat. (2004). *Library Classification: Facets and Analysis*. Delhi: B. R. Publishing.
- International Federation of Classification Societies., & Batagelj, V. (2006). *Data science and classification*. Berlin: Springer-Verlag.
- Jennex, Murray E. (2008). *Knowledge management: concepts, methodologies, tools and applications*. New York: Information Science Reference.
- King, B., & Reinold, K. (2008). *Finding the Concept, Not Just the Word: A Librarian's Guide to Ontologies and Semantics*. Burlington: Elsevier Science.
- Krishan Kumar. (1980). *Theory of classification*. New Delhi: Vikas.
- Kumbhar, R. (2011). *Library classification trends in the 21St century*. Burlington: Elsevier Science.
- Lim, E. H. Y., Liu, J. N. K., & Lee, R. S. T. (2011). *Knowledge seeker: Ontology modelling for information search and management : a compendium*. Berlin: Springer.
- Maltby, A. (1975). *Sayers' manual of classification for librarians*. (5th ed.). London: Andre Deutsch.
- Mukhopadhyay, A. (1976). *Guide to colon classification practical*. New Delhi: Metropolitan Book.
- Munn, K., & Smith, B. (2008). *Applied ontology: An introduction*. Frankfurt: Ontos Verlag.
- Navalani, K., & Gidwani, N. N. (1981). *A practical guide to colon classification*. New Delhi: Oxford & IBH Pub. Co.

Needham, C. D. (1971). *Organizing knowledge in libraries*. (2nd ed.). London: Andre Deutsch,.

Pathak, L. P. (2000). *Sociological terminology and classification schemes*. New Delhi: Mittal Publications.

Raju, A. A. N. (1984). *Decimal, Universal Decimal and Colon Classification: a study in comparison*. Delhi: Ajanta.

Ranganathan, S. R. (2006). *Philosophy of library classification*. Bangalore: Ess Ess.

Ranganathan, S.R. (1966). *Elements of library classification* (2nd ed.). Bombay: UBS.

Ranganathan, S.R. (1967). *Prolegomena to library classification* (3rd ed.). Bombay: UBS.

Ranganathan, S. R. (1987). *Colon classification*. Banglore: SRELS.

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.

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.

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-CC-303**

**Course Type: Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <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>

**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;

**Unit 3: SKOS and Ontology**

- Use of Ontology Editors;
- Ontology languages and standards;
- Design of domain ontology;
- SKOS editors and Tools;
- SKOS and Faceted classification.

### THIRD SEMESTER

Course Code: LIS-CC-303

Course Title: KNOWLEDGE ORGANIZATION (PRACTICE)

Course Type: Core

#### Reading List

- Broughton, Vanda. (2004). *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.
- F.I.D. (1993). *Universal Decimal Classification*. IME.
- Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
- Foskett, D. J. (1974). *Classification and indexing in social sciences*. London: Aslib.
- Foskett, A. C. (1996). *The subject approach to information*. (5th ed.). London: Clive Bingley.
- 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,.
- Husain, Sabahat. (2004). *Library Classification: Facets and Analysis*. Delhi: B. R. Publishing.
- International Federation of Classification Societies., & Batagelj, V. (2006). *Data science and classification*. Berlin: Springer-Verlag.
- Jennex, Murray E. (2008). *Knowledge management: concepts, methodologies, tools and applications*. New York: Information Science Reference.
- King, B., & Reinold, K. (2008). *Finding the Concept, Not Just the Word: A Librarian's Guide to Ontologies and Semantics*. Burlington: Elsevier Science.
- Krishan Kumar. (1980). *Theory of classification*. New Delhi: Vikas.
- Kumbhar, R. (2011). *Library classification trends in the 21St century*. Burlington: Elsevier Science.
- Lim, E. H. Y., Liu, J. N. K., & Lee, R. S. T. (2011). *Knowledge seeker: Ontology modelling for information search and management : a compendium*. Berlin: Springer.
- Maltby, A. (1975). *Sayers' manual of classification for librarians*. (5th ed.). London: Andre Deutsch.
- Mukhopadhyay, A. (1976). *Guide to colon classification practical*. New Delhi: Metropolitan Book.
- Munn, K., & Smith, B. (2008). *Applied ontology: An introduction*. Frankfurt: Ontos Verlag.

Navalani, K., & Gidwani, N. N. (1981). *A practical guide to colon classification*. New Delhi: Oxford & IBH Pub. Co.

Needham, C. D. (1971). *Organizing knowledge in libraries*. (2nd ed.). London: Andre Deutsch,.

Pathak, L. P. (2000). *Sociological terminology and classification schemes*. New Delhi: Mittal Publications.

Raju, A. A. N. (1984). *Decimal, Universal Decimal and Colon Classification: a study in comparison*. Delhi: Ajanta.

Ranganathan, S. R. (2006). *Philosophy of library classification*. Bangalore: Ess Ess.

Ranganathan, S.R. (1966). *Elements of library classification* (2nd ed.). Bombay: UBS.

Ranganathan, S.R. (1967). *Prolegomena to library classification* (3rd ed.). Bombay: UBS.

Ranganathan, S. R. (1987). *Colon classification*. Bangalore: SRELS.

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.

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.

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-HC-304**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide 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>

#### 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: Workflow and 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.

#### Unit 4: 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;
- Trends and future of library automation software – Web-scale discovery, Linked open data, Cloud based library automation, Library mashup etc.

### THIRD SEMESTER

**Course Code: LIS-HC-304**

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

**Course Type: Hard Core**

#### Reading List

- Anuradha, K.T., & Savanur, Kiran P. (2010). *Installing newgenlib: open source library automation package*. (SRELS Journal of Information Management, 2010, Vol.47, p621.) Sarada Ranganathan Endowment for Library Science.
- 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. (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.
- 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.
- Haravu, L. J. (2004). *Library automation design principles and practice (with CD-ROM) /by L.J. Haravu*. New Delhi: Allied Publishers.
- James E. Rush Associates. (1983). *Library systems evaluation guide*. Powell, Ohio: James E. Rush Associates.
- Kochtanek, T. R., & Matthews, J. R. (2002). *Library information systems: From library automation to distributed information access solutions*. Westport, Conn: Libraries Unlimited.
- 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.
- 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.
- 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.
- 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.

Singh, M., & Sanaman, G. (December 01, 2012). Open source integrated library management systems: Comparative analysis of Koha and NewGenLib. *Electronic Library*, 30, 6, 809-832.

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.

Winnebago Software Company. (1993). *Guide to library automation: A step-by-step introduction*. Caledonia, MN: Winnebago Software Co.

### THIRD SEMESTER

**Course Code: LIS-HC-305**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	40	Nil	Nil	10	Nil	50	<ul style="list-style-type: none"> <li>To use open source ILS;</li> <li>To explore basic and advanced features of selected ILS; and</li> <li>To know ILS administration.</li> </ul>

**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.

**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.

### THIRD SEMESTER

**Course Code: LIS-HC-305**

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

**Course Type: Hard Core**

**Reading List\***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.

Anuradha, K.T., & Savanur, Kiran P. (2010). *Installing newgenlib: open source library automation package*. (SRELS Journal of Information Management, 2010, Vol.47, p621.) Sarada Ranganathan Endowment for Library Science.

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. (2010). *Next-gen library catalogs*. New York: Neal-Schuman Publishers.

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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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James E. Rush Associates. (1983). *Library systems evaluation guide*. Powell, Ohio:

James E. Rush Associates.

Kochtanek, T. R., & Matthews, J. R. (2002). *Library information systems: From library automation to distributed information access solutions*. Westport, Conn: Libraries Unlimited.

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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.

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.



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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.

Winnebago Software Company. (1993). *Guide to library automation: A step-by-step introduction*. Caledonia, MN: Winnebago Software Co.

### THIRD SEMESTER

**Course Code: LIS-HC-306**

**Course Type: Hard Core**

**Course Title: DIGITAL RESOURCE MANAGEMENT**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	0	1	4	80	Nil	Nil	20	Nil	100	<ul style="list-style-type: none"> <li>To provide nature, features, scopes and limitations of digital information resources;</li> <li>To know the use of text retrieval and support tools in organizing digital resources;</li> <li>To explore the use of content management system, Web 2.0 and Semantic web technologies in library systems.</li> </ul>

#### Unit 1: Organization of 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);
- 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, Ontology-driven retrieval – rules and tools;

#### Unit 2: 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 3: Content Designation through MARC 21 – Advanced level

- Designing MARC 21 based Frameworks for different document types;
- Integration of Authority lists in MARC 21 formats;
- Integration of Bibliographic and Authority formats;
- Managing Reference entries and Analytical entries;
- Distributed cataloguing.

#### 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 schemas.

### Unit 5: 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.

### Unit 6: Practical Components

- MARC 21 Bibliographic and Authority Formats;
- MARC 21 Editors and Tools;
- Metadata Editors;
- CMS and Learning Content Management System (LCMS);
- Web 2.0 and Library 2.0– RSS, Wikimedia, Blog, Social networking, Social bookmarking, Carousel etc;

## THIRD SEMESTER

**Course Code: LIS-HC-306**

**Course Title: DIGITAL RESOURCE MANAGEMENT**

**Course Type: Hard Core**

### Reading List

Akerkar, R. (2009). *Foundations of the Semantic Web: XML, RDF and ontology*. Oxford, U.K: Alpha Science International.

Arthur, M. H. (2006). *Expanding a digital content management system: For the growing digital media enterprise*. Amsterdam: Elsevier Focal Press.

Berry, M. W., & Browne, M. (2005). *Understanding search engines: Mathematical modeling and text retrieval*. Philadelphia, PA: SIAM, Society for Industrial and Applied Mathematics.

Casey, M. E., & Savastinuk, L. C. (2007). *Library 2.0: A guide to participatory library service*. Medford, N.J: Information Today.

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.

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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.

Hjelm, J. (2001). *Creating the semantic Web with RDF: Professional developer's guide*. New York: Wiley.

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.

Langville, A. N., & Meyer, C. D. (2006). *Google's PageRank and beyond: The science of search engine rankings*. Princeton, N.J: Princeton University Press.

Lazarinis, F. (2014). *Cataloguing and Classification: An introduction to AACR2, RDA, DDC, LCC, LCSH and MARC 21 Standards*. Burlington: Elsevier Science.

Lin, Q., Allebach, J. P., & Fan, Z. (2011). *Imaging and printing in a web 2.0 world II*. Bellingham, WA: SPIE.

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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.

Zeng, M. L., & Qin, J. (2014). *Metadata. 2nd, rev. ed.* Chicago: American Library Association.

## FOURTH SEMESTER

**Course Code: LIS-HC-401**

**Course Type: Hard Core**

**Course Title: RESEARCH METHODOLOGY**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	80	10	10 *	Nil	Nil	100	<ul style="list-style-type: none"> <li>To support in understanding concepts related to research methods in general;</li> <li>To introduce research support tools and research communication process including issues related to scholarly metrics; and</li> <li>To help in identifying research information sources in LIS and to explore the trends of LIS research in India and abroad.</li> </ul>

### 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.

### 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.

### 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.

### Unit 4: Fundamentals of Statistics

- Collection, Organization and Presentation of data through statistics;

- Application of statistical techniques in LIS;
- Measures of Central Tendency – Mean, Median and Mode;
- Measures of Dispersion - Absolute and relative measures;
- Bivariate Frequency Distribution - Bivariate data; Scatter Diagram; Correlation and regression; Rank Correlation.

#### Unit 5: Informetrics

- Librametry, Bibliometrics, Scientometrics, Informetrics – Meaning, Scope and features;

- Bibliometrics and Informetrics Laws and Indicators;
- Bibliometrics, Informetrics and Webometrics techniques – Growth, Obsolescence (Synchronous vs. Diachronous studies), Citation and Co-Citation analysis, Network analysis, half-life, collaboration, Coupling, Informetric Modeling.;
- Bibliometrics and Informetrics tools – SCI, SSCI, A&HCI, MSCI, SCOPUS, Google Scholar, PoP etc; Webometrics and Altmetrics Tools.
- Research communications and Trends of LIS research

\*Students need to conduct user survey/library survey 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.

### FOURTH SEMESTER

**Course Code: LIS-HC-401**

**Course Title: RESEARCH METHODOLOGY**

**Course Type: Hard Core**

#### Reading List

Busha, Charles A, & Harter, Stephen P. (1980). *Research methods in librarianship: techniques and interpretations*. New York: Academic Press.

Daniel, R., Mills, J., & Classification Research Group. (1975). *A classification of library & information science*. London: Library Association.

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.

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.

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.

Hafner, Arthur W. (1997). *Descriptive statistical techniques for librarians*. (2nd ed.). Chicago: American Library Association.

Khan, M. A. (2002). *Research methods in library and information science*. New Delhi: Cosmo Publications.

Lawal, I. O. (2009). *Library and information science research in the 21st century: a guide for practising 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., & Herson, 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.

Sen, B. K., Indian National Science Academy., & Indian National Commission for History of Science. (2005). *Growth of scientific periodicals in India (1901-1947)*.

Stephen, Peter, & Hornby, Susan. (1995). *Simple statistics for library and information professionals*. London: Library Association.

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.

Tague-Sutcliffe, J. (1992). *Infometrics*. New York: Pergamon Press.

Tague-Sutcliffe, J. (January 01, 1992). An Introduction to Infometrics. *Information*

#### FOURTH SEMESTER

**Course Code: LIS-HC-402**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	10	Nil	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide basic concepts related to digital library systems;</li> <li>To introduce standards and software related to digital library systems; and</li> <li>To explore the applications of software and standards in developing digital library systems.</li> </ul>

#### Unit 1: Organization of Digital Objects - Issues and Challenges

- Digital information resources and Digital archiving; Traditional, automated, digital and virtual library systems;
- Digital library – Models and Initiatives;
- Crosswalks and Interoperability; Crosswalks of metadata schemas;
- Interoperability initiatives and standards;
- Digital Library – Software and Standards.

#### Unit 2: 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 3: 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;

- Trends and future.

#### FOURTH SEMESTER

**Course Code: LIS-HC-402**

**Course Type: Hard Core**

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

#### Reading List

- Argerich, K. (2004). *Professional PHP programming*. Mumbai: SPD/Apress Reprints.
- Arms, W. (2000). *Digital libraries*. Cambridge MA: MIT Press,.
- Bayross, I. (2000). *Using Apache, MySQL, PHP and PERL on Linux*. New Delhi: BPB Publications.
- Bayross, I. (n.d.). *Using MySQL on Linux: .* New Delhi: BPB Publications.
- Bhatnagar, S. (2002). *Information and communication technology in development: cases from India*. New Delhi: Sage.
- Borgman, G.L. (2000). *From Gutenberg to the global information infrastructure: access to information in networked world*. Cambridge MA: MIT Press.
- Barnes, S. J. (2004). *Becoming a digital library*. New York: Marcel Dekker.
- 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.
- Digital Library Futures: User Perspectives and Institutional Strategies (Conference), Verheul, I., Tammaro, A. M., & Witt, S. (2010). *Digital Library Futures: User Perspectives and Institutional Strategies*. Berlin: De Gruyter Saur.
- 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,.
- Jean, G. (2011). *Digital Library*. New Delhi: World Technologies.
- 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.
- 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).  
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.  
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-HC-403**

**Course Type: Hard Core**

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

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	0	2	2	40	Nil	Nil	10	Nil	50	<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>

#### 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.

#### Unit 3: 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-HC-403**

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

**Course Type: Hard Core**

### Reading List

- Argerich, K. (2004). Professional PHP programming. Mumbai: SPD/Apress Reprints.
- Arms, W. (2000). Digital libraries. Cambridge MA: MIT Press,.
- Bayross, I. (2000). Using Apache, MySQL, PHP and PERL on Linux. New Delhi: BPB Publications.
- Bayross, I. (n.d.). Using MySQL on Linux: . New Delhi: BPB Publications.
- Bhatnagar, S. (2002). Information and communication technology in development: cases from India. New Delhi: Sage.
- Borgman, G.L. (2000). From Gutenberg to the global information infrastructure: access to information in networked world. Cambridge MA: MIT Press.
- Barnes, S. J. (2004). Becoming a digital library. New York: Marcel Dekker.
- 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.
- Digital Library Futures: User Perspectives and Institutional Strategies (Conference), Verheul, I., Tamarro, A. M., & Witt, S. (2010). Digital Library Futures: User Perspectives and Institutional Strategies. Berlin: De Gruyter Saur.
- 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,.
- Jean, G. (2011). Digital Library. New Delhi: World Technologies.



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.

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).

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.

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-SC-404 A (Elective)**

**Course Type: Soft Core**

**Course Title: COMMUNITY INFORMATION SYSTEM**

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	Nil	10	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide basic concepts related to community information system and services;</li> <li>To introduce resources, standards and software related to CIS; and</li> <li>To explore the applications of software and standards in developing digital community information system and services.</li> </ul>

#### Unit 1: Fundamentals of Community Information Services

- 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;
- Community Information Systems and Services: Global and National Scenario;
- Community information resources – nature, features and sources.

- 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

#### Unit 2: Community Information Resources: Organization and Access

tools;

- Access to Community Information Resources – Media and Mechanisms;
- Projects and initiatives on community information organization.

### **Unit 3: 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-SC-404 A (Elective)**

**Course Title: COMMUNITY INFORMATION SYSTEM**

**Course Type: Soft Core**

### **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.

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#### FOURTH SEMESTER

**Course Code: LIS-SC-404 B (Elective)**  
**Course Title: OPEN KNOWLEDGE SYSTEM**

**Course Type: Soft Core**

Credit Structure				Marks Distribution						Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	Nil	10	Nil	Nil	50	<ul style="list-style-type: none"> <li>To provide concepts, features, scopes and advantages of open access resources;</li> <li>To introduce open access 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>

#### Unit 1: 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);

#### Unit 2: 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 3: 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-SC-404 B (Elective)**  
**Course Title: OPEN KNOWLEDGE SYSTEM**

**Course Type: Soft Core**

### Reading List

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#### FOURTH SEMESTER

**Course Code: LIS-SC-405 A (Elective)**

**Course Type: Soft Core**

**Course Title: LIBRARY SERVICE PLATFORM**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	Nil	10	Nil	Nil	50	<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>

#### Unit 1: Library Ecosystem

- Components of library ecosystem;
- ILS transition – social and technical factors;
- LSP providers and LSP products;
- LSP technologies and LSP standards;
- LSP projects: OLE and FOLIO.

#### Unit 2: 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 3: 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-SC-405 A (Elective)**

**Course Title: LIBRARY SERVICE PLATFORM**

**Course Type: Soft Core**

### 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.
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## FOURTH SEMESTER

**Course Code: LIS-SC-405 B (Elective)**

**Course Type: Soft Core**

**Course Title: SEMANTIC WEB TECHNOLOGIES FOR LIBRARY**

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
1	1	0	2	40	Nil	10	Nil	Nil	50	<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 wein Semantic Web tools; and</li> <li>To explore the use of LOD in library systems.</li> </ul>

### Unit 1: Semantic Web Components

- Semantic Web – what and why, concepts and possibilities;
- Major components;
- RDF Triple, RDF-XML; RDF and Metadata;
- Uniform Resource Identifier;
- Ontology.

### Unit 2: Semantic Web Application Tools

- Application in libraries;
- RDF support tools;
- SPARQL - RDF Query Language;

- RDF converter – MARC to RDF, DCMES to RDF;
- Semantic Web Framework (Apache-Jena etc).

**Unit 3: 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-SC-405 B (Elective)**

**Course Type: Soft Core**

**Course Title: SEMANTIC WEB TECHNOLOGIES FOR LIBRARY**

**Reading List**

- 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.
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- Langville, A. N., & Meyer, C. D. (2006). *Google's PageRank and beyond: The science of search engine rankings*. Princeton, N.J: Princeton University Press.
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- Méndez Rodríguez, Eva María, & Greenberg, Jane. (2012). *Linked data for open vocabularies and HIVE's global framework*. EPI SCP.
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 Warner, J. (2010). *Human information retrieval*. Cambridge, Mass: MIT Press.  
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 Yu, H. (2005). *Content and workflow management for library web sites: Case studies*. Hershey, PA: Information Science Pub.

**FOURTH SEMESTER**

**Course Code: LIS-HC-406**

**Course Type: Hard Core**

**Course Title: GUIDED RESEARCH PROJECT**

Credit Structure				Marks Distribution			Objectives
Lecture	Tutorial	Practice	Total Credit	Research Report	Viva / Presentation	Total Marks	
0	4	0	4	<b>80</b> (Text)	<b>20</b>	<b>100</b>	<ul style="list-style-type: none"> <li>To complete a research project on a selected topic pertaining to the applications of the professional techniques and their underlying principles by following research methods and standards; and</li> <li>To develop research skills and independent thinking.</li> </ul>

