



University of Kalyani

Department of Library and Information Science

Kalyani – 741235; West Bengal

MASTER OF LIBRARY AND INFORMATION SCIENCE (MLIS)

SYLLABUS

(Choice Based Credit System)

With effect from 2014-2016 academic session

Approved in the PGBOS meeting held on 29.05.2014

Master of Library and Information Science (MLIS)

Integrated Two Academic Sessions - Four Semester Course – Choice based Credit System (With effect from 2014-2016 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 Five (25)

Academic Calendar: As per the University Academic calendar

- Course Structure:**
- MLIS curricula consists of **72 credits** distributed in **18 courses** in **2 academic sessions** and **4 semesters**.
 - 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.
 - **64 credits** are meant for **Core Courses** (coded as ML-CC-XXX) and required to be completed/earned by each student.
 - **8 credits** are assigned to **Open Courses** (coded as ML-OC-XXX). Students of MLIS course may opt for **one Open Course in first and third semester** either from open courses offered by this department or from open courses offered by any other department under this university (XXX is course number).
 - Students from **other departments** of this university **may opt for Open Courses offered by this department**.
 - MLIS course has a total **1800 marks** (100 X 16 Core Courses + 100 X 2 Open Courses).
 - 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 theory paper is based on **CE**, then it will be a **combination of MCQ test + Term paper / Seminar presentation**.
 - If internal assessment of a practice paper is based on **CE**, then it will be based on **Practical tests**.

Credit pattern explanation:

L	T	P	
3	1	0	pattern: 3 X 12 wk = 36 hrs = 3 credits + 1 X 12 wk = 12 hrs = 1 credit + 0 > All together 4 credit
2	0	4	pattern: 2 X 12 wk = 24 hrs = 2 credits + 0 + 4 X 12 wk = 48 hrs = 2 credit > All together 4 credit
2	1	2	pattern: 2 X 12 wk = 24 hrs = 2 credits + 1 X 12 wk = 12 hrs = 1 credit + 2 X 12 wk = 24 hrs = 1 credit > All together 4 credit
0	2	4	pattern: 0 + 2 X 12 wk = 24 hrs = 2 credit + 4 X 12 wk = 48 hrs = 2 credits > All together 4 credit
0	4	0	pattern: 0 + 4 X 12 wk = 48 hrs = 4 credit + 0 > All together 4 credit

Course Credit Structure

Sem	Course Code	Course Title	Credit Pattern			Credit Value	Marks Distribution		
			Lecture (L)	Tutorial (T)	Practice (P)		Semester Examination	Internal Assessment	Total Marks
SEM I	ML-CC-101	Library, Information and Society	3	1	0	4	60	40	100
	ML-CC-102	Knowledge Organization	2	1	2	4	60	40	100
	ML-CC-103	Resource Description	3	1	0	4	60	40	100
	ML-CC-104	Library Information Technology	2	0	4	4	60	40	100
	ML-OC-105	Information Sources and Products	2	1	2	4	60	40	100
SEM II	ML-CC-201	Information Systems, Services and Users	3	1	0	4	60	40	100
	ML-CC-202	Document Classification	0	2	4	4	60	40	100
	ML-CC-203	Document Cataloguing	0	2	4	4	60	40	100
	ML-CC-204	Content Designation and Metadata Encoding	2	1	2	4	60	40	100
SEM III	ML-CC-301	Library System Management	3	1	0	4	60	40	100
	ML-CC-302	Information Retrieval	3	1	0	4	60	40	100
	ML-CC-303	Automated Library System	2	0	4	4	60	40	100
	ML-CC-304	Digital Resource Management	2	0	4	4	60	40	100
	ML-OC-305	Open Knowledge System	2	1	2	4	60	40	100
SEM IV	ML-CC-401	Research Methodology	3	1	0	4	60	40	100
	ML-CC-402	Digital Library System	2	0	4	4	60	40	100
	ML-CC-403	Elective (any one) ML-CC-403 A: Community Information System ML-CC-403 B: Informetrics	3	1	0	4	60	40	100
	ML-CC-404	Guided Research Project	0	4	0	4	60 (Text)	40 (Viva/Presentation)	100
Grand total						72	1080	720	1800

Course Contents Structure

	Course Code	Course Title	Course Summary	Marks Distribution			Total Marks
				Semester Exam	Int Assessment		
					CE	PRC / PRJ	
S E M I	ML-CC-101	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 Management	60	25	15 (PRJ)	100
	ML-CC-102	Knowledge Organization	Unit 1: Basic concepts Unit 2: Schemes of Library Classification Unit 3: General Theory of Library Classification Unit 4: Special Classification Schemes Unit 5: Trends and Future of Library Classification Unit 6: Practical Component (Colon Classification 6 th edition)	60	NIL	40 (PRC)	100
	ML-CC-103	Resource Description	Unit 1: Basic Concepts and Genesis Unit 2: Principles and Rules Unit 3: Cataloguing Codes Unit 4: Authority Data and Subject Cataloguing Unit 5: Cataloguing – Policies and Initiatives	60	25	15 (PRJ)	100
	ML-CC-104	Library Information Technology	Unit 1: Introduction to ICT Unit 2: Logical Units of ICT: Software Unit 3: Computer Programming Languages Unit 4: Computer Networks and Distributed Information System Unit 5: Database Management System (DBMS) Unit 6: Practical Components	60	NIL	40 (PRC)	100
	ML-OC-105	Information Sources and Products	Unit 1: Information Sources Unit 2: Reference and Information Services Unit 3: Information Products Unit 4: Electronic Information Products and Services Unit 5: Technical Writing	60	25	15 (PRJ)	100
S E M I I	ML-CC-201	Information Systems, Services and Users	Unit 1: Information Systems Unit 2: Information Institutions Unit 3: Library Networking and Consortia Unit 4: Information Consolidation and Repackaging Unit 5: Information Users	60	25	15 (PRJ)	100
	ML-CC-202	Document Classification	Unit 1: Introduction Unit 2: Dewey Decimal Classification - stage 1 Unit 3: Dewey Decimal Classification - stage 2 Unit 4: Universal Decimal Classification - stage 1 Unit 5: Universal Decimal Classification - stage 2	60	40	NIL	100

	ML-CC-203	Document Cataloguing	Unit 1: Introduction Unit 2: AACR II – Rules for description Unit 3: AACR II – Rendering of access points Unit 4: CCC 5 th edition – Rules for description Unit 5: CCC 5 th edition – Rendering of access points	60	25	15 (PRJ)	100
	ML-CC-204	Content Designation and Metadata Encoding	Unit 1: Introduction to Content Designation Unit 2: Bibliographic Data Formats Unit 3: Authority Data Formats Unit 4: Generic Metadata Schemas Unit 5: Domain-specific Metadata Schemas Unit 6: Practical Components	60	NIL	40 (PRC)	100
S E M III	ML-CC-301	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	60	25	15 (PRJ)	100
	ML-CC-302	Information 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	60	25	15 (PRJ)	100
	ML-CC-303	Automated Library System	Unit 1: Introduction to Library Automation Unit 2: Workflow of Automated Library System Unit 3: Components of Automated Library System Unit 4: Standards related to Library Automation Unit 5: Software related to Library Automation Unit 6: Practical Components	60	NIL	40 (PRC)	100
	ML-CC-304	Digital Resource Management	Unit 1: Introduction to Digital Information Resources Unit 2: Text Retrieval Engines and Retrieval Support Tools Unit 3: Content Management System Unit 4: Web 2.0 and Library 2.0 Unit 5: Semantic Web Technologies Unit 6: Practical Components	60	NIL	40 (PRC)	100
	ML-OC-305	Open Knowledge System	Unit 1: Introduction to Open Knowledge System Unit 2: Mandate, Policies and Licensing Unit 3: Open Access Sources and Services Unit 4: Open Access Interoperability Unit 5: Management and Integration of Open Contents	60	25	15 (PRJ)	100
	ML-CC-401	Research Methodology	Unit 1: Introduction to Research Methodology Unit 2: Research Design and Methods Unit 3: Data Collection Tools, Data Analysis and Reporting	60	25	15 (PRJ)	100

S E M IV			Unit 4: Research communication Unit 5: LIS Research				
	ML-CC-402	Digital Library System	Unit 1: Historical and Theoretical Foundations Unit 2: Organization of Digital Objects Unit 3: Architecture, Information Retrieval and User interfaces Unit 4: Design and Development of Digital Library Systems Unit 5: Federated and Multilingual Digital Library Systems Unit 6: Practical Components	60	NIL	40 (PRC)	100
	ML-CC-403	Elective (any one) ML-CC-403 A: Community Information System ML-CC-403 B: Informetrics	ML-CC-403 A: Community Information System Unit 1: Fundamentals of Community Information Services (CIS) Unit 2: Community Information Resources Unit 3: Local Studies Unit 4: Community Information Resources: Organization and Access Unit 5: Digital Community Information Services ML-CC-403 B: Informetrics Unit 1: Fundamentals of Statistics Unit 2: Basic Principles of Statistical Inference Unit 3: Introduction to Informetrics Unit 4: Indicators, Tools and Techniques Unit 5: Applications and Trends	60	25	15 (PRJ)	100
	ML-CC-404	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 rd semester and is to be submitted for evaluation before dissolution of the 4 th semester classes.	60 (Text)	NIL	40 (Viva/Presentation)	100

FIRST SEMESTER

Course Code: ML-CC-101

Course Title: LIBRARY, INFORMATION AND SOCIETY

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide theoretical foundation of the course; To explore the normative principles, legislation and IPR issues related to the discipline; and To study features of information society and knowledge economics.

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;
- 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 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: ML-CC-101

Course Title: LIBRARY, INFORMATION AND SOCIETY

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: ML-CC-102

Course Title: KNOWLEDGE ORGANIZATION

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	1	2	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide historical and theoretical foundation of knowledge organization; To explore the features of traditional library classification schemes; and To know the methods related to designing depth schedule and to study the use of technologies in library classification.

Unit 1: Basic concepts

- 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.

Unit 2: Schemes of Library Classification

- Major Classification Schemes: structure and features;
- Steps involved in practical classification, Call Number and its parts;
- Study of classification schemes – DDC, UDC, CC;
- Classification and Computers: Digital versions of classification schemes;
- Switching Languages – BSO.

Unit 3: 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 4: 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 5: 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;
- Classification and Ontology (dewey.info, udcdata.info);
- Classification and SKOS;
- Web-based classification systems (CyberDewey, Scorpion etc).

Unit 6: Practical Component (Colon Classification 6th edition)

- Colon Classification – History, Genesis and Structure;
- Colon Classification – structure and rules;
- Building of class number - simple and compound subjects;
- Building of class number - complex subjects;
- Colon Classification – use of index.

FIRST SEMESTER

Course Code: ML-CC-102

Course Title: KNOWLEDGE ORGANIZATION

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: ML-CC-103

Course Title: RESOURCE DESCRIPTION

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide historical and theoretical foundation of resource description; To help in understanding normative principles and cataloguing codes; and To know the authority data management and to study the initiatives and trends of library cataloguing.

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 alphabetico-classed forms and their comparative studies;
- Entries – types, formats and their functions, Filing of entries – rules and tools.

Unit 2: Principles and Rules

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

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 5th edition);
- Features of RDA (Resource Description and Access).

Unit 4: Authority Data and Subject Cataloguing

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

Unit 5: Cataloguing – Policies and Initiatives

- 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, and FRSAD;
- Subject and Name authority initiatives – Program for Cooperative Cataloging (BIBCO, CONSER, SACO, NACO) and VIAF.

FIRST SEMESTER

Course Code: ML-CC-103

Course Title: RESOURCE DESCRIPTION

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.
- IFLA. (1998). *IFLA: Functional requirements for bibliographic records: final report*. Munich: K.G. Saur.
- International Conference on the Principles and Future Development of AACR, & Weihs, J. R. (1998). *The principles and future of AACR: Proceedings of the International Conference on the Principles and Future Development of AACR, Toronto, Ontario, Canada, October 23-25, 1997*. Ottawa: Canadian Library Association.
- JISC (2006). *RDA online*. Retrieved from <http://www.rdaonline.org>
- Krishan Kumar. (1993). *Cataloguing*. New Delhi: Har Anand.
- Le, B. P. (2005). *Functional requirements for bibliographic records (FRBR): Hype or cure-all?*. Binghamton, NY: Haworth Information Press.
- Livingston, E. D. (1982). *Rudiments of library cataloguing: Theory and practice*. Hyderabad: Andhra Pradesh Public Library Association.
- Nanda, M. (2006). *Library cataloguing*. New Delhi, India: Anmol Publications.
- Needham, C. D. (1971). *Organisation of knowledge and libraries: an introduction to classification and cataloguing* (2nd ed.). London: Andre Deutsch.
- Olding, R.K. (1967). *Readings in library cataloguing*. New Delhi: Lakshmi.
- Oliver, C., & American Library Association. (2010). *Introducing RDA: a guide to the basics*. Chicago: American Library Association.
- Patton, G. E., & International Federation of Library Associations and Institutions. (2009). *Functional requirements for authority data: a conceptual model*. München: K.G. Saur.
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FIRST SEMESTER

Course Code: ML-CC-104

Course Title: LIBRARY INFORMATION TECHNOLOGY

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	0	4	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide basic ICT concepts; To explore the possibilities of ICT in designing library services; and To know the use of database and networking technologies in developing library systems and services.

Unit 1: Introduction to ICT

- Data, information and knowledge, ICT – definition, scope, application in human activities, social implication, Application of ICT in activities of library and information centres;
- Brief history of computer development, Generation of computers, Characteristics and classification of digital computers;
- Anatomy of digital computers - System hardware, Memory units and auxiliary storage devices, Peripheral devices (Input and output devices);
- Communication devices, Transmission media (Bound links and Unbound links), Switches;
- Data Representation in Computer - Bits, bytes and word, Number system (Binary, Octal, Decimal, Hexadecimal and their conversion), Text representation codes (ASCII, ISCII, EBCDIC and UNICODE), 7 bit & 8 bit ASCII and UTF-8 & UTF-16.

Unit 2: Logical Units of ICT: Software

- System software – Operating System, Simulators, Emulators, Translators;
- Application software, System utility software, Software packages and their domains of application;
- Operating Systems – Types and functions, Basic concepts related to MSDOS, Windows and Linux operating system;
- Open source software and open standards;
- Software and standards related to LIS domain.

Unit 3: Computer Programming Languages

- Definition, scope and use of programming languages, Types of programming languages – machine language, assembly language and high level language;
- High level programming languages – classification, application domain and generations;
- Program development tools – compiler, interpreter, loader, linker and locator;

- Programming process – steps, algorithm and flowcharting;
- Overview of popular high-level languages – C, C++, Java etc.

Unit 4: 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 5: 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;
- Bibliographic databases, Search strategy and techniques of data retrieval, CDROM database searching;
- WINISIS as bibliographic database management system.

Unit 6: Practical Components

- Operating Systems - MSDOS, Windows OS, Linux basics;
- Office Management Software Group;
- Programming language – Basic tasks and problem solving;
- DBMS – Multipurpose DBMS and Bibliographic DBMS; and
- Bibliographic and Full-text database searching.

FIRST SEMESTER

Course Code: ML-CC-104

Course Title: LIBRARY INFORMATION TECHNOLOGY

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,.
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- Gorman, M. (2003). *The enduring library: technology, tradition, and the quest for balance*. Chicago: American Library Association.
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- Chartered Institute of Library and Information Professionals (Great Britain). (1998). *Multimedia information & technology: MmIT*. London, England: Multimedia Groups of Aslib.
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- Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.
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- Rajaraman, V. (1995). *Fundamentals of computers*. New Delhi: PHI.
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- 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.
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- Viswanathan, T. (1992). *Telecommunication switching systems and networks*. New Delhi: Prentice Hall of India Private Ltd.
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- Williams, H. E., & Lane, D. (2002). *Web database applications with PHP & MySQL*. Beijing: O'Reilly.

FIRST SEMESTER

Course Code: ML-OC-105

Course Title: INFORMATION SOURCES AND PRODUCTS

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	1	2	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To help in understanding the types and scopes of information resources To know features of different forms and sources of information; and To know the process of retrieving databases and on-line /web information resources in network environment.

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;
- Other secondary information 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: Technical Writing

- Scope, structure and functions of technical communication, Creative Vs. Technical writing;
- Categories of technical communication – academic (summary, reports, digests, reviews, manual etc), business (MoU, License, Contract, brochure etc) and policy (mission statement, plan and policy statement, action statement etc);
- Technical editing and editorial tools;
- Citation management – styles, standards and tools;
- Preparation of short communications, review articles, technical reports, house bulletins, newsletters, conference/seminar brochure etc.

FIRST SEMESTER

Course Code: ML-OC-105

Course Title: INFORMATION SOURCES AND PRODUCTS

Reading List

- Bopp, R. E., & Smith, L. C. (1995). *Reference and information services: An introduction*. Englewood, Colo: Libraries Unlimited.
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- Cheney, F. N. (1975). *Fundamental reference sources*. Chicago: American Library Association.
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- Fourie, D. K., & Dowell, D. R. (2002). *Libraries in the information age: An introduction and career exploration*. Greenwood Village, Colo: Libraries Unlimited.
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- Katz, B. (2002). *Introduction to reference work*. Boston [etc.]: McGraw-Hill.
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- 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.
- Ross, C.S., Nilsen, K., & Dewdney, P. (2002). *Conducting the reference interview: a how-to-do manual for librarians*. London: Facet Publishing.
- Smith, L. C., & Clinic on Library Applications of Data Processing. (1989). *Questions and answers: Strategies for using the electronic reference collection*. Urbana-Champaign, Ill: Graduate School of Library and Information Science, University of Illinois.
- Stevens, R. E., & Smith, L. C. (1986). *Reference work in the university library*. Littleton, Colo: Libraries Unlimited.
- Walford, A. J., Mullan, M., & Schlicke, P. (1989). *Guide to reference material*. Gran Bretaña: Library Association.
- Wood, M. Sandra, & Seeds, Robert S. (1974). *Development of SDI Services from a Manual Current Awareness Service to SDILINE*.
- Woodsworth, A., & Williams, J. F. (1994). *Managing the economics of owning, leasing, and contracting out information services*. Aldershot, England: Gower.

SECOND SEMESTER

Course Code: ML-CC-201

Course Title: INFORMATION SYSTEMS, SERVICES AND USERS

Credit Structure				Marks Distribution					Objectives
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks
					CE	PRJ	PRC	Viva	
3	1	0	4	60	25	15	Nil	Nil	<ul style="list-style-type: none"> To know features of information sources and institutions, information repackaging and consolidation; To train students with the practical skills for preparation of IA+C products; and To impart to students thorough understanding of the study of information users and their education

Unit 1: Information Systems

- Information System: Objectives, Scope, Characteristics, Features and Components, Types and Categories (Mission-oriented, Disciple-oriented and Problem-oriented), Library as an information system;
- 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 and Regional Information Systems and Networks like UNISIST, AGRIS, INIS, DEVSIS, MEDLARS / MEDLINE, INFOTERRA, HELLIS, APINMAP, OCLC Inc., DIALOG, etc.;
- Structure and Services of National Information Systems and Networks like INFLIBNET, INDEST, UGC-Infonet, DELNET, BTIS and ENVIS;
- Evaluation of Information Systems.

Unit 2: Information Institutions

- Information Institutions: Evolution, growth 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;
- Role of International organizations in the development of systems and services: IFLA, UNESCO, FAO, UNEP, UNDP, FID, CILIP, etc.

Unit 3: Library Networking and Consortia

- Resource sharing and Library Networking: Need, structure and management;
- Global Library Networks – their objectives, scope, structure and services: OCLC,

RLIN, WLN, BLAISE, etc;

- Indian Library Networks – their objectives, scope, structure and services: INFLIBNET, DELNET, etc.;
- Library consortia: Scope, Need, Objectives, Functions, Features and Services;
- Global and Indian library consortia initiatives: (ICOLC, SPARC, INDEST, UGC-Infonet, FORSA, NKRC etc.

Unit 4: Information Consolidation and Repackaging

- Meaning, Purpose, Value and benefits of Information Consolidation, Levels of Information Analysis, Packaging and Repackaging of Information. Packaging media and formats;
- IA+C Products: Newsletters, State-of-the-art reports, Reviews, Trend reports and Technical digests, and other IA+C products;
- Dissemination Channels: Interpersonal delivery, group delivery, strategic placement, in-house delivery, local depository, mass media, mail, telephone, and computer networks;
- Users of IA+C products, Role of various specialists in Design and Development of Information Consolidation Products;
- Methodology for preparation of IA+C Products, Information Consolidation Unit (ICU).

Unit 5: Information Users

- Users and Non-users : Characteristics, Categories of Information Users;
- Users in Different types of Libraries and Information Centres;
- Users' Study : Types and Techniques;
- Information Needs: Definition, models and different approaches, Information Seeking Behaviour (theories and models);
- User Education: Objectives, Types and Programmes, Information literacy.

SECOND SEMESTER

Course Code: ML-CC-201

Course Title: INFORMATION SYSTEMS, SERVICES AND USERS

Reading List

- Atherton, P. (1977). *Handbook for information systems and services*. Paris: Unesco.
- Barua, B. P. (1992). *National policy on library and information systems and services for India: Perspectives and projections*. Bombay: Popular Prakashan.
- Bawden, D. (1990). *User-oriented evaluation of information systems and services*. Aldershot: Gower.
- Checkland, P., & Holwell, S. (1998). *Information, systems, and information systems: Making sense of the field*. Chichester: Wiley.
- Chowdhury, G. G., & Chowdhury, S. (2011). *Information users and usability in the digital age*. New York: Neal-Schuman Publishers, Inc.
- Choukhande, V. G. (2008). *Information needs and information seeking behaviour: Library and information science research*. Amravati, India: Shivneri Publisher
- Cochrane, P. A. (1977). *Handbook for information systems and services*. Paris: Unesco.
- Fisher, K. E., Erdelez, S., & McKechnie, L. (2005). *Theories of information behavior*. Medford, N.J: Published for the American Society for Information Science and Technology by Information Today.
- Guinchat, C., Menou, M., & Unesco. (1983). *General introduction to the techniques of information and documentation work*. Paris: Unesco.
- Hayes, R. M., & United States. (1974). *The national library network: Its economic rationale & funding*. Washington: National Commission on Libraries and Information Science.
- International Atomic Energy Agency. (1979). *Orientation manual for INIS and AGRIS*. Vienna: International Atomic Energy Agency.
- Kruzas, A. T., & Sullivan, L. V. (1978). *Encyclopedia of information systems and services: A guide to information storage and retrieval services, data base producers and publishers, online vendors*. Detroit: Gale Research Co.
- Kumar, P. S. G. (2004). *Information analysis, repackaging, consolidation & information retrieval: Paper X and XI of UGC model curriculum*. Delhi: B.R. Publishing Corporation.
- Lancaster, F. W., & UNESCO. (1978). *Guidelines for the evaluation of information systems and services*. Paris: Unesco.
- Lancaster, F. W., Smith, L. C., Unesco., & UNISIST (Program). (1983). *Compatibility issues affecting information systems and services*. Paris: United Nations Educational, Scientific and Cultural Organization.
- Lancaster, F. W. (1978). *Toward paperless information systems*. New York: Academic Press.
- Martin, J. (1984). *An information systems manifesto*. Englewood Cliffs, N.J: Prentice-Hall.
- Organisation for Economic Co-operation and Development. (1971). *Inventory of major information systems and services in science and technology*. Paris: OECD.
- 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.
- Singh, Sewa. (2014). *Information analysis, consolidation and repackaging*. New Delhi: Atlantic Publishers & Distributors.
- Society of Management Accountants of Canada. (1993). *Information systems and services management, accountability*. Hamilton, Ont: Society of Management Accountants of Canada.
- UNESCO. (1981). *Guidelines on studies of information users: (pilot version)*. Paris: Unesco.
- UNISIST International Symposium on Information Systems and Services in Ongoing Research in Science., Unesco., & Smithsonian Science Information Exchange. (1976). *UNISIST International Symposium on Information Systems and Services in Ongoing Research in Science: Proceedings*. Budapest: Hungarian Central Technical Library and Documentation Centre : distributed by OMKDK-Technoinform.
- Weisman, H. M. (1972). *Information systems, services, and centers*. New York: Becker and Hayes.

SECOND SEMESTER

Course Code: ML-CC-202

Course Title: DOCUMENT CLASSIFICATION

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	2	4	4	60	40	Nil	Nil	Nil	100	<ul style="list-style-type: none"> To help in understanding the structure and rules of DDC and UDC; To know the precesses related to building class number by using DDC (DDC edition will be decided by department) ; and To know the precesses related to building class number by using UDC (UDC edition will be decided by department)

Unit 1: Introduction

- History and Genesis of DDC;
- Structure and rules of DDC, Steps in practical classification;
- History and Genesis of UDC;
- Structure and rules of UDC, Steps in practical classification;
- Comparative study of DDC and UDC.

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

- Summary;
- Schedule;
- Tables;
- Building class number for simple and compound subjects;
- Building class number for complex subjects.

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

- Relative index;
- 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 (<http://www.oclc.org/content/forms/worldwide/en/webdewey-free-trial.html>);
- Use of DDC for organization of digital resources (CyberDewey, DDC Linked Data – Dewey.info).

Unit 4: Universal Decimal Classification - stage 1 (Edition as decided by department)

- Main tables;
- Auxiliary tables;
- Common auxiliaries;
- Special auxiliaries;
- Facetisation and Synthesis.

Unit 5: Universal Decimal Classification - stage 2 (Edition as decided by department)

- Building class number for simple and compound subjects;
- Building class number for complex subjects;
- Call number and Shelf order;
- Use of UDC in organization of digital resources, UDC consortium (<http://www.udcc.org/>), UDC in Indic Scripts (<http://www.udcc.org/udccsummary/php/index.php>);
- UDC Linked Data (<http://udccdata.info/>).

SECOND SEMESTER

Course Code: ML-CC-202

Course Title: DOCUMENT CLASSIFICATION

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.
- Dewey, M., & Custer, B. A. (1979). *Dewey decimal classification and relative index (19th edition)*. Albany: Forest Press.
- Dewey, M., & Mitchell, J. S. (2011). *Dewey decimal classification and relative index (23rd edition)*. Dublin, Ohio: OCLC Online Computer Library Center, Inc.
- Gopinath, M. A., Mangai, M. A. A. M., Neelameghan, A., & Prasad, K. N. (2004). *Subject classification practice: S. R. Ranganathan's postulational approach ; worked out examples using CC, DDC, and UDC schemes*. New Delhi: Published by Ess Ess Publications for Sarada Ranganathan Endowment for Library Science, Bangalore.
- 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: ML-CC-203

Course Title: DOCUMENT CATALOGUING

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
0	2	4	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To help in understanding the rules of bibliographic description and rendering of access points; To know document cataloguing by using AACR II; and To know document cataloguing by using CCC.

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);
- Entries related with CCC;
- CCC - structure and rules;
- Filling rules related with AACR entries and CCC 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.

Unit 4: CCC 5th 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 5: CCC 5th edition – Rendering of access points

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

SECOND SEMESTER

Course Code: ML-CC-203

Course Title: DOCUMENT CATALOGUING

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.
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- 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.
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- 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.
- Ranganathan, S. R., & Neelameghan, A. (1964). *Classified catalogue code: With additional rules for dictionary catalogue code*. New York: Asia Pub. House.
- 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.
- 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: ML-CC-204

Course Title: CONTENT DESIGNATION AND METADATA ENCODING

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	1	2	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to content designation and content designators; To introduce metadata schemas and encoding rules in organizing digital resources; To explore the practical applications of content designators and metadata schemas in library systems.

Unit 1: Introduction to Content Designation

- 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.);
- Content designation and Logical standards (ISBDs, AACR, FRBR, FRAD, FRSAD etc);
- Content designation standards – Framework standards (CCF, UNIMARC and MARC 21 family of standards etc.).

Unit 2: Bibliographic Data Formats

- Scope, objectives, nature and features of bibliographic data formats;
- Common Communication Formats: CCF/B and UNIMARC;
- MARC 21 bibliographic data format;
- Comparison of CCF, UNIMARC and MARC 21 bibliographic formats;
- Distributed cataloguing (Z 39.50 protocols and services).

Unit 3: Authority Data Formats

- Authority data and Authority lists – what, why, types and use;
- Definition, scope, objectives and use of authority data format;
- Authority lists and their integration with library catalogue;
- MARC 21 authority data format;
- FRAD and FRSAD model.

Unit 4: Generic Metadata Schemas

- Metadata - what, why, types and use;
- Metadata models and Best practice guidelines;
- Generic metadata schema – Dublin Core (Simple and Qualified);
- Metadata encoding – rules and standards;
- RDF, XML and Metadata schemas.

Unit 5: Domain-specific Metadata Schemas

- Need, advantages and use of domain-specific metadata schemas;
- Metadata schemas in different domains;
- Learning object domain – GEMS, IEEE-LOM, CanCore;
- ETD domain – ETD-MS, UKETD, Shodhganga;
- Other domains – Geographical data, Music, Image, News items, Publishing, Science etc.

Unit 6: Practical Components

- CCF/B;
- MARC 21 bibliographic format;
- Authority lists and MARC 21 authority format;
- Dublin Core – Simple & Qualified and Selected domain-specific metadata schemas;
- Use of WINISIS, ISIS-MARC, MARCEdit, Cataloguing editors, and Metadata editors in application of above standards.

SECOND SEMESTER

Course Code: ML-CC-204

Course Title: CONTENT DESIGNATION AND METADATA ENCODING

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.I.: 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.)

THIRD SEMESTER

Course Code: ML-CC-301

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	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to organization, administration and management of libraries and information centres;; To help in understanding library housekeeping , maintenance, planning and finance; To know the management processes related with human resource and quality cycle.

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;
- 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.

THIRD SEMESTER

Course Code: ML-CC-301

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*.

THIRD SEMESTER

Course Code: ML-CC-302

Course Title: INFORMATION 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	60	25	15	Nil	Nil	<ul style="list-style-type: none"> To provide basic concepts related to information retrieval system, subject indexing and indexing languages; To introduce features, components, types and models of digital IR system; To help in understanding information seeking behaviour and IR evaluation methods.

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: ML-CC-302

Course Title: INFORMATION 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*. 2nd ed. London, Facet Publishing.
- Foskett, A. C. *Subject approach to information*. (1996). 5th 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.
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- Jones, Karen Sparck, Ed. (1981). *Information retrieval experiment*. London, Butterworth.
- Lancaster, F. W. (1998). *Indexing and abstracting in theory and practice*. 2nd ed. Champaign Illinois, University of Illinois.
- Lancaster, F. W. (1979). *Information retrieval systems: characteristics, testing, and evaluation*. 2nd 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). 2nd 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: ML-CC-303

Course Title: AUTOMATED LIBRARY SYSTEM

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	0	4	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to library automation including global recommendations; To introduce standards and software related to library automation; and To explore the practical applications of library automation software and standards.

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 of Automated Library System

- Library system and subsystems;
- Procedural model of library automation;
- Software-level requirements for automation workflow;
- Recommendations and best practices;
- Multilingual automated library system.

Unit 3: Components of Automated Library System

- Acquisition subsystem;
- Cataloguing subsystem;
- Circulation subsystem;
- Serials control subsystem;
- User interface subsystem (OPAC, Web-OPAC, OPAC 2.0), Administration;

Unit 4: Standards related to Library Automation

- Library standards – scope, objectives, types and advantages;
- Library automation standards – global and national;
- Open standards – features, application and advantages;
- Interoperability and other essential standards of library automation;
- Trends and future of standards applications.

Unit 5: Software related to Library Automation

- Library automation software – generations and development;
- 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.

Unit 6: Practical Components

- ILSs – installation, configuration and customization;
- ILSs - subsystems/modules – acquisition, cataloguing, circulation, serials control and administration;
- Multilingual data processing and retrieval;
- Web-OPAC and OPAC 2.0;
- Backup, restoration and privilege control.

THIRD SEMESTER

Course Code: ML-CC-303

Course Title: AUTOMATED LIBRARY SYSTEM

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.
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THIRD SEMESTER

Course Code: ML-CC-304

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		
2	0	4	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide nature, features, scopes and limitations of digital information resources; To know the use of text retrieval and support tools in organizing digital resources; To explore the use of content management system, web 2.0 and semantic web technologies in library systems.

Unit 1: Introduction to Digital Information Resources

- Definition, scope, features and advantages of digital information resources;
- Types of digital information resources and traditional vs. digital information resources;
- Management and integration of digital information resources (including open access resources);
- Socio-legal aspects of digital information resources (copyright, DRM, other IPR issues, licensing issues);
- Use of knowledge organization tools in managing digital information resources.

Unit 2: Text Retrieval Engines and Retrieval Support Tools

- Text retrieval engines – scope, features and utilities;
- Retrieval features of selected text retrieval engines – Apache-Solr, Lucene, MGPP and Zebra;
- Application of text retrieval engines in software and services;
- Online thesaurus – development and integration, Ontology-driven retrieval – rules and tools;
- Search techniques – advanced operators and facilities.

Unit 3: Content Management System

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

Unit 4: 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 5: Semantic Web Technologies

- Semantic Web – what, why, nature and features;
- Semantic Web – components, tools and technologies;
- RDF, XML and Semantic Web;
- Ontology as Semantic Web tool, Use of SKOS in knowledge organization;
- Linked Open Data (LOD).

Unit 6: Practical Components

- Markup languages – HTML and XML;
- Text retrieval engines;
- Online thesaurus (TemaTres, MultiTes etc), SKOS and Ontology Editors.
- CMS software – CMS and their integration with ILS, 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: ML-CC-304

Course Title: DIGITAL RESOURCE MANAGEMENT

Reading List

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

THIRD SEMESTER

Course Code: ML-OC-305

Course Title: OPEN KNOWLEDGE SYSTEM

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	1	2	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide concepts, features, scopes and advantages of open access resources; To introduce open access sources, policies and licensing; and To explore the use of open contents in education, research and their integration with library systems.

Unit 1: Introduction to Open Knowledge System

- Scholarly communication and Open knowledge movement (history and landmarks);
- Open Access (OA) resources – nature, features, need and advantages (including citation advantages through article-level metrics);
- Open library system (O³ library) – open contents, open source software and open standards;
- OA declarations – global and national;
- OA initiatives – global and national levels.

Unit 2: Mandate, Policies and Licensing

- OA mandate and policies – need and types;
- OA policy levels – institutional, publishers, and funders;
- OA rights (author addenda) and licensing (Creative Commons and others);
- OA policy framework and legislations;
- OA policy tools – SHERPA/RoMEO, SHERPA/JULIET, OpenDOAR.

Unit 3: Open Access Sources and Services

- OA Pathfinders – DMOZ, DOAB, OATD;
- Gold path of OA – DOAJ and Green path of OA - OpenDOAR, ROAR;
- Open Data, Open Innovations, Open Science;

- OA gateways (SSRN, PloS etc) and OA federation (BASE, CORE etc);
- OA educational resources and OA citation services.

Unit 4: Open Access Interoperability

- OA interoperability – what and why;
- OA interoperability initiatives – metadata-level, content-level, network-level, identifier-level, object-level and usage data-level;
- OA interoperability standards – Z 39.50, SRU/SRW, OAI/PMH, ORE and others;
- Linked Open Data (LOD);
- Trends and future.

Unit 5: Management and Integration of Open Contents

- OA content management - overview;
- OA content management workflow;
- Content management in Gold OA;
- Content management in Green OA;
- Integration of OA contents.

THIRD SEMESTER

Course Code: ML-OC-305

Course Title: OPEN KNOWLEDGE SYSTEM

Reading List

- Bailey, C. W., & Association of Research Libraries. (2005). *Open access bibliography: Liberating scholarly literature with e-prints and open access journals*. Washington, DC: Association of Research Libraries.
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- Chan, L., Kirsop, B., & Arunachalam, S. (2005). *Open access archiving: the fast track to building research capacity in developing countries*. London: Science and development network (SciDevNet)
- Clinic on Library Applications of Data Processing, Sutton, B., Davis, C. H., University of Illinois at Urbana-Champaign., & Committee on Institutional Cooperation. (1992). *Networks, open access, and virtual libraries: implications for the research library*. Urbana-Champaign: Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign.
- Crawford, W. (2011). *Open access: what you need to know now*. Chicago: American Library Association.
- D'Antoni, S., Savage, C., & Unesco. (2009). *Open educational resources: Conversations in cyberspace*. Paris: United Nations Educational, Scientific and Cultural Organization.
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- Fong, Y. S., & Ward, S. M. (2004). *The changing landscape for electronic resources: Content, access, delivery, and legal issues*. Binghamton, NY: Haworth Information Press.
- Godwin, P., & Parker, J. (2012). *Information literacy beyond Library 2.0*. London: Facet Pub.
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- Schmidt, B., & Kuchma, I. (2012). *Implementing open access mandates in Europe: OpenAIRE study on the development of open access repository communities in Europe*. Göttingen: Universitätsverlag Göttingen.
- Suber, P. (2012). *Open access*. Cambridge, Mass: MIT Press.
- Swan, A., & Chan, L. (2009). *Open access scholarly information sourcebook: practical steps for implementing open access*. S.l.: Openoasis.org.
- Swan, A., & UNESCO. (2012). *Policy guidelines for the development and promotion of open access*. Paris: United Nations Educational, Scientific, and Cultural Organization.
- UNESCO. (2013). *An open door to UNESCO's knowledge*.
- UNESCO. (2006). *UNESCO open access resource directory*. Paris: United Nations Educational Scientific and Cultural Organization.
- Willinsky, J. (2006). *The access principle: the case for open access to research and scholarship*. Cambridge, Mass: MIT Press.

FOURTH SEMESTER

Course Code: ML-CC-401

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	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To support in understanding concepts related to research methods in general; To introduce research support tools and research communication process; and To help in identifying research information sources in LIS and to explore the trends of LIS research in India and abroad.

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: Research communication

- Scope, structure, functions and channels of research communication;
- Research reporting;
- Citation management in research – styles, standards and tools;
- Research support tools – on-line survey tools, research profile, research guides, plagiarism checker;
- Research communication channels (Research-in-progress, ETD repositories, Institutional repositories, Subject repositories).

Unit 5: LIS Research

- History and Genesis; LIS research in India;
- Information sources on LIS research – International (Bibliographical tools like Proquest etc, Full-text – ETD repositories like NDLTD, SILS);
- Information sources on LIS research – National (Bibliographical tools – IndCat, Full-text – ETD repositories like Shodhganga, Vidyanidi);
- Open Access tools and services (OATD etc.);
- Trend analysis.

FOURTH SEMESTER

Course Code: ML-CC-401

Course Title: RESEARCH METHODOLOGY

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.
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- 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.
- 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.
- 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.

FOURTH SEMESTER

Course Code: ML-CC-402

Course Title: DIGITAL LIBRARY SYSTEM

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
2	0	4	4	60	Nil	Nil	40	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to digital library systems; To introduce standards and software related to digital library systems; and To explore the applications of software and standards in developing digital library systems.

Unit 1: Historical and Theoretical Foundations

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

Unit 2: Organization of Digital Objects

- Metadata encoding– generic and domain-specific schemas (Including DCMES, GILS, AGLS, ONIX, TEI, IEEE LOM, GEMS, SeamlessUK etc.);
- Metadata encoding standards - Markup languages (HTML, XHTML, XML), Encoding standards (W3C and IETF standards) and Resource Description Framework (RDF);
- Resource identifiers (Naming services) – URN, URI, CNRI's handle, PURL, DOI;
- Subject access systems – standards and tools;
- Crosswalks and Interoperability - Crosswalks of metadata schemas and Interoperability initiatives and standards (OAI/PMH, Z 39.50, ZING, SRU/W; ORE etc).

Unit 3: Architecture, Information Retrieval and User interfaces

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

library systems;

- User interfaces of digital library systems – models, frameworks, design issues, principles, standards and study of user interfaces of selected digital library systems.

Unit 4: Design and Development of Digital Library Systems

- Digitization and collection development (hardware, software, process, file formats, issues, policies and principles, collection management);
- Standards related to digital library system;
- Software related to digital library system – features and selection parameters;
- Centralized processing and distributed access software (WWWISIS, GSDL etc);
- Distributed processing and distributed access software (Eprint, DSpace etc).

Unit 5: Federated and Multilingual Digital Library Systems

- Federated search service – metadata-level and content-level harvesting;
- Metadata harvesting – standards, process and software;
- Multi-lingual digital library – Indic scripts, standards, tools;
- Web-scale resource discovery, Semantic web and digital libraries;
- Trends and future.

Unit 6: Practical Components

- DL type - Centralized processing and distributed access – installation, configuration and collection development;
- DL type - Distributed processing and distributed access – installation, configuration and collection development;
- Metadata harvesting – installation, configuration and collection development;
- Web-scale resource discovery software – installation, configuration and collection development;
- Indic scripts based digital library.

FOURTH SEMESTER

Course Code: ML-CC-402

Course Title: DIGITAL LIBRARY SYSTEM

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: ML-CC-403 A (Elective)

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		
3	1	0	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to community information system and services; To introduce resources, standards and software related to CIS; and To explore the applications of software and standards in developing digital community information system and services.

Unit 1: Fundamentals of Community Information Services (CIS)

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

Unit 2: Community Information Resources

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

Unit 3: Local Studies

- Definition and Scope, Types and kinds of local studies materials;
- Local studies — Collection and Organization in libraries;

- Government agencies, local organizations including the calendar of local events;
- Area Profile — Meaning, Structure and compilation;
- Local history, Local heritage and Oral history.

Unit 4: Community Information Resources: Organization and Access

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

Unit 5: 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: ML-CC-403 A (Elective)

Course Title: COMMUNITY INFORMATION SYSTEM

Reading List

- Ainley, P. (1980). *Basics of community information: An action handbook for librarians*. London: Association of Assistant Librarians.
- American Library Association. (1966). *Minimum standards for public library systems*. Chicago: ALA.
- Bunch, A. (1982). *Community information services: the origin, scope and development*. London: Clive Bingley.
- Bunch, A. (1993). *The basics of community information work*. London: Library Association.
- Coleman (P). (1986). *Community information policy and provisions. ASLIB Proceedings, 38 (9), 305-316*.
- Croneberger, R., Kapecky, M., Luck, C., & Appalachian Adult Education Center (Morehead State University). (1975). *The library as a community information and referral center*. Morehead, Ky: Appalachian Adult Education Center, Morehead State University.
- Durrance, J. C., & Fisher, K. E. (2002). *Online community information: Creating a nexus at your library*. Chicago, Ill: American Library Association.
- Durrance, J. C., & Schneider, K. G. (1996). Public library community information activities: Precursors of community networking partnerships. *Ann Arbor: School of Information, University of Michigan*. Retrieved March, 5, 1997. Available <<http://www.si.umich.edu>>
- Durrance, J.C. (1986). *Community information services: an innovation at the beginning of its second decade. In Advances in librarianship, (Vol. V-13)*. Orlando: Academic Press.
- Keehan, A. L. (1980). *Establishing a local community information service: Part 1*. Library Board of Western Australia.
- LAWS Project Team: Integrated public sector vocabulary. (2005). Retrieved from <http://www.esd.org.uk/standards/ipsv/I.00/ipsv.doc>
- Library Association. (1980). *Community information: what libraries can do : a consultative document*. London: Library Association.
- Library of Congress: *MARC 21 concise format for community information*. (2006). Washington: Library of Congress.
- Matthew, H. (1988). *Community information: A manual for beginners*. Newcastle-under-Lyme: AAL Pub.
- Mukhopadhyay, P. (2004). Community information services through web and CDROM: An open source framework for public libraries in India. Retrieved March 2014 from <http://www.drct.isibang.ac.in/xmlui/handle/1849/185>
- Mukhopadhyay, P. (2006). Public Library based Web-enabled Community Information System for Rural Development in India: Designing A FLOSS based Multilingual Prototype. Retrieved March 2014 from <https://drct.isibang.ac.in/handle/1849/408> (XXII IASLIC National Seminar. IIT, Roorkee, 2006. pp. 261-268).
- Mukhopadhyay, P. (2011). *Digital community information system: a framework for India*. Germany: LAP Lambert Academic Publishing.
- Neelameghan, A. (2006). E-communities, community knowledge and knowledge management. *KnowGenesis, International Journal of Technical Communication, 1(2), 21-27*.
- Pantry, S. (1999). *Building community information networks: Strategies and experiences*. London: Library Association Pub.
- Public Library Association. (1989). *Guidelines for establishing community information and referral services in public libraries: Including a selective guide to the literature of community information and referral*. Chicago: American Library Association, Public Library Association.
- Rowlat, M. (2002). A new profile for citizens' (or community) information? *Ariadne, 19, 1-10*.
- Sarkhel, J. K. (2000). A generalized framework for the design and development of an area profile. *Vidyasagar University Journal of Library and Information Science, 5; 2000; pp. 3 - 16*.
- Turick, D. (1978). *Community information services in libraries*. New York: Library Journal.

FOURTH SEMESTER

Course Code: ML-CC-403 B (Elective)

Course Title: INFORMETRICS

Credit Structure				Marks Distribution					Objectives	
Lecture	Tutorial	Practice	Total Credit	Semester Examination	Internal Assessment				Total Marks	
					CE	PRJ	PRC	Viva		
3	1	0	4	60	25	15	Nil	Nil	100	<ul style="list-style-type: none"> To provide basic concepts related to statistical application in LIS; To help in understanding laws, indicators, techniques, tools and services related with bibliometrics, informetrics, webometrics and altmetrics; and To explore the future applications of informetrics.

Unit 1: 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 2: Basic Principles of Statistical Inference

- Estimation and testing of hypothesis;
- Null and alternative hypothesis;
- Distributions;
- Level of significance and critical region; One tailed and two tailed tests;
- Errors in testing hypothesis; Chi-Square Test.

Unit 3: Introduction to Informetrics

- Librametry, Bibliometrics, Scientometrics, Informetrics – Meaning, Scope and features;
- Cybermetrics and Webometrics – Meaning, scope, features;
- Laws of Bibliometrics, Application of Bibliometric laws in Web;

- Hyperlinks Vs. Citations (Sitations vs. Citations);
- Altmetrics and Article -Level Metrics.

Unit 4: Indicators, Tools and Techniques

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

Unit 5: Applications and Trends

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

FOURTH SEMESTER

Course Code: ML-CC-403 B (Elective)

Course Title: INFORMETRICS

Reading List

- Borgman, C. L. (1990). *Scholarly communication and bibliometrics*. Newbury Park: Sage Publications.
- Braun, T. (2007). *The impact factor of scientific and scholarly journals: Its use and misuse in research evaluation : a selection of papers reprinted mainly from the journal Scientometrics*. Budapest] Hungary: Akadémiai Kiadó.
- Cronin, B., & In Sugimoto, C. R. (2014). *Beyond bibliometrics: harnessing multidimensional indicators of scholarly impact*.
- De, B. N. (2009). *Bibliometrics and citation analysis: from the Science citation index to cybermetrics*. Lanham, Md: Scarecrow 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.
- Eom, S. B., & IGI Global. (2009). *Author cocitation analysis: Quantitative methods for mapping the intellectual structure of an academic discipline*. Hershey, Pa: IGI Global (701 E. Chocolate Avenue, Hershey, Pennsylvania, 17033, USA.
- Glazier, Jack D, & Hall, Peter M. (1992). *Qualitative research in information management*. Englewood, CO: Libraries Unlimited.
- Hjerpe, R. (1978). *An outline of bibliometrics and citation analysis*. Stockholm: Royal Institute of Technology Library.
- Ingwersen, P. (2012). *Scientometric indicators and webometrics -- and the poly representation principle information retrieval*. New Delhi: Ess Ess Publications.
- Jalal, Samir Kumar, Biswas, S. C., & Mukhopadhyay, P. (2009). Bibliometrics to webometrics. *Information Studies*, 15(1), 3–20.
- Jalal, Samir Kumar, Biswas, S. C., & Mukhopadhyay, P. (2010). Web presence of selected Asian countries: A Webometric study. *COLLNET JOURNAL OF SCIENTOMETRICS AND INFORMATION MANAGEMENT*.
- Mukhopadhyay, Parthasarathi. (2002). The calculation of web impact factors for educational institutes of India: a webometric study. *Proceedings of the National Seminar on Information Management in Electronic Libraries (ImEL), Kharagpur, 2002*. Indian Institute of Technology, Kharagpur 2002. (pp. 531–539).
- Penny Andrews, Leeds Metropolitan University, Penny Andrews, & Leeds Metropolitan University. (2013). *Amplifying your research and academic profile – a researcher’s guide to social media and altmetrics*. Penny Andrews.
- Potter, W. G. (1981). *Bibliometrics*. Champaign, Ill: University of Illinois Graduate School of Library and Information Science.
- 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.
- Tague-Sutcliffe, J. (1992). *Informetrics*. New York: Pergamon Press.
- Tague-Sutcliffe, J. (January 01, 1992). An Introduction to Informetrics. *Information Processing and Management*, 28, 1, 1-3.
- Tattersall, A. (2014). *Altmetrics: A practical guide for librarians, researchers and academics*. London: Facet Publ.
- Thelwall, M. (2009). *Introduction to webometrics: Quantitative web research for the social sciences*. San Rafael: Morgan & Claypool.
- Wilson, Virginia; University of Saskatchewan. (2013). *Research methods: altmetrics*. University of Alberta Learning Services.

FOURTH SEMESTER

Course Code: ML-CC-404

Course Title: GUIDED RESEARCH PROJECT

Credit Structure				Marks Distribution			Objectives
Lecture	Tutorial	Practice	Total Credit	Research Report	Viva / Presentation	Total Marks	<ul style="list-style-type: none">• 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• To develop research skills and independent thinking.
0	4	0	4	60 (Text)	40	100	