Vidyasagar University

Department of Library and Information Science

Midnapore – 721102, West Bengal

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

SYLLABUS
(Choice Based Credit System)

WITH EFFECT FROM 2018-2019 ACADEMIC SESSION

Approved in the PGBOS meeting held on 29.05.2018

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

One Academic Year Two Semester Programme Choice Based Credit System
(WITH EFFECT FROM 2018-2019 ACADEMIC SESSION)

1. Title and Commencement

- The programme shall be called the full-time Master of Library and Information Science (M.Lib.I. Sc) programme under the Faculty of Arts, Commerce, etc.

- This syllabus shall come into force from the academic session 2018-2019.

2. PROGRAMME OUTCOME:

- The basic objective is to master the students in the advances of professional skills for information / knowledge management, so that they serve the society through an institution of library or information centre and prepare themselves for pursuing research in the subject.

- To give the students an understanding of the advancement of various principles of Library and Information Science and to enable them to understand, appreciate and develop professionalism to work in contemporary “Information Age” and to carry the subject forward.

- To acquaint the students with the development of the Universe of Knowledge and methods of its organization in a library/information system.

- To train students in the techniques of Information Management and equip them with skills for applying Information Communication Technologies (ICT) in libraries and information centres.

- To make students fully aware of various sources of information and train them in techniques of dissemination of information in the context of different user groups and finally to ensure the maximization in utilization of graphic records by the specialists in different disciplines for the development of other subjects.

3. Duration and Semester System

- The duration of the programme leading to the Degree of Master of Library and Information Science (M.Lib.I.Sc) shall be one academic year. A student must complete the programme within one year from the date of admission to the programme..

- The academic year shall be divided into two semesters.

4. Academic Calendar

Academic Calendar will be as approved by the University.

5. Eligibility & Admission

- Admission to the Master of Library and Information Science programme leading to Master of Library and Information Science degree shall be made through Entrance Test conducted by the University. The minimum qualification for appearing in the Entrance Test will be:

    - Bachelor's degree with Honours/Major (in any discipline) at 10+2+3 level and Bachelor of Library and Information Science from the University, or any other university, accepted as equivalent thereto by the Statutory Bodies of the University/norms prescribed by the Regulatory Bodies as applicable subject to such conditions as may be prescribed thereof.

- Reservation rules shall be as prescribed by the State Government and notified by the authorities concerned from time to time.
- Foreign nationals either residing in India or abroad or Indian nationals residing abroad may be admitted to Master of Library and Information Science programme according to the policy guidelines laid down by the Government of India/University Executive Council from time to time.

6. **Intake:** Sixteen (16).

7. **Programme Structure**

- M.Lib.I.Sc curricula consist of 120 credits distributed in 20 courses in 1 academic year divided into 2 semesters.

- 114 credits are meant for Core Courses and required to be completed/earned by each student.

- 6 credits are assigned to Open Courses. Students of M.Lib.I.Sc course may opt for one Open Course either from open courses offered by this Department or from open courses offered by any other department of the University.

- Students from other departments of this University may opt for Open Courses offered by this Department.

- M.Lib.I. Sc course has a total 1000 marks (50 x 19 Core Courses + 50 x 1 Open Courses)

- Internal Assessment marks of a course are either through Continuous Evaluation (CE) or Practical (PRC) or Project (PRJ) or a combination of these elements as decided by the Course Teacher concerned.

- If internal assessment is based on CE, then it will be a combination of Test and/or Term paper and/or Seminar presentation.

8. Credit pattern explanation

L	T	P	
4.5	1.5	0	pattern: (4.5 X 12 wks) = 54 hrs = 4.5 credits + **(**1.5 X 12 wks) = 18 hrs = 1.5 credit + 0 > Altogether 6 credits
3	0	3	pattern: (3 X 12 wks) = 36 hrs = 3 credits + 0 + (3 X 12 wks) = 36 hrs = 3 credits > Altogether 6 credits
2.5	1	2.5	pattern: (2.5 X 12 wks) = 30 hrs = 2.5 credits + (1 X 12 wks) = 12 hrs = 1 credit + (2.5 X 12 wks) = 30 hrs = 2.5 credit > Altogether 6 credits
0	2	4	pattern: 0 + (2 X 12 wks) = 24 hrs = 2 credits + (4 X 12 wks) = 48 hrs = 4 credits > Altogether 6 credits
0	6	0	pattern: 0 + (6 X 12 wks) = 72 hrs = 6 credits + 0 > Altogether 6 credits

Programme 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
SEMESTER I	MLI-101	Information and Communication	4.5	1.5		6	40	10	50
	MLI-102	Knowledge Organization (Theory)	4.5	1.5		6	40	10	50
	MLI-103	Advanced Resource Description	2.5	1	2.5	6	40	10	50
	MLI-104	Information Sources, Products and Services	4.5	1.5		6	40	10	50
	MLI-105	Information Retrieval – I	4.5	1.5		6	40	10	50
	MLI-106	Management of Information Systems and Services	4.5	1.5		6	40	10	50
	MLI-107	Information and Communication Technology for LIS (Theory) – I	2.5	1	2.5	6	40	10	50
	MLI-108	Application of Information and Communication Technology in LIS (Practice) – I		2	4	6	40	10	50
	MLI-109	Research Methodology	4.5	1.5		6	40	10	50
	MLI-110	Technical Writing	2.5	1	2.5	6	40	10	50

Sem	Course Code	Course Title	Credit Pattern	Credit Value	Marks Distribution	Credit Value			
			Lecture (L)	Tutorial (T)	Practice (P)		Semester Examination	Internal Assessment	Total Marks
S E M E S T E R II	MLI-201	Information and Society	4.5	1.5		6	40	10	50
	MLI-202	Knowledge Organisation (Practice)		2	4	6	40	10	50
	MLI-203	Resource Description of non-book materials (Practice)		2	4	6	40	10	50
	MLI-204	Open Knowledge System and Scholarly Evaluation	4.5	1.5		6	40	10	50
	MLI-205	Information Retrieval – II	4.5	1.5		6	40	10	50
	MLI-206	Information and Communication Technology for LIS (Theory) – II	4.5	1.5		6	40	10	50
	MLI-207	Application of Information and Communication Technology in LIS (Practice) - II		2	4	6	40	10	50
	MLI-208	Quantitative Techniques in Research		2	4	6	40	10	50
	MLI-209	Studies of Academic Metrics		2	4	6	40	10	50
	MLI-210	Dissertation	1.5	4.5		6	40 (Report)	10 (Viva-voce)	50

Course Contents Structure				Marks distribution		
Sem	Course Code	Course Title	Course Summary	Semester Exam	Internal Assessment	Total Marks
I	MLI-101	Information and Communication	Unit 1: Information: Its Nature, Characteristics and Scope	40	10	50
			Unit 2: Information science: Property and scope			
			Unit 3: Information and Its Communication			
			Unit 4: Information Generation and Transfer			

SEMESTER I			Unit 5: Class Test / Project / Seminar Presentation			
	MLI-102	Knowledge Organization (Theory)	Unit 1 : Theories of Library Classification Unit 2 : Classification of Subjects Unit 3 : Classification and the Internet Unit 4 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-103	Advanced Resource Description	Unit 1 : Introduction to Content Designation Unit 2 : Bibliographic Data Formats Unit 3 : Authority Data Formats Unit 4 : Generic and Domain-specific Metadata Schemes Unit 5 : Cataloguing of Non-print Materials Unit 6 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-104	Information Sources, Products and Services	Unit 1 : Electronic Information Sources Unit 2 : Information Products and Services Unit 3 : Information Institutions and Systems Unit 4 : Library Networks and Consortia Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-105	Information Retrieval – I	Unit 1 : Basic Concepts of Information Storage and Retrieval Systems Unit 2 : Indexing Languages / Controlled Vocabulary Unit 3 : Indexing Systems and Techniques Unit 4 : Users and Information Retrieval Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-106	Management of Information Systems and Services	Unit 1 : Management Thought and Planning of Information System Unit 2 : Management Techniques Unit 3 : Recent Trends in Management Unit 4 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-107	Information and Communication Technology for LIS (Theory) - I	Unit 1 : Computer Operating System Unit 2 : High-level Programming Languages Unit 3 : Database Management System Unit 4 : Computer Communication System Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-108	Application of Information and	Unit 1 : Linux User Level Tasks Unit 2 : Linux System Administration Tasks	40	10	50

		Communication Technology in LIS (Practice) - II	Unit 3 : Advance Level HTML and DHTML (Form, Frames, CSS and Java Scripts) Unit 4 : C Programming Language Unit 5 : PHP or ASP or PERL Scripting Language Unit 6 : Class Test / Project / Seminar Presentation / Viva-Voce			
	MLI-109	Research Methodology	Unit 1 : Research Methods Unit 2 : Descriptive Statistics for collection and presentation of data Unit 3 : Sampling and Statistical Inference Unit 4 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-110	Technical Writing	Unit 1 : Fundamentals of Technical Writing Unit 2 : Documentation Process Unit 3 : Technical Writing Process Unit 4 : Plagiarism Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-201	Information and Society	Unit 1 : Information Society Unit 2 : Knowledge management Unit 3 : Economics of Information Unit 4 : Marketing of Information Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
SEMESTER II	MLI-202	Knowledge Organisation (Practice)	Unit 1 : Colon Classification(Ed. - 7) Practice Unit 2 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-203	Resource Description of non-book materials (Practice)	Unit 1 : Cataloguing of Non-book Materials by AACR 2R and MARC 21 Unit 2 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-204	Open Knowledge System and Scholarly Evaluation	Unit 1 : Introduction to Open Access Unit 2 : Way to Open Access Unit 3 : Networks and Organizations Promoting Open Access Unit 4 : Open Access Mandates and Policies Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-205	Information Retrieval – II	Unit 1 : Inhouse, CD-ROM and Online IR Unit 2 : Search Strategy Unit 3 : Evaluation of IR System Unit 4 : Trends in IR Unit 5 : Class Test / Project / Seminar Presentation	40	10	50
	MLI-206	Information and	Unit 1 : Automated Library System	40	10	50

		Communication Technology for LIS (Theory) - II	Unit 2 : Digital Library System			
			Unit 3 : Multilingual Library System and IR System			
			Unit 4 : Field Study			
			Unit 5 : Class Test / Project / Seminar Presentation			
	MLI-207	Application of Information and Communication Technology in LIS (Practice) - II	Unit 1 : MySQL and / or PostGreSQL RDBMS	40	10	50
			Unit 2 : WWWISIS and / or ISIS 3W for Web Accessibility of ISO-2709 supported Bibliographic Databases			
			Unit 3 : Library Automation Software Managerial Level Tasks (SOUL / KOHA / WEBLIS)			
			Unit 4 : Digital Library Software GSDL / DSpace / E-Print Archive			
			Unit 5 : Unicode based Multilingual Automated and Digital Library System			
			Unit 6 : Class Test / Project / Seminar Presentation /Viva-Voce			
	MLI-208	Quantitative Techniques in Research	Unit 1 : Historical and Theoretical Foundation	40	10	50
			Unit 2 : Organization of Digital Objects			
			Unit 3 : Architecture, Information Retrieval and User Interfaces			
			Unit 4 : Class Test / Project / Seminar Presentation			
	MLI-209	Studies of Academic Metrics	Unit 1 : Introduction to Research Evaluation Metrics and Related Indicators	40	10	50
			Unit 2 : Performance Measurement of R & D in S & T			
			Unit 3 : Article and Author-Level Measurements			
			Unit 4 : Growth of Literature and Measurement of Scientific Productivity			
			Unit 5: Class Test / Project / Seminar Presentation			
	MLI-210	Dissertation	Unit 1: Evaluation of Dissertation including Presentation in Seminar	40	10	50
			Unit 2: Viva-voce			

SEMESTER-I

Course Code: MLI-101
Course Title: Information and Communication

Course Outcome:

A. Identification of Information Life Cycle for cognition, Knowledge and Wisdom.

B. Comprehension of how information is communicated and its hindrances.

C. How information changes the societal developments.

Unit – 1 : Information: Nature, Characteristics and Scope

- Information : Attributes, Kinds, Use, Nature and Characteristics ;
- Knowledge : Nature and Characteristics, Categories, Sources of knowledge, Growth and development ;
- Process of Cognition : different views and methodology including Spiral of Scientific Method and Dialectical Materialistic Approach ;
- Conceptual relation between data, information, knowledge, wisdom and related concepts ;

Unit – 2 : Information Science: Property and Scope

- Information and knowledge as object of study in various subjects and disciplines ;
- Information Science : Origin and development, scope and coverage, relationship with other disciplines and professions;
- Information science from system perspectives - Introduction to systems theory, Churchman systems model, Debon's EATPUT model and Component oriented models.

Unit – 3 : Information and its Communication

- Historical development ;
- Types of communication: Verbal and nonverbal, Formal and informal, Communication channels and Models of communication ;
- Barriers to communication and remedial propositions ;
- Role of libraries in communication process

Unit – 4 : Information Generation and Transfer

- Information transfer process : Generation to utilization (Information eco-system) ;
- Information theory : Average information content of symbols in long independent and dependent sequences;
- Entropy; measurement of information.

Unit – 5: Class Test / Project / Seminar Presentation

Reading List

1. Bawden, D. & Robinson, L. (2012). *Foundations of information science*. London: Facet Publishing.
2. Benjamine, J.B. (1986). *Communication: concept and contexts.* New York: Harper & Row.
3. Bhattacharyya, G. (1978). *Information science: A unified view through a systems approach*. Kolkata: IASLIC.
4. Debons, A. & Larson, Arvid G., Ed. (1983). *Information science in action: system design*. 2 vols. Boston: Martinus Nijhoff Publishers.
5. Gilchrist, A. Ed. (2009). *Information science in transition*. London: Facet Publishing.
6. Kent, A., & HALL, C. M. (1998). *Encyclopedia of Library and Information Science*. CRC Press LLC, New York.
7. McGarry, K. J. (1981). *The changing concept of information.* London: Bingley.
8. Mukherjee, B.(2012). *Information, Communication and Society*. New Delhi: Ess Ess Publications
9. Singh, A.P. and Yuvaraj, M (2013). *Information: Communication and Society.* New Delhi: Ess Ess Publications.
10. Vickery B. C. & Vickery A. (1987). *Information science in theory and practice.* London: Butterworth.

Course Code: MLI-102

Course Title: Knowledge Organization (Theory)

Course Outcome:

A. Theoretical foundation to become a classificationist.

B. Anatomical study of classification schemes.

C. Classification Schemes for computer aided information retrieval.

Unit – 1 : Theories of Library Classification

- Principles and postulates: Aristotle, Bacon, Harris, Richardson, Sayers, Brown, Bliss, Ranganathan and Vickery;
- Absolute Syntax;
- Theory of Integrative Level ;
- Ontology : As a basis for knowledge organisation;
- Systems approach to knowledge organisation.

Unit – 2 : Classification of Subjects

- Classification in an information system : Complexity of subjects, comparison of hierarchical and faceted classification schemes;
- Features of classification schemes : Literary warrant, main class order, generalia class, citation order and schedule order;
- General vs. Special classification schemes ;
- Design and construction of depth classification schedule.
- Comparative Study of Components and features of DDC, UDC and CC.

Unit – 3 : Classification and the Internet

- Use of Classification by search engines;
- Use of conventional classification schemes;
- Use of Thesauri and authority lists;
- Classification of electronic documents;
- Classification Scheme as aid to searching;

Unit – 4 : Class Test / Project / Seminar Presentation

Reading List

1. Broughton, V. (2004). *Essential classification*. London: Facet Publishing.
2. Batty, C. D. (1966). *An Introduction to Colon Classification*. London: Bingley.
3. Chan, L. M. (1985). *Cataloguing and classification: an introduction.* New York: McGraw Hill.
4. Dhyani, P. (1983). *Classification schemes and Indian libraries*. New Delhi: Metropolitan.
5. Dhyani, P. (1998). *Library classification: theory and principles*. New Delhi: Wishwa Prakashan.
6. F.I.D. (1993). *Universal Decimal Classification.* IME. London: BSI. Forest Press. (2002). *WebDewey*. Dublin, Ohio: OCLC Forest Press.
7. Foskett, D. J. (1974). *Classification and indexing in social sciences.* London: Aslib.
8. Foskett, A. C. (1996). *The subject approach to information.* 5th ed. London: Clive Bingley.

9. Halgamuge, S. K., & Wang, L. (2005). *Classification and clustering for knowledge discovery*. Berlin: Springer.

10. Husain, S. (2004). *Library classification: facets and analysis*. Delhi: B. R. Publishing.

11. Kaula, P. N. (1985). *A Treatise on Colon Classification*. New Delhi: Sterling.

12. Krishan Kumar. (1980). *Theory of classification*. New Delhi: Vikas.

13. 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

14. Maltby, A. (1975). *Sayers' manual of classification for librarians.* 5th ed. London: Andre Deutsch

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

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

17. Ranganathan, S. R. (1967). *A descriptive account of the Colon Classification.* Bombay: Asia Publishing.

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

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

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

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

22. Rowley, J.E. & Farrow, J. (2000). *Organizing knowledge: an introduction to managing access to information*. 3rd ed. Aldershot: Gower.

23. Satija, M. P. (2011). *A guide to the theory and practice of Colon Classification*. New Delhi: Ess Ess Publications.

24. Sood, S. P. (1998). *Universe of knowledge and universe of subjects*. Jaipur: G. Star Printers.

25. Taylor, A. G. (2007). *Introduction to cataloguing and classification*.10th ed. New Delhi: Atlantic.

Course Code: MLI-103

Course Title: Advanced Resource Description

Course Outcome:

A. Theoretical foundation on standards for information interchange and resource description.

B. In-depth knowledge on variety of bibliographic data formats.

C. Introduction to Metadata Schema, Metadata Harvesting etc.

Unit – 1 : Introduction to Content Designation

- 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, MARC-21)

Unit – 2 : Bibliographic Data Formats

- Evolution of Principles for Bibliographic Description;
- Development of Codes for Bibliographic Record;
- Standards and Formats for Bibliographic Record
- ISBD, ISO 2709, CCF, UNIMARC, MARC 21, etc.
- Comparison of CCF, UNIMARC and MARC-21.
- Distributed Cataloguing (Z 39.50 protocols and services)

Unit – 3: Authority Data Formats

- Scope, objectives and use of authority data formats
- Interaction of Authority list with library catalogue
- MARC-21 Authority Data Format
- FRAD and FRSAD model

Unit – 4 : Generic and Domain-specific Metadata Schemas

- Metadata: Use, functions, models and best practice guidelines
- Generic Metadata Schema: Dublin Core
- Metadata Schema using RDF and XML
- Learning Object Domains: GEMS, IEEE-LOM, CanCore
- ETD Domain: ETD-MS, UKETD, Shodhganga
- Other domains: Geographical Data, Science Data, Music, Image, News Items, Publishing etc.

Unit – 5: Class Test / Project / Seminar Presentation

Reading List

1. Bean, C.A.., & Green , R. (2001). *Relationships in organization of knowledge*. London: Kluwer.
2. Bowman, J. H. (2003). *Essential cataloguing. London: Facet Publishing*.
3. Chan, L. M. (1994). Cataloging and classification: an introduction. New York: McGraw-Hill.

4. Chapman ,Liz. (1984). *How to catalogue: a practical handbook*. London: Clive Bingley.

5. Delsey ,T. (1999). *The logical structure of AACR – Part I & Part II*. Retrieved from http://www.nlc-bnc.ca/jsc/aacrdel.html

6. Heaney, M. (1995). *Object-oriented cataloguing. Information Technology and Libraries*, 14(3), 135–153.

7. Horner, J. (1975*). Cataloguing*. London: AAL.

8. Hunter, E. J. (1986). *Computerised cataloguing*. London: Clive Bingley. Hunter, E. J., & Blackwell, K.G.B. (1983). *Cataloguing*. London: Clive Bingley

9. IFLA. (1998). *IFLA: Functional requirements for bibliographic records: final report*. Munchen: K.G. Saur.

10. Le, B. P. (2005). *Functional requirements for bibliographic records (FRBR): hype or cure-all?* Binghamton, NY: Haworth Information Press.

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

12. Yee, M.M. & Layne,, S.S. (1998). *Improving online public access catalogue*. Chicago: ALA.

13. Zeng, M. L., & Žumer, M. (January 01, 2010). *Introducing FRSAD and mapping it with SKOS and other models.* International cataloguing and bibliographic control, 39, 3, 53-56.

14. Zeng, M. L., Žumer, M., Salaba, A., & IFLA Working Group on the Functional Requirements for Subject Authority Records (FRSAR). (2011). Functional *requirements for subject authority data (FRSAD): a conceptual* model. Berlin: De Gruyter Saur.

Course Code: MLI-104

Course Title: Information Sources, Products and Services

Course Outcome:

A. Comprehension of Electronic Information Resources.

B. Theoretical foundation on design issues of Information products.

C. Understanding of the concept ‘Consortia’ and knowledge on Library Networking

Unit – 1 : Electronic Information Sources

- Traditional and classical vs. electronic information sources;
- Categories, characteristics and utility of electronic sources of information;

- Online and off-line bibliographic databases (Reference, Referral and Source databases);
- E-journals, e-journal gateways and electronic reference tools;
- Discussion forums, ListServs, bulletin boards, subject directories, subject gateways, institutional repositories and digital libraries.

Unit – 2 : Information Products and Services

- Information analysis and consolidation products: Types and characteristics;
- IAC methodology;
- Utility and designing of e-alerting services (e-CAS & e-SDI);
- ICT enabled information services (user services, MIS support services, web based services, etc.).;
- Information products and services relating to special library and information systems (Corporate library system, media and communication library system, industrial library system, medical library system).

Unit – 3 : Information Institutions and Systems

- Libraries and information centers: Types and their organization;
- Data Centres and Referral Centers;
- Science data networking systems in India: overview;
- Information systems: Structure, functions, objectives, features and system design;
- Global information systems (INIS, AGRIS, MEDLARS etc.): Structure and services;
- Indian information systems (in the fields of science & technology, biotechnology, medical science, agricultural science, environmental science, statistics, humanities and social science);
- Designing of information system.

Unit – 4: Library Networks and Consortia

- Resource sharing and library networking: Need, structure and management;
- Global library networks (OCLC, RLIN, WLN, BLAISE, etc): Structure and services;
- Indian library networks and their services (INFLIBNET, DELNET, etc.): Structure and services;
- Library consortia: Scope, need, objectives, functions, features and services;
- Global and Indian library consortia initiatives (ICOLC, SPARC, INDEST, UGC-Infonet, FORSA etc.): Structure and services.
- Social networking (Facebook, Twitter, LinkedIn etc.) and its application in library and information systems and services
- Collaborative and international librarianship: overview

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Cassell, K. A., & Hiremath, U. (2013). *Reference and information services: An introduction*. London: Facet Publishing

2. Chatterjee, A (2013). *Elements of information analysis, consolidation and repackaging (IACR)*; Kolkata: Prova Prakashani

3. Chatterjee, A. (2017). *Elements of Information Organization and Dissemination*. Oxford: Chandos Publishing

4. Cheney, F. N. (1975). *Fundamental reference sources*. Chicago: American Library Association.

5. Crawford, J. (2006). *The Culture of evaluation in library and information services*. Burlington: Elsevier Science.

6. Crawford, J., & Aslib. (2000). *Evaluation of library and information services*. London: Aslib

7. Farmer, L. S. J. (2007). *The human side of reference and information services in academic libraries: Adding value in the digital world*. Oxford: Chandos

8. Foskett, D. J. (1994*). Information service in libraries*. New Delhi: Anmol Publications.

9. Guha, B. (1983). *Documentation and information: services, techniques and systems*. Calcutta: World Press.

10. Katz, B. (2002*). Introduction to reference work. Boston: McGraw-Hill*. Katz, W. A., & Tarr, A. (1978). Reference and information services: a reader.

11. Krishan Kumar (1996). *Reference service*. New Delhi: Vikas Pub. House. Lankes, R. D., & Nast, P. (2008). Virtual reference service: from competencies to assessment. New York: Neal-Schuman Publishers.

12. Lester, Ray, Ed. (2005-2007). *New Walford: guide to reference sources*. 2 vols. (Vol. 1)

13. Lipow, A. G. (2003). *The virtual reference librarian's handbook*. Berkeley, Calif.: Library Solutions Press.

14. Lipson, C. (2006). *Cite right: A quick guide to citation styles--MLA, APA, Chicago, the sciences, professions, and more.* Chicago: University of Chicago Press. Metuchen, NJ: Scarecrow Press.

15. Ranganathan, S. R. (2006). *Reference service*. Bangalore: Sarada Ranganathan Endowment for Library Science.

16. Ross, C.S., Nilsen, K., & Dewdney, P. (2002). *Conducting the reference interview: a how-to-do manual for librarians*. London: Facet Publishing. *Science, Technology and Medicine*, Vol. 2 – Social Sciences). London: Facet Publishing.

17. Stevens, R. E., & Smith, L. C. (1986). *Reference work in the university library*. Littleton, Colo.: Libraries Unlimited.

Course Code: MLI-105
Course Title: Information Retrieval – I

Course Outcome:

A. Theoretical foundation of information retrieval system design.

B. Understanding of indexing language, system and technique.

C. User Studies for their information seeking behavior.

Unit – 1: Information Storage and Retrieval Systems

- Information transfer cycle: Role of libraries and other information agencies;
- Objective of IR systems: Document transfer / delivery vs. Assimilation / information transfer;
- Kinds, Functions and components of IR systems;
- Design of IR system: Points of view, factors for consideration, and phases in designing.

Unit – 2: Indexing Languages / Controlled Vocabulary

- Indexing Language: Structure, objective and differences with Natural Language ;
- Controlled language indexing and Natural language indexing;
- Vocabulary Control devices (Classification Scheme, Subject Heading List, Thesaurus, Authority list, Thesaurofacet and Classarus) : Importance, characteristic and interrelationships

Unit – 3: Indexing Systems and Techniques

- Need and purpose ;
- Indexing policy : Exhaustivity vs. specificity ;
- Critical study of the contributions of Cutter, Kaiser, Ranganathan, Farradane, Coates, etc. ;
- Pre-coordinate and Post-coordinate Indexing: Chain, POPSI, PRECIS, COMPASS, Relational Indexing, Uniterm
- Keyword indexing and citation indexing;
- Use of classification in alphabetical indexing.

Unit - 4 : Users and Information Retrieval

- Users: Nature and information needs; Expressed and unexpressed needs; Information behavior; user study – objective and methodology;
- Users-centred models of IR : HIB models – Wilson's model, Dervin model, Ellis's model, Bates model, Kulthau's model; Information search models - Belkin's model, Saracevic's model;
- User interface in IRS : Principles, function, state-of-the-art, and user-centred design of interface.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

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

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

3. 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.

4. Chatterjee, A. (c2017). *Elements of Information Organization and Dissemination*. Oxford: Chandos Publishing.

5. Chowdhury, G. G. (2010). Introduction to modern information retrieval. 3rd ed. London, Facet Publishing.

6. 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.

7. Foskett, A. C. (1996*). Subject approach to information.* 5th Ed. London*: The Library Association*.

8. Ghosh, S. B. and Satpathi, J. N., Eds. (1998). *Subject indexing systems: concepts, methods and techniques*. Calcutta. IASLIC

9. *Introduction to Information Retrieval*. New York: Cambridge University Press.

10. Lancaster, F. W. (1979). *Information retrieval systems: characteristics, testing, and evaluation*. 2nd ed. New York, John Wiley.

11. Lancaster, F. W. (1998). *Indexing and abstracting in theory and practice.* 2nd ed. Champaign, Illinois: University of Illinois.

12. Lancaster, F.W. (1986). *Vocabulary control for information retrieval*. 2nd ed. Arlington, VA: Information Resources

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

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

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

Course Code: MLI-106
Course Title: Management of Information Systems and Services

Course Outcome:

A. Advanced studies in management of libraries and information centres.

B. Application of management techniques in libraries and Total Quality Management.

C. Management process in liberalized society.

Unit – 1 : Management Thought and Planning of Information System

- Management approaches and management philosophy
- Management theory and schools of thought: Scientific, Classical, Bureaucratic, Human Relations, Mathematical System, Situational / Contingency theory, Decision theory – Their applications in Library and Information Centres;
- Planning: Nature, characteristics, influencing factors, principles and methodology
- Policy making, Decision making, forecasting;
- Relationship of other managerial functions with planning - Their applications in Library and Information Centres.
- System Analysis, Design and Monitoring factors
- Library and Information System: Planning Local and National Information System;
- Monitoring and controlling techniques: OR, MIS, MBO, SWOT, Network Analysis, PERT / CPM.

Unit – 2 : Management Techniques

- Personnel Management: Objectives, and functions
- Performance Appraisal;
- Interpersonal Relation, Group dynamics, Johari Window Model;
- Leadership: Theories, styles, approaches and models;
- Communication: Methods of communication, types of communication model;
- Motivation: Theories of motivation, sources of motivation;
- Total Quality Management: Elements, objectives and benefits;
- Application of TQM in libraries/information centres

Unit – 3 : Recent Trends in Management

- Change management: Changes in procedures, methods; Problems in incorporating change; techniques in managing change
- Globalization and its impact on management practices in Indian libraries/information centres
- Marketing and customer relationship management in libraries/information centres
- Stress and conflict management in libraries/information centres

Unit – 4 : Class Test / Project / Seminar Presentation

Reading List

1. Bakewell, K. G. B. (1997). *Managing user-centred libraries and information services.* 2nd ed. London: Maxwell.

2. Cook, C. (2002). *The maturation of assessment in academic libraries: The role of LibQUAL+ TM.* Bradford, England: Emerald Group Pub

3. Coote , H. & Batchelor, B. (1997). *How to market your library services effectively*. 2nd ed. London: Aslib.

4. Crawford, J. (1997). *Evaluation of library and information services effectively*. 2nd ed. London: Aslib.

5. Dunham, J. (2001). Stress in the workplace: past, present and future. London: Whurr Publishers.

6. Evans, G. E. (1983). *Management techniques for librarians.* 2nd ed. New York: Academic Press.

7. Evans, G. E. and Layzell, P. (2007). *Management basics for information professionals.* 2nd ed. London: Libraries Unlimited.

8. Gautam, J. N. (1991). *Library and information management.* New Delhi: Prentice-Hall India

9. Hayes, R. M. (2001). *Models for library management, decision-making, and planning.* San Diego, Calif.: Academic Press.

10. Heath, F. M., Kyrillidou, M., & Askew, C. A. (2004). *Libraries act on their LibQUAL+ findings: From data to action.* Binghamton, NY: Haworth Information Press.

11. Katz, W.A. (1980). *Collection development, the selection of materials for libraries*. New York: Holt, Rinehart & Winston.

12. Krishan Kumar. (1985). *Library manual.* New Delhi: Vikas

13. 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.

14. Laughlin, S., & Wilson, R. W. (2008). *The quality library: A guide to staff-driven improvement, better efficiency, and happier customers.* Chicago: American Library Association.

15. Martin, J. (2009). *Human resource management*. Los Angeles: SAGE

16. Mittal, R.L. (1984). *Library administration: theory and practice*. 5th ed.. Delhi: Metropolitan

17. Mukherjee, K. (2007). Customer relationship management. New Delhi: Prentice Hall.

18. Ranganathan, S.R. (1959). *Library administration*. 2nd ed. Bombay: Asia Publishing

19. Spiller, David. (1974). *Book selection: an introduction to principles and practice*. Rev. 2nd ed. London: Clive Bingley

20. Sutherland, V. J. and Cooper, C. L. (2000). Strategic stress management: an organizational approach. London: Macmillan.

Course Code: MLI-107
Course Title: Information and Communication Technology for LIS (Theory) – I

Course Outcome:

A. In-depth studies on different Operating Systems and Programming Languages.

B. Thorough exploration of Database management systems.

C. communication between networked computers.

Unit – 1 : Computer Operating Systems

- Operating Systems : Fundamentals, roles and features
- Multi-user (Unix-like) operating systems (user level and administrative level);
- Operating systems and library automation software;
- Open source operating systems.

Unit – 2 : High-level Programming Languages

- Overview of high-level programming languages and their use in problem solving;
- Overview of Algorithmic high-level programming languages (Any one of C, PASCAL and FORTRAN);
- Overview of Scripting high-level programming languages (Any one of PHP, ASP, PERL and Java).

Unit – 3 : Database Management System

- File organization and file structures; Indexing and hashing;
- Bibliographical database management system: Special features and handling problems
- Database architecture and data modelling;
- Open source RDBMS (MySQL and PostGreSQL).

Unit – 4 : Computer Communication System

- Network features and relationships (peer-to-peer and client/server relationships);
- IP Address system and DNS
- OSI networking model;
- TCP/IP reference model;
- Internet and intranet.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Botto, Francis. (1993). *Multimedia, CD-ROM and compact disc: a guide for users and developers.* New Delhi: Galgotia.

2. Bradley, P. (1999). *Internet power searching: the advanced manual*. New York: Neal-Schuman Publishers.

3. Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.

4. Deenadayalu, R. (1990). *Compmuter science* (Vol. 2). New Delhi: TMH.

5. Engard, N. C. (2009). *Library mashups: Exploring new ways to deliver library data*. Medford, N.J: Information Today, Inc.

6. Engard, N. C. (2010). *Practical open source software for libraries*. Oxford: Chandos Publishing.

7. Gorman, M. (2003). *The enduring library: technology, tradition, and the quest for balance.* Chicago: American Library Association.

8. Hagler, R. (1997). *The bibliographic record and information technology*. Chicago: American Library Association.

9. Jacsó, P., & Lancaster, F. W. (1999). *Build your own database.* Chicago: American Library Association.

10. Jean, G. (2011). *Digital library*. New Delhi: World Technologies

Course Code: MLI-108

Course Title: Application of Information and Communication Technology in LIS (Practice) - II

Course Outcome:

A. Hands on practice on Linux operating System.

B. Advanced level web page design, scripting languages.

C. Skill development in programming languages.

Unit – 1 : Linux User Level Tasks; Linux System Administration Tasks

Unit – 2 : Advance Level HTML and DHTML (Form, Frames, CSS and Java Scripts)

Unit – 3 : C Programming Language

Unit – 4 : PHP or ASP or PERL Scripting Language

Unit – 5 : Class Test / Project / Seminar Presentation / Viva-Voce

Reading List

1. Kam, D. (2009). *Role and policy implications of ICT in India.* New Delhi: Shree Publishers & Distributors.

2. Kernighan, B. W., & Ritchie, D. M. (1988). *The C programming language*. Englewood Cliffs, N.J: Prentice Hall.

3. Leon, A. & Mathews, L. (2004.). *Fundamentals of information technology* (Latest edition.). Chennai: Leon Tech World.

4. Library of Congress. (1988). *Advances in library information technology*. Washington, D.C: Cataloging Distribution Service, Library of Congress.

5. Matthews, J. R. (1980). *Choosing an automated library system: A planning guide.* Chicago: American Library Association.

6. Mukhopadhyay, P. (2013). *Course of action: Library information technology*. Kolkata: Prova Prakashani.

7. Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.

8. Satyanarayana, N. R. (1995). *A manual of computerisation in libraries.* New Delhi: Wishwa Prakashan.

9. Rajaraman, V. (1995). *Fundamentals of computers*. New Delhi: PHI.

10. Rajasekharan, K., & Nafala, K. M. (2007). *Creation of digital document archives with Winisis.* Kerala Institute of Local Administration.

11. Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.

12. Sinha, P. K. (1992). *Computer fundamentals: concept, systems and applications* (2nd ed.). Delhi: BPB Publications.

13. Tanenbaum, A. S. (1996). *Computer networks.* Upper Saddle River, N.J: Prentice Hall PTR.

14. Tanenbaum, A. S. (1984). *Structured computer organization*. Englewood Cliffs, N.J: Prentice-Hall.

15. Vaughan, J., & ALA TechSource. (2011). *Web scale discovery services*. Chicago, Ill: ALA TechSource.

16. Viswanathan, T. (1992). *Telecommunication switching systems and networks*. New Delhi: Prentice Hall of India Private Ltd.

17. Walsh, T. (2005). *Introducing ICT: Basic to intermediate.* Dublin: Gill & Macmillan

Course Code: MLI-109

Course Title: Research Methodology

Course Outcome:

A. Understanding the domain specific research activities.

B. Comprehension about research methodologies.

C. Research process in libraries.

Unit – 1 : Basic Concepts

- Research: Meaning, Scope, Objective and Characteristics; Kinds – Fundamental / Basic and Applied; and Research Methods;
- Developing Research Project and Writing Research Proposal;
- Concept of Research in the Context Various Broad Disciplines (Physical Sc. Chemical Sc. Earth Sc. Space Sc. Medical Sc. Engineering Sc. Mathematical and Computer Sc. Agricultural Sc. Life Sc. Social Sc. Etc.)
- Research in Science and Humanities: Basic Differences

Unit – 2 : Research Methods

- Historical Research: Nature, Scope and Sources of Historical Data including the Methods of Ascertainment of their Authenticity;
- Experimental Research: Nature and Types, Experimental Design; Research Design - Steps;
- Descriptive / Survey Research: Nature and Types, Data collection tools and techniques, Sampling – Types and Techniques, Scope of Experiment in Social research;
- Case study and Delphi method;
- Organisation, analysis and interpretation of data;
- Writing Research Report;

Unit – 3 : Research in the Context of LIS

- Theory and Empirics in LIS Research: Basic Concepts
- Concept of Research in Social Sciences
- Role of Libraries / Information Centres in Research;
- Trends of Research in Library and Information Science.
- Ethics of Research

Unit – 4 : Concept of Ethnographic Research

- Introduction, Action Research, Integrated Research to study Culture etc.
- Planning an Ethnographic Research
- Collection and Documentation of Data
- Different Methods: Participant Observation, Field Notes, In-Depth and Group Interviews, Diaries and Self-Documentation etc.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. *Das, N.G. (2009). Statistical methods. Calcutta: Tata McGraw-Hill.*
2. *Donald, H. K. & Boyce, Bert R. (1991). Operations research for libraries and*
3. *Glazier, Jack D, & Hall, Peter M. (1992). Qualitative research in information management. Englewood, CO: Libraries Unlimited.*
4. *Goon, A.M., Gupta, M.K. and Dasgupta, B. (1978). Basic statistics. Calcutta: World Press.*
5. *Gorman, G.E. & Clayton, Peter. (2004). Qualitative Research for the Information*
6. *Hafner, Arthur W. (1997). Descriptive statistical techniques for librarians. (2nd ed.). Chicago: American Library Association.*
7. *Hernon. P. (1989). Handbook of statistics for library decision making. Norwood, NJ: Ablex*
8. *information agencies: techniques for the evaluation of management decision alternatives. San Diego: Academic Press.*
9. *Khan, M. A. (2002). Research methods in library and information science. New Delhi: Cosmo Publications.*
10. *Krishan Kumar (1992). Research methods in library in social science. New Delhi: Vikas.*
11. *Lawal, I. O. (2009). Library and information science research in the 21st century: a guide for practicing librarians and students. Oxford,l UK: Chandos Pub.*
12. *literature. Brookfield, VT: Gower*
13. *London: Library Association.*
14. *Losee, Robert M., Jr., & Worley, Karen A. (1993). Research and evaluation for information professionals. San Diego: Academic Press.*
15. *McClure, Charles R. & Hernon, Peter, Ed. (1991). Library and Information science research: perspectives and strategies for improvement. Norwood,NJ: Ablex Publishing Corporation.*
16. *Moore, N. (2006). How to do research. 3rd ed. London: Facet Publishing.*

17. *Pickard, Alison Jane. (2012). Research Methods in Information. 2nd ed. London: Facet. Prytherch, Ray. (1994). Information management and library science: a guide to the*

18. *Professional: a practical handbook. 2nd ed. London: Facet.*

19. *professionals: Information management and systems. 2nd ed. Wagga Wagga, Australia: Center for Information Studies, Charles Stuart University*

20. *Simpson, I. S. (1990). How to interpret statistical data: A guide for librarians and information scientists. London: Library Association.*

21. *Slater, Margaret, Ed. (1990). Research methods in library and information studies.*

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

23. *Williamson, K., Ed. (2002). Research methods for students, academics and*

Course Code: MLI-110

Course Title: Technical Writing

Course Outcome:

A. Thorough understanding of writing technically.

B. Concept of commercial documentation.

C. Comprehension of plagiarism.

Unit - 1 : Fundamentals of Technical Writing

- Purpose, scope and characteristics of technical writing; difference from creative writing
- Role of a Technical Writer
- Principles of Technical Writing,
- Documentation deliverables
- Printed documentation and Online Help Systems
- Working with images and illustrations

Unit - 2 : Documentation Process

- Understanding Audience/Readers
- Collecting and Organizing information
- Disseminating information verbally and visually
- Development of documents.

Unit - 3 : Technical Writing Process

- Steps in technical writing, Document development process
- Guidelines and tools for technical writing
- Documentation Planning
- Selection of Tools
- Information Architecture
- Templates and Page design
- Audience Profiling

Unit – 4 : Plagiarism

- Reasons and scope of Plagiarism
- Methods of detection; plagiarism checking software
- Sources of plagiarism
- Predatory publications
- Role of plagiarism in growth of predatory publications

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Basu, B. N. (2011). *Technical writing;* New Delhi: Prentice Hall.
2. Blake, G. (1993). *The elements of technical writing*; New York: Macmillan.
3. Buckley, J and Mcmurrey, D. A. (2011). *Handbook of technical writing*; Boston: Cengage Learning.
4. Chatterjee, A (2013). *Elements of information analysis, consolidation and repackaging (IACR)*; Kolkata: Prova Prakashani.
5. Etter, A. (2015). *Modern technical writing: an introduction to software documentation*; Amazon Asia-Pacific.
6. Gill, J (2012). *How to Get Started as a Technical Writer*; Createspace Independent Pub.
7. Hackos, J. T. and Van Laan, K. (2012). *The insider's guide to technical writing*; California: XML Press.
8. Morgan, K; Spajic, S and McCart, A. (2015). *Technical Writing Process: The simple, five-step guide that anyone can use to create technical documents such as user guides, manuals and procedures*; Amazon Asia-Pacific.
9. Olsen, L. A. and Huckin, T. N. (1991). *Technical writing and professional communication*, 2nd Ed. New York: McGraw Hill.
10. Seetharama, S (2015). *Guidelines for technical writing for librarians & information professionals*; New Delhi: Ess Ess Pub.

SEMESTER-II

Course Code: MLI-201

Course Title: Information and Society

Course Outcome:

A. Aspects of information in societal development.

B. Understanding of knowledge management.

C. Economics of information and marketing.

Unit – 1 : Information Society

- Social implications of information ;
- National and International plans, policies and programmes relating to information for development, with special reference to India and developing countries ;
- Politics of information : Global Information Order vs. Indigenous Knowledge System, Information explosion vs. Information dearth, Information divide and digital divide ; freedom, confidentiality and privacy of information ;
- Information Society and Knowledge Society: Characteristics, changing role of information organizations and professionals; the developing world perspective.

Unit – 2 : Knowledge Management

- Information. and Knowledge Management
- Knowledge management cycle: Knowledge Creation, Acquisition, Capture, Codification
- Knowledge management tools : Selection and evaluation of knowledge management tools
- Knowledge and organization: Knowledge workers, essential skills for knowledge workers; Role of library professionals in Knowledge management.

Unit – 3 : Economics of Information

- Economics of information : Scope and objective ;
- Information economics vs. economics of information ;
- Information as a resource: Production, distribution and consumption of information and knowledge
- Economic analysis models, cost-benefit analysis and cost effectiveness.

Unit – 4 : Marketing of Library and Information Products and Services

- The marketing concept: Relevance and application in the information field
- Planning and design of marketing strategy
- Marketing research: Objectives and strategies, Marketing segmentation and targeting methods

- Marketing mix: New product development and designing products, product life cycle, pricing decisions and promotion strategies

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Arrow, Kenneth J. (1984). Collected papers. V.4: *The Economics of Information*. Cambridge, MA: Harvard University Press

2. Bell, D. (1980). *The social framework of the information society.* In Derrouzos M C & Moses,L. (eds), The computer age: a twenty year view. Cambridge: MIT Press.

3. Dearnley, J. & Feather, J. (2001). *The wired world: an introduction to the theory and practice of the information society*. London: Library Association.

4. Delanty, G. (2001). *Challenging knowledge: the university in the knowledge society*. Open University Press.

5. Dordick, H.S. & Wang, G. (1993). *The information society: a retrospective view*. Newbury Park, CA: Sage.

6. Drucker, P. (1998). From capitalism to knowledge society. *The knowledge economy*, 15-34.

7. Feather, J. (2008). *The information society: a study of continuity and change.* 5th ed. London: Facet Publishing.

8. Khanna, J. K. (1987). *Library & society*. Kurukshetra: Research Publications.

9. Levin, D K and Lippman, A, Ed. (1995). *The Economics of information*. 2v. Cheltenham: Edward Elgar Publishing.

10. Machlup, F. (1984). *The economics of information and human capital.* Princeton: Princeton University Press.

11. Martin, W. J. (1995). *The global information society.* Brookfield, VT: Gower.

12. Masuda, Y. (1980). *The information society as post-industrial society*. Washington, D.C.: World Future Society.

13. Mukherjee, B.(2012). *Information, Communication and Society*. New Delhi: Ess Ess Publications

14. Singh, A.P. and Yuvaraj, M (2013). *Information: Communication and Society.* New Delhi: Ess Ess Publications.

15. Singha Roy, D. K. (2014). *Knowledge society: new identities in emerging India*. New York: Cambridge University Press.

16. Sharma, Pandey S.K. (1987). *Library and society.* New Delhi: Ess Ess Publications.

17. Webster, F. (2002). *Theories of the information society*. 2nd Ed. London: Routledge.

Course Code: MLI-202

Course Title: Knowledge Organisation (Practice)

Course Outcome:

A. Acquaintance with Colon Classification (CC).

B. Classification of documents through CC-7.

C. Understanding of Classification of Compound subjects following CC-7.

Unit – 1 : Classification of documents representing simple subjects by Colon Classification, Edition 7 (CC-7)

Unit – 2 : Classification of documents requiring addition of common isolates by CC-7

Unit – 3 : Classification of documents representing compound subjects by CC-7

Unit – 4 : Classification of documents representing complex subjects by CC-7

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Dhiman, A. K. & Yashoda Rani. (2005). *Learn library classification*. New Delhi: Ess Ess.
2. Dhyani, P. (1998). *Library classification: theory and principles*. New Delhi: Wishwa Prakashan.
3. Dhyani, P. (1983). *Classification schemes and Indian libraries*. New Delhi: Metropolitan.
4. Foskett, D. J. (1974). *Classification and indexing in social sciences.* London: Aslib.
5. Halgamuge, S. K., & Wang, L. (2005). *Classification and clustering for knowledge discovery*. Berlin: Springer.
6. Hunter, E. J. (1988). *Classification made simple.* Aldershot: Gower.
7. Husain, S. (2004). *Library classification: facets and analysis*. Delhi: B. R. Publishing.
8. Navalani, K., & Gidwani, N. N. (1981). *A practical guide to colon classification*. New Delhi: Oxford & IBH.
9. Needham, C. D. (1971). *Organizing knowledge in libraries.* 2nd ed. London: Andre Deutsch.
10. Pathak, L. P. (2000). *Sociological terminology and classification schemes*. New Delhi: Mittal Publications.
11. Ranganathan, S. R. (2006). *Philosophy of library classification*. Bangalore: Ess Ess.

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

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

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

15. Rowley, J.E. & Farrow, J. (2000). *Organizing knowledge: an introduction to managing access to information*. 3rd ed. Aldershot: Gower.

16. Satija, M. P. (2011). *A guide to the theory and practice of Colon Classification*. New Delhi: Ess Ess.

17. Taylor, A. G. (2007). *Introduction to cataloguing and classification*.10th ed. New Delhi: Atlantic.

18. Vickery, B. C. (1968). *Faceted classification: a guide to construction and use of special schemes.* London: Aslib

Course Code: MLI-203

Course Title: Resource Description of Non-book Materials (Practice)

Course Outcome:

A. Understanding of non-book materials.

B. Describing Non book materials following AACR2R.

C. Describing Non book materials following MARC21.

Unit – 1 : Non-book Materials: their types and characteristics: Overview

Unit – 2 : Resource description of Non-book materials by AACR 2R

Unit – 3 : Resource description of Non-book materials according to MARC 21

Unit – 4: Class Test / Project / Seminar Presentation

Reading List

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

2. Hoffmann, C. F. B. (1980). *Getting ready for AACR 2: The cataloger's guide*. White Plains, NY: Knowledge Industry Publications.

3. Hunter, E. J. (1979). *AACR 2: An introduction to the second edition of Anglo-American cataloguing rules*. London: C. Bingley.

4. Hunter, E. J., & Fox, N. J. (1980). *Examples illustrating AACR 2: Anglo-American cataloguing rules*. 2nd ed. London: Library Association.

5. Hunter, E. J. (1989). *An introduction to AACR 2: A programmed guide to the second edition of the Anglo-American cataloguing rules, 1988 revision*. London: C. Bingley.

6. Hunter, E. J. (1989). *Examples illustrating AACR 2 1988 revision*. London: Library Association.

7. IFLA International Programme for UBC. (1984). *Guidelines for authority and reference entries*. London: IFLA International Programme for UBC.

8. Lehnus, D. J. (1971). *How to determine author and title entries according to AACR: An interpretive guide with card examples*. Dobbs Ferry, N.Y: Oceana Publications.

9. Machlup, Fritz.(1962). *The production and distribution of knowledge in the United States*

10. Maxwell, Robert & Maxwell, Margaret F. (1997). *Maxwell s handbook of AACR2*.

11. Olson, N. B., Intner, S. S., & Swanson, E. (1992). *Cataloging of audiovisual materials: A manual based on AACR 2*. DeKalb, Ill: Minnesota Scholarly Press.

12. Olson, N. B., Swanson, E., & Intner, S. S. (1985). *Cataloging of audiovisual materials: A manual based on AACR 2*. Mankato, Minn: Minnesota Scholarly Press.

13. Parameswaran, M. (1988). *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) --

Course Code: MLI-204

Course Title: Open Knowledge System and Scholarly Evaluation

Course Outcome:

A. Basics of Open Access Movement and the reality of Open Access

B. Open Access Advocacy

C. Policies for Openness.

Unit – 1 : Introduction to Open Access

- Need, Purpose and Advantages of open access
- History of Open Access

- Open Information and Data Resources (Open Data, Open Educational Resources)

Unit – 2 : Open Access Models

- Green Open Access
- Gold Open Access
- Gratis and Libre Open Access
- Hybrid Model

Unit – 3 : Networks and Organizations Promoting Open Access

- OA Initiatives
- OA Supporters (Persons)
- OA Organizations
- OA Journals (Fee-based and No-Fee based, Popular)
- OA Scholarly Publisher Association
- OA Repositories
- Institutional Repositories
- Major OA Networks, Facilitators, Coalitions and Initiatives (INASP, JISC, SPARC, SHERPA Project, Global OA Portal-UNESCO, OpenAIRE, COAR, EOS, NDLTD)

Unit – 4 : Open Access Mandates and Policies

- Open Access Policies and mandates
- Institutional Mandates (NIH Public Access Policy)
- National Centre for Atmospheric Research
- Open Access Policy: Framework, mandate and roadmap

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Chan, L., & Chan, Leslie. (2012). *Re-imagining research impact in the open knowledge environment*.

2. 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).

3. 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.

4. Crawford, W. (2011). *Open access: what you need to know now*. Chicago: American Library Association.

5. D'Antoni, S., Savage, C., & Unesco. (2009). *Open educational resources: Conversations in cyberspace*. Paris: United Nations Educational, Scientific and Cultural Organization.

6. European Union. & UNESCO (2008). *Open Access: opportunities and challenges*. Luxembourg: EUROPE.

7. Godwin, P. & Parker, J. (2012). *Information literacy beyond Library 2.0*. London: Facet Pub.

8. Harnad, Stevan. (2008). *Mandate Open Access to maximizing research progress*. (http://hdl.handle.net/10077/2603.)

9. Harnad,S. (2005). *Impact analysis in the open access era*. Retrieved September 5, 2013 from http://openaccess.eprints.org/index.php?/archives/2005/10/10.html.

10. Okada, A., Connolly, T., & Scott, P. J. (2012). *Collaborative learning 2.0: Open educational resources*. Hershey PA: Information Science Reference.

11. Schmidt, B., & Kuchma, I. (2012). *Implementing open access mandates in Europe: Open AIRE study on the development of open access repository communities in Europe*. Göttingen: Universitätsverlag Göttingen.

12. Suber, P. (2012). *Open access*. Cambridge, Mass: MIT Press.

13. Swan, A & Chan, L. (2009). *Open access scholarly information sourcebook: practical steps for implementing open access*.(s.l.): Openoasis.org.

14. Swan, A., & UNESCO. (2012). *Policy guidelines for the development and promotion of open access*. Paris: United Nations Educational, Scientific, and Cultural Organization.

15. UNESCO. (2013). *An open door to UNESCO's knowledge*.

16. UNESCO. (2006). *UNESCO open access resource directory*. Paris: United Nations Educational Scientific and Cultural Organization.

17. Willinsky, J. (2006). *The access principle: the case for open access to research and scholarship*. Cambridge, Mass: MIT Press.

18. Hood, A. K., & Association of Research Libraries. (2007). *Open access resources*. Washington, D.C: Association of Research Libraries.

19. ISSN International Centre & Unesco. (2013). *ROAD: Directory of open access scholarly resources*.

20. Jacobs, N. (2006). *Open access: key strategic, technical and economic aspects*. Oxford: Chandos.

21. Mukhopadhyay, P. (2014). *Interoperability initiatives*. In UNESCO course on Open Access (Module 4: Interoperability and Retrieval in OA – Unit 2). New Delhi: CEMCA/UNESCO.

22. Mukhopadhyay, P. (2014). *Resource description*. In UNESCO course on Open Access (Module 4: Interoperability and Retrieval in OA – Unit 1). New Delhi: CEMCA/UNESCO.

Course Code: MLI-205

Course Title: Information Retrieval – II

Course Outcome:

A. Searching process of information on variety of information sources.

B. Evaluating various sources of information.

C. Computer aided information processing and retrieval.

Unit – 1 : In-house, CD-ROM and Online IR

- Library Catalogue and OPAC;
- CD-ROM IR;
- Online IR;
- Text and Multimedia IR;
- Web IR;
- Use of classical library and information retrieval tools and techniques in Internet.

Unit – 2 : Searching in Information Retrieval System

- Prerequisites, Pre-search interview, Searching process;
- Retrieval models : Boolean Search model, Probabilistic retrieval model, Vector processing model, best match searching model; Alternative retrieval models: Natural language processing model and hypertext model;
- Search techniques : Boolean, Proximity, Range, Limiting, Truncation, String search;
- Formulation of Search Strategy
- Cross database searching.

Unit - 3 : Evaluation of IR System

- Purpose of evaluation;
- Levels of evaluation;
- Evaluation criteria;
- Evaluation methodology
- Evaluation experiments.

Unit - 4 : Trends in IR

- Developments related to different components of IR system;
- Developments related to evaluation of IR systems;

- User studies, User modelling and User interfaces;
- IR standards and protocols;
- IR in Web and digital libraries;
- Automatic abstracting and Machine translation;
- Natural language interfaces, voice recognition and question answer;
- Intelligent IR.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

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

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

3. Baeza-Yates, R. & Ribeiro-Neto, Berthier (1999). *Modern information retrieval*. New York: ACM Press; Harlow, England: Addison-Wesley.

4. 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.

5. Ceri, S., Bozzon, A., Brambilla, M., Della Valle, E., Fraternali, P. & Quarteroni, S. (2013). *Web information retrieval*. Heidelberg: Springer.

6. Chowdhury, G. G. (2010). *Introduction to modern information retrieval*. 3rd ed. London, Facet Publishing.

7. 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.

8. Foskett, A. C. (1996). *Subject approach to information*. 5th ed. London: The Library Association.

9. Fugmann, R. *Subject analysis and indexing: theoretical foundation and practical advice.* Frankfurt: Verlag, 1983.

10. Ghosh, S. B. & Satpathi, J. N., Eds. (1998). *Subject indexing systems: concepts, methods and techniques*. Calcutta. IASLIC.

11. Gilchrist, A. (1997). *From classification to knowledge organization*.

12. Hyvönen, E. (2012). *Publishing and using cultural heritage linked data on the semantic Web*. San Rafael, Calif: Morgan & Claypool Publishers.

13. International Organization for Standardization. (2013). *Information and documentation: Thesauri and interoperability with other vocabularies*. Geneva: ISO.

14. ISO 2788:1986. *Guidelines for the establishment and development of monolingual thesauri.* Geneva: International Organization for Standardization.

15. Lancaster, F. W. (1998). *Indexing and abstracting in theory and practice*. 2nd ed. Champaign, Illinois: University of Illinois.

Course Code: MLI-206

Course Title: Information and Communication Technology for LIS (Theory) - II

Course Outcome:

A. Designing automated libraries through open source library management softwares (LMS).

B. Knowledge on establishing digital library and institutional repositories.

C. Managing Language complexities in information retrieval.

Unit – 1 : Automated Library System

- Library Automation: importance, evolution, functions, implementation and evaluation
- Library automation software in India; Comparison of various software available in India
- Open source software for library automation (KOHA, WEBLIS etc.);
- Trends of library automation software.

Unit – 2 : Digital Library System

- Automated, electronic, digital and virtual library systems;
- Digital library architecture, user interface and design issues; Metadata – types, functions and schemas;
- Open source digital library software (GSDL, DSpace, E-print Archive, Fedora) and their implementation;
- Institutional repositories, research archives and electronic thesis and dissertations (ETD) management;
- Interoperability and Crosswalk; OAI/PMH and metadata harvesting.

Unit – 3 : Multilingual Library System and IR System

- Introduction to multilingual computing and its requirements;
- UNICODE (UTF-8 and UTF-16) and its application;
- Design and development of multilingual automated and digital library system (with special reference to Bengali language);
- Expert System; Decision Support System; Knowledge Discovery / Data Mining;
- NLP Tools and Techniques.

Unit – 4 : Field Study

- Students are required to visit different types of Library and/or Information System to get idea about the recent development of ICT applications in the same. They are also required to submit a report individually on the above within the date of formal dissolution of classes. The choice of field in which the study is to be conducted will be decided by the Departmental Committee.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Bradley, P. (2007). *How to use Web 2.0 in your library*. London: Facet.
2. Bradley, P., & Aslib. (2000). *World Wide Web: how to design and construct web pages*. London: ASLIB.
3. Chowdhury, G. G., & Chowdhury, S. (2001). *Searching CD-ROM and online information sources*. London: Facet Publishing.
4. Engard, N. C. (2010). *Practical open source software for libraries*. Oxford: Chandos Publishing.
5. Gorman, M. (2003). *The enduring library: technology, tradition, and the quest for balance*. Chicago: American Library Association.
6. Hagler, R. (1997). *The bibliographic record and information technology*. Chicago: American Library Association.
7. Jacsó, P., & Lancaster, F. W. (1999). *Build your own database*. Chicago: American Library Association.
8. Jean, G. (2011). *Digital library*. New Delhi: World Technologies.
9. Kernighan, B. W., & Ritchie, D. M. (1988). *The C programming language*. Englewood Cliffs, N.J: Prentice Hall.
10. Leon, A. & Mathews, L. (2004.). *Fundamentals of information technology* (Latest edition.). Chennai: Leon Tech World.
11. Library Association & Library Information Technology Centre. (1996). *Library technology*. London: Published jointly by the Library Association and the Library Information Technology Centre.
12. Matthews, J. R. (1980). *Choosing an automated library system: A planning guide*. Chicago: American Library Association.
13. Mukhopadhyay, P. (2013). *Course of action: Library information technology*. Kolkata: Prova Prakashani.
14. Mukhopadhyay, P. (2014). *Course of action: Automated library system*. Kolkata: Prova Prakashani.

15. Rajasekharan, K., & Nafala, K. M. (2007). *Creation of digital document archives with Winisis*. Kerala Institute of Local Administration.

16. Scott, M. L. (2006). *Programming language pragmatics*. San Francisco, CA: Morgan Kaufmann Pub.

17. Vaughan, J., & ALA Tech Source. (2011). *Web scale discovery services*. Chicago, Ill: ALA Tech Source.

18. Williams, H. E., & Lane, D. (2002). *Web database applications with PHP & MySQL*. Beijing: O'Reilly.

Course Code: MLI-207

Course Title: Application of Information and Communication Technology in LIS (Practice) - II

Course Outcome:

A. Hands on practice in RDBMS and MySQL

B. Designing ISO-2709 supported Web Enabled Bibliographic Database on ISIS platform.

C. Establishing automated library, digital library and institutional repositories through Open Source Software.

Unit – 1 : MySQL and / or PostGreSQL RDBMS

Unit – 2 : WWWISIS and / or ISIS 3W for Web Accessibility of ISO-2709 supported Bibliographic Databases

Unit – 3 : Library Automation Software – Managerial Level Tasks (SOUL / KOHA / WEBLIS)

Unit – 4 : Digital Library Software – GSDL / DSpace / E-Print Archive; Unicode based Multilingual Automated and Digital Library System

Unit – 5 : Class Test / Project / Seminar Presentation /Viva-Voce

Reading List

1. 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.

2. 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.

3. Breeding, M. (2009). *Opening up library systems through web service and SOA: Hype, or reality?*. Chicago: ALA TechSource.

4. Library and Information Technology Association (U.S.). (2002). *Open source software for libraries: An open source for libraries collaboration.* Chicago: LITA.

5. Morris, A., & Dyer, H. (1998). *Human aspects of library automation*. Brookfield, Vt: Gower

6. Mukhopadhyay, P. (2005.). *Library automation – software packages*. Unit 6 IN MLIS – MLII-104 (ICT Applications – Part I), New Delhi: IGNOU.

7. Mukhopadhyay, P. (2005). *Introduction to Library Automation*. Unit 1 IN CICTAL – BLII-003 (Library Automation and Digitization), New Delhi: IGNOU.

8. Mukhopadhyay, P. (2006). *Five laws and ten commandments: The open road of library automation in India.* (Proceedings of the National Seminar on Open Source Movement - Asian Perspective, XXII, IIT Roorkee, 2006. IASLIC, Kolkata. 2006. p. 27-36.) IASLIC.

9. Mukhopadhyay, P. (2008). *Library automation through Koha*. Kolkata: Prova Prakashani.

10. Mukhopadhyay, P. (2014). *Library automation processes*. Unit 2 IN BLIS – Course 9 (ICT in Libraries), New Delhi: IGNOU.

11. Murphy, F. J., Pollitt, A. S., & White, P. R. (1991). *Matching OPAC user interfaces to user needs.* Huddersfield: The Polytechnic of Huddersfield.

12. Pitkin, G. M. (1991). *The Evolution of library automation: Management issues and future perspectives.* Westport, CT: Meckler.

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

14. Sirohi, S., & Gupta, A. (2010). *Koha 3 library management system*. Birmingham: Packt Pub.

15. Texas State Library. (1995). *Library automation standards and guidelines*. Austin, Tex: Texas State Library, Library Development Division.

16. Tramullas, J., & In Garrido, P. (2013). *Library automation and OPAC 2.0: Information access and services in the 2.0 landscape*. Hershey, Pa: Information Science Reference.

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

Course Code: MLI-208

Course Title: Quantitative Techniques in Library and Information Centres

Course Outcome:

A. Mathematical and Statistical Foundation of measuring information activities.

B. Exploring methodologies for analysis data.

C. Understanding Sampling techniques in detail.

Unit – 1 : Useful Mathematical Devices

- Concept of Function, Independent and Dependent Variables
- Graphical Presentation of Functions
- Concept of errors (Absolute, Relative and Percentage Errors)
- Concept of Common and Natural Logarithm
- A.P. Series and G.P. Series
- Concept of Permutation and Combination

Unit – 2 : Descriptive Statistics for collection and presentation of data

- Measures of Central Tendency (Mean, Median Mode, Other Averages)
- Measures of Dispersion (Range, Mean Deviation, standard Deviation)
- Measures of Skewness and Kurtosis
- Measures of Relationship (Covariance, Correlation, Regression, Pearson's Correlation Coefficient and Spearman's Rank Correlation Co-efficient)

Unit – 3 : Analytical methods for collection and presentation of data

- Set theory
- Analysis of Variance (ANOVA Technique, One-Way ANOVA, Two-Way ANOVA), Analysis of Co-Variance (ANOCOVA)
- Linear Regression Analysis (Least Squares Estimation, Standard Error, Coefficient of Determination)
- Interpolation: Finite Differences, Differences of a Polynomial Function, Newton's Formula

Unit - 4 : Sampling and Statistical Inference

- Sampling Techniques;
- Probability Theories;
- Hypotheses Testing – Non-parametric tests (Chi-square test, Sign test), Parametric tests; Variance analysis.
- Statistical Inference (Point Estimation, Interval Estimation, Sample Size and its determination, Testing of Significance)

Unit - 5 : Class Test / Project / Seminar Presentation /Viva-Voce

Reading List

1. Agarwal, B.L. (2013). *Basic Statistics*. New Delhi: New Age
2. Agresti, A. and Finlay, B. (1997). *Statistical Methods for the Social Sciences*, 3rd ed. New Jersey: Prentice Hall
3. Cantu-Ortiz, F.J. ed. (2018). *Research Analytics: Boosting University Productivity and Competitiveness through Scientometrics*. London: CRC Press
4. Das, N.G. (2009). *Statistical Methods*. New Delhi: Tata McGraw Hill
5. Diekhoff, G.M. (1996). *Basic Statistics for the Social and Behavioral Sciences*. New Jersey: Prentice Hall
6. Elhance, D.N., Elhance, V and Aggarwal, B.M. (2010). *Fundamentals of Statistics*. New Delhi: Kitab Mahal.
7. Gun, A.M., Gupta, M.K. and Dasgupta, B. (2011). *Basic Statistics.* Kolkata: World Press
8. Levin, J and Fox, J.A. (1997). *Elementary Statistics in Social Research*, 7th ed. New York: Longman
9. Mohaty, B and Misra, S. (2015). *Statistics for Behavioral and Social Sciences*. New Delhi: Sage
10. Patten, M.L (2017). *Understanding Research Methods: An Overview of the Essentials*. London: Routledge
11. Rao, I.K.R (2010). *Growth of Literature and Measures of Scientific Productivity*. New Delhi, Bangalore: Ess Ess Pub. Sarada Ranganathan Endowment for Library Science.
12. Saxena, H.C and Kapur, J.N. (2015). *Mathematical Statistics*, 20th Ed. New Delhi: S. Chand.
13. Singh, Y.K. (2006). *Fundamentals of Research Methodology and Statistics.* New Delhi: New Age
14. Sprinthall, R.C. (1997). *Basic Statistical Analysis*, 5th ed. Boston: Allyn and Bacon
15. Taylor, B., Sinha, G and Ghoshal, T (2006). *Research Methodology: A Guide for Researchers in Management and Social Sciences*. New Delhi: Prentice Hall
16. Vaughan, L (2009). *Statistical Methods for the Information Professional*. New Jersey: Information Today
17. Walsh, A. (1990). *Statistics for the Social Sciences: with Computer Applications*. New York: Harper & Row.

Course Code: MLI-209
Course Title: Studies of Academic Metrics

Course Outcome:

A. Exploring Metrics for evaluation of scholarly communication.

B. Measuring research performances and productivity of agents of research activities.

C. Measuring the quality of journals and their articles.

Unit – 1 : Research Evaluation Metrics and Related Indicators

- Use of Citation-based Indicators for Research Evaluation
- Concepts of Librametrics, Bibliometrics, Scientometrics, Informetrics, Webometrics, etc.
- Common Bibliometric Indicators
- Citation Analysis
- Classical Bibliometric Laws (Bradford's Law, Lotka's Law, Zipf's Law, Pareto's Law, Sengupta's Law)
- Transition from Citation-based Indicators to Author Level and Article Level Metrics for Research Evaluation
- Author Level Indicators Using Authors' Public Profiles (h-index, g-index etc.)
- Article Level Metrics Using Altmetric Tools

Unit – 2 : Performance Measurement of R & D in S & T

- Citation Databases- The Web of Science, Scopus, Indian Citation Index (ICI)
- CiteSeerX, Google Scholar and Google Scholar Citations
- Analytical Products with Journal Performance Metrics
- Journal Citation Reports (JCR®)
- New Platforms for Evaluating Scholarly Communications
- SCImago Journal & Country Rank (SJR) [ScimagoJR.com], eigenFactor.org, Publish or Perish (POP) Software, Journal Metrics.com

Unit – 3 : Article and Author-Level Measurements

- Unique Identifiers for Authors and Researchers
- Open Researcher and Contributor ID (ORCID)
- Article Level Metrics (Altmetrics), Measuring Altmetrics using Altmetric.com
- Measuring Altmetrics using Impact Story.org

- Altmetrics for Online Journals
- Academic Social Networks
- ResearchGate.net, Academia.edu, GetCited.org, Social Science Research Network
- Other Important Social Networks
- Regional Journal Networks with Bibliometric Indicators
- SciELO – Scientific Electronic Library Online, Redalyc, Online Citation and Reference Management Tools (Mendeley, CiteULike, Zotero, Google Scholar Library, EndNote Basic)

Unit – 4 : Measurement of Scientific Productivity

- Vickery's Interpretation and Brook's Work;
- Characteristics of Bibliometric distributions;
- Ageing and Obsolescence study – Half-life Calculation;
- Validity of bibliometric measurement and application of bibliometric laws in libraries and information centres;
- Models of Growth of Literature: Derek De Solla Price Generalized Model (Based on Little Science, Big Science); Power Model; Exponential Model; Logistic Model; Gompertz Model etc.

Unit – 5 : Class Test / Project / Seminar Presentation

Reading List

1. Andres, A. (2009). *Measuring academic research: how to undertake bibliometric study*. Oxford: Chandos Publishing.

2. Andrews, Penny & Leeds Metropolitan University. (2013). *Amplifying your research and academic profile – a researcher's guide to social media and altmetrics.*

3. Borgman, C. L. (1990). *Scholarly communication and bibliometrics*. Newbury Park: Sage Publications.

4. 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: Akadémiai Kiadó.

5. Cronin, B., & Sugimoto, C. R., Ed. (2014). *Beyond bibliometrics: harnessing multidimensional indicators of scholarly impact*. Cambridge, Mass.: MIT Press.

6. De Bellis. N. (2009). *Bibliometrics and citation analysis: from the Science citation index to cybermetrics*. Lanham, MD: Scarecrow Press.

7. Tattersall, A. (2014). *Altmetrics: A practical guide for librarians, researchers and academics*. London: Facet Pub.

8. Thelwall, M.A. (2004). *Link analysis: an information science approach*. London: Elsevier Academic.

9. Thelwall, M. (2009). *Introduction to webometrics: quantitative web research for the social sciences.* San Rafael: Morgan & Claypool.

10. Garfield, E. (1979). *Citation Indexing – Its theory and application in science and technology and humanities*. New York: John Wiley.

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

12. Mukhopadhyay, P. (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).

13. Egghe, L. (2005). *Power laws in the information production process: Lotkaian informetrics.* Amsterdam: Elsevier/Academic Press.

14. Egghe, L. & Rousseau, R. (1990). *Introduction to informetrics: quantitative methods in library, documentation, and information science*. Amsterdam: Elsevier Science Publishers.

15. Egghe, L., Neelameghan, A., & Sarada Ranganathan Endowment for Library Science. (2000). *Lectures on informetrics and scientometrics.* Bangalore: Sarada Ranganathan Endowment for Library Science.

16. Egghe, Leo. (2009). *Lotkaian informetrics and applications to social networks*. The Belgian Mathematical Society.

Course Code: MLI-210

Course Title: Dissertation

Course Outcome:

A. An introduction to research process.

B. Opportunity to converge assimilated knowledge and acquired technological skill.

C. Experiencing freedom of researching.

Unit – 1 : Preparation of Dissertation (including Presentation in Seminar)

Unit – 2 : Viva-voce

M.Lib.I.Sc. Program- At A Glance

Societal aspects of Information – The theoretical foundation in societal aspect of information is taught in MLI-201. The subject facilitates the librarianship trainees in shaping up their philosophical construct in service design.

Communication of Information – Paper – MLI-101 discuss various aspects of Information Communication which pour the minute details of communicating information amongst the budding professionals.

Universe of Subjects - The concept of Universe of Knowledge and its facets are taught in theory and Practice papers viz MLI-102 and MLI-202. The incumbents get an opportunity to design schema for organizing knowledge and its interoperability in modern communication media.

Information Life-Cycle: Sources, Products and Service – Paper MLI- 104 takes care of student's understanding about the information life-cycle. The initiation of every information is depicted in the 'Sources of Information' which are thoroughly explored. The prerequisites of any information product are made comprehensive while the students themselves analyse the significance of those products brought out by different agencies. The quality of Information service depends on the diversity in information sources and variety of information Products. The students get an opportunity to understand various information services of international retute.

Information Retrieval – Ultimate objectives of information activity is to retrieve right information for right user at the right time is being achieved through theoretical foundation of Information Retrieval amongst the Library and Information Science entrants which is taught in Paper MLI-105 and MLI-205.

Application of Information Communication Technology (ICT) – Modern Information Communication is greatly drives through ICT application. The librarianship of modern age is a mixture of traditional librarianship with modern information communication technology competencies. Keeping in view the increasing demand of ICT in Libraries MLI-107, MLI-207 and MLI-108 is devoted to ICT application in libraries.

Research in Librarianship - Research Methodologies is thoroughly taught in MLI-109 to research skill development amongst the budding Professionals.

Technical Writing – Reporting the research results is also taken care of through the contentys of the Paper MLI-110.

Metric Research – the modern librarianship research is depending on quantitative methods. Research on the developmental science comes out through Metric Research. MLI-209

concentrates on academic metric research to incorporate theoretical foundation and practical competencies in Metric Research.