

UNIVERSITY OF MADRAS
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

MASTER OF LIBRARY AND INFORMATION SCIENCE

(M.Lib.I.Sc.)

2 Years –Programme

REGULATIONS

SYLLABUS

and

DETAILED COURSE CONTENTS

2016-2017

UNIVERSITY OF MADRAS

CHENNAI

Department of Library and Information Science

Guidelines, Regulations and Course Contents of the Programme leading to M.Lib.I.Sc. (Master of Library and Information Science) (Two years – Semester Scheme) Degree.

A. Programme Details

Name of the Department	: Department of Library and Information Science
School	: School of Information and Communication Studies
Subject	: Library and Information Science
Name of the Programme	: M.Lib.I.Sc. (Master of Library and Information Science)
Duration of the Programme	: 2 years – 4 Semesters - Choice Based Credit System

B. Objectives of the Programme

1. To familiarise the concepts of information and communication.
2. To expose with advances in ICT and information handling techniques.
3. To acquaint with the activities and services of different information systems.
4. To introduce the concept, types, and techniques of research.
5. To introduce new strategies in Library Management effectively.
6. To create awareness on the emerging tools in digitization

C. Eligibility for Admission to the Programme

(i) Qualification for Admission

Candidates who have passed any Bachelor's Degree Examination from a recognised University under 10+2+3 system and who have secured at-least 50% marks in aggregate, in Part III (main

subjects) are eligible to apply seeking admission to the M.Lib.I.Sc. (Library and Information Science) Programme.

(ii) Selection for Admission

The selection of candidates shall be made on the basis of the eligibility.

(iii) Intake

The total number of candidates to be admitted to the programme shall be 20 (Twenty only).

(iv) Internship

Each student shall take up Internship during Summer Vacation, between II Semester and III Semester.

D. Syllabus

Sl. No	Course Code	Course Title	Sem.	C / E	Credits
1	CIS C201	Foundation of Library & Information Science	I	C	4
2	CIS C202	Principles and Techniques of Management	I	C	4
3	CIS C203	Introduction to IT and Programming	I	C	4
4	CIS C204	Information Sources	I	C	4
5	CIS C205	Information Products and Services	II	C	4
6	CIS C206	Element of Statistics and Research Methods	II	C	4
7	CIS C207	Cataloguing & Metadata (Theory & Practice)	II	C	4

8	CIS C208	Knowledge Organization (Theory & Practice)	III	C	4
9	CIS C209	Library Management & Automation	III	C	4
10	CIS C210	Information Storage & Retrieval	III	C	4
11	CIS C211	Informetrics	III	C	4
12	CIS C212	Internship	III	C	4
13	CIS C213	Content Management	IV	C	4
14	CIS C214	Web Technology	IV	C	4
15	CIS C215	Digital Libraries	IV	C	4
16	CIS E201	Project	IV	E	6
17	CIS E202	Knowledge Management		E	3
18	CIS E203	Marketing of Information		E	3
19	CIS E204	Electronic Publishing		E	3
20	CIS E205	Documentation		E	3
21	CIS E206	Academic Libraries		E	3
22	CIS E207	Community Information Services		E	3
23	CIS E208	Information System for Industry		E	3

Semester I

CIS C201 – Foundation of Library & Information Science

- Unit I - Data, Information & Knowledge; Evolution of Information Science as a discipline; its scope and relation to Library Science, Cognitive Sciences, Computer Science etc; the inter-discipline nature of IS.
- Unit II - Theories of Information, Communication Models; Channels of Communication-Formal & Informal; Information Transfer Cycle.
- Unit III - Information / Knowledge Society; information and knowledge as economic factors; economics of information; legal and ethical issues; the digital divide.
- Unit IV - National information infrastructure; library networks; legislative framework for provision of library services and access to information.
- Unit V - Information / Memory institution of different kinds: Libraries, Archives, Documentation Centers, Information Analysis Centers, Museums and respective roles and functions.
- Unit VI - Normative Principles: Five Laws of Library Science; open access to information; library and information profession

Suggested Readings

1. Bhatt, R. K. (1995). History and development of libraries in India. New Delhi: Mittal Publications,
2. Burahohan, A. (2000). Various aspects of Librarianship and Information Science. New Delhi: Ess Ess Publication.
3. Cawkell, A.E., Ed. (1987). Evolution of an Information Society. London: ASLIB.
4. Chapman, E. A and Lynden, F. C. Advances in Librarianship. (2000). San Diego: Academic Press.
5. Feather J. (2008). The Information Society: a study of continuity and change. Ed. 5. London: Facet Publishing
6. Isaac, K.A. (2004). Library Legislation in India: A critical and comparative study of State Library Acts. New Delhi: Ess Ess Publication.
7. Krishan Kumar. (1993). Library Organisation. New Delhi: Vikas.

8. Kumar, P.S.G. (1997). Fundamentals of Information Science. Delhi: S. Chand.
9. Kumar, P.S.G. (2003). Foundations of Library and Information Science. Paper I of UGC Model Curriculum. New Delhi: Manohar.
10. Prasher, R. G. (1991). Information and its Communication. New Delhi: Medallion Press.
11. Ranganathan, S.R. (1999). The Five Laws of Library Science, 2nd Ed., Bangalore: Sarada Ranganathan Endowment for Library Science.
12. Richard E.R. (2000). Foundations of Library and Information Science. London: Neal-Schuman.
13. Rout, R.K. Ed. (1999). Library Legislation in India. New Delhi: Reliance.
14. Sharma, P. S.K. (1992). Library and Society. 2 Ed. Delhi: Ess Ess Publication.
15. Singh ,S P. (2005). Special libraries in the electronic environment. New Delhi: Bookwell.
16. Surendra S. and Sonal Singh. Ed. (2002). Library, Information and Science. New Delhi: Ess Ess Publication.
17. Venkatappaiah, V. (1990). Indian Library Legislation. 2nd Vol. New Delhi: Daya.
18. Venktappaiah ,V and Madhusudhan, M. (2006). Public library legislation in the new millennium. New Delhi: Bookwell.
19. Vyas, S.D. (1993). Library and Society. Jaipur: Panchasheel.

CIS C202 – Principles and Techniques of Management

- Unit I - Schools of Management; Classical Neo- classical and Modern management theories; principles and functions of management.
- Unit II - System concepts; System theory; Open and Close System; management techniques, PERT, CPM, etc.
- Unit III - Human Resource Management; Financial resources management; budgets and budgeting techniques.
- Unit IV - Crisis management; change management; space management.
- Unit V - Quality management; TQM, quality audit, SERVQUAL, ISO 9000 series of standards.

Suggested Readings

1. Brophy, P. and Courling K. (1997). Quality management for information and library managers. Bombay: Jaico.
2. Bryson, J.O. (1996). Effective library and information management. Bombay: Jaico.
3. Clayton, P. R. and Gorman, G. E. (2006). Managing information resources in libraries: collection management in theory and practice. London: Facet Publishing.
4. Coote, Helen. (1994). How to market your library service effectively. London: ASLIB.
5. Evans, E.G. Ed. (1986). Management Information Systems. New Delhi: S. Chand & Co.
6. IASLIC (1979). Application of management techniques in Library and Information Systems. Kolkata: IASLIC.
7. Krishan Kumar. (2007). Library management in electronic environment. New Delhi: Har Anand Publications.
8. Kumar, P.S.G. (2003). Management of Library and Information Centers. Delhi: B. R. Publishing Corporation.
9. Mahapatra, P. (1997). Library Management. Calcutta: World Press.
10. Matthews ,J. (2005). Strategic planning and management for library managers. London: Libraries Unlimited.
11. Paliwal, P.K. (2000). Compendium of Library Administration. New Delhi: Ess Ess Publication.
12. Paranjpe, V. (1997). Strategic human resource management. New Delhi: Allied.
13. Parker, C. and Café, T. (1993). Management Information Systems: Strategy and action. New York: McGraw Hill.
14. Ranganathan ,S. R. (2006). Library Administration. New Delhi: Ess Ess Publication.
15. Seetharama, S. (1990). Guidelines for planning of libraries and information centers. Calcutta: IASLIC.

CIS C203 – Introduction to IT and Programming

Unit I - Information Technology; Evolution of Digital Computers; Introduction to Telecommunications; Number Systems: Binary, Octal, Hexadecimal, Representation of Numbers in Computers; Character Representation: ASCII, ISCII and UNICODE; File formats

Unit II - Basic components of a Computer – Arithmetic Logic Unit; Control Unit; Memory Unit – Static and Dynamic RAM, ROM, Cache memory; Input / Output devices.

Unit III - Operating System: Linux, Windows; Boolean algebra & logic.

Unit IV - Fundamentals of Programming; Introduction to C programming; Object Oriented programming. Java, PHP

Unit V - Use of a standard DBMS package through lab work.

Suggested Readings

1. Arvind Kumar. Ed. (2006). Information Technology for all (2 vols.). New Delhi: Anmol.
2. Bansal, S.K. (2005). Information Technology and Globalisation. New Delhi: A.P.H. Publishing Corporation.
3. Basandra, S.K. (2002). Computers today. New Delhi: Gogotia.
4. Croucher, P. (1996). Communications and networks. 2nd ed. New Delhi: Affiliated East West.
5. Decson, E. (2000). Managing with Information Technology. Great Britain: Koganpage Ltd.
6. Dickson, G.W. and Desanctis, G.. Information technology and the future enterprise: New models for managers. New Jersey: Prentice Hall.
7. Dhiman, A.K. (2003). Basics of Information Technology for librarians and information scientists, Vol.1. New Delhi: Ess Ess Publication.
8. Forrester W.H. and Rowlands, J.L. (2002). The online searcher's companion. London: LA.
9. Ferris, Jeffrey A. (2000) Windows 2000: Development and desktop management. Indiana: New Riders.
10. Gallimore, A. (1997). Developing on IT strategy for your Library. London: Library Association.
11. Haravu, L.J. (2004). Library automation: design, principles and practice. New Delhi: Allied Publishers.
12. INFLIBNET. (2003). Software for university libraries user manual. Ahmedabad: INFLIBNET.
13. Kashyap, M.M. (2003). Database systems. New Delhi: Vikas.
14. Keren, C and Perlmutter, L, Ed. (1995). The application of mini and micro computers in Information, Documentation, and Libraries. Amsterdam: Elsevier.

15. Kochan, Stephen and Wood, Patrick. (2003). Unix Shell Programming, 3rd ed. USA: SAMS
16. Matthew, Neil et al. (2001). Professional Linux Programming. Mumbai: SPD
17. Negus, Christopher. (2005). Linux bible. New York: John Wiley.
18. Peterson, Richard. (1996). Linux: the Complete Reference. New York: McGraw-Hill.
19. Rajaraman, V. (2007). Introduction to Information Technology. New Delhi: Prentice-Hall of India.
20. Rajaraman, V. (1995). Fundamentals of Computes. New Delhi: Prentice-Hall of India.
21. Rich, E. and Knight K. (1994). Artificial Intelligence, 2nd Ed. New Delhi: T.M.H.
22. Satyanarayana, R. (2005). Information Technology and its facets. Delhi: Manak.
23. Shroff, R. (2000). Computer systems and applications. Mumbai: Himalaya.
24. Sinha, P.K. (1992). Computer fundamentals: concept, systems and applications. 2nd ed. New Delhi: BPB Publications.
25. Tranter, Jeff. (1996). Linux Multimedia Guide. Cambridge: O'Reilly.
26. Zorkoczy, P. (2005). Information Technology: An introduction, London: Pitman.

CIS C204 – Information Sources

- Unit I - Information Sources – Documentary and Non-Documentary; Primary, Secondary and Tertiary Sources of Information and their Characteristics;
- Unit II - Evaluation Criteria; Detailed Study on selected Reference Sources;
- Unit III - Multimedia & E-resources; Portals, Subject Gateways; Open Access Resources
- Unit IV - Search Engines, Search Techniques
- Unit V - Lab. Work on Information Search & Access, Trial Demos

Suggested Readings

1. Alan, P., Gwyneth, T. and Goff S. (1999). The Library and Information Professional's Guide to the World Wide Web. London : Facet Publishing.
2. Chowdhury, G. G. and Sudatta Chowdhury (2001). Searching CD-ROM and Online Information Sources. London : Facet Publishing.
3. Grogan, Dennis. (1984). Science & Technology: An introduction to literature. London: Clive Bingley.
4. Hurt, C.D. (1998). Information Sources in Science and Technology. 3rd ed. London.: Libraries Unlimited.
5. Katz, W.A. (2000). Introduction to reference work. 2V. London: Butterworths.
6. Rao, I.K.R. (2001). Electronic Sources of Information. Bangalore: DRTC.
7. Sewa Singh. (2001). Hand book of international sources on reference and Information. New Delhi: Crest Publication.
8. Sharma, J.S. and Grover, D.R. (1998). Reference service and sources of Information. New Delhi: Ess Ess Publication.
9. Stebbins, Leslie F. (2005). Student guide to research in the digital age: how to locate and evaluate information sources. Santa Barbara: Libraries Unlimited
10. Subramanayam, K. (1981). Scientific and technical Information resources. New York: Marcel Dekkar.
11. Walford, A.J. (1990). Guide to reference materials. 3V. London: Library Association.
12. <http://www.Libraryspot.com>
13. <http://www.refdesk.com>
14. <http://www.infolibrarian.com>
15. <http://www.infolibrarian.com>
16. <http://www.Libraryspot.com>
17. <http://www.refdesk.com>

Semester II

CIS C205 – Information Products and Services

Unit I - Information Products and Services: Documents Delivery, Translation; Current Awareness, SDI, E-Alert & Web-based Services; Information Analysis and Consolidation Products and Services.

Unit II - Study of products and services of selected major global Information Systems

Unit III - Users of Information; Understanding the users; Categories of users and their needs; Information use contexts; Information seeking behavior of users; Theories of Information behavior.

Unit IV - Use Studies; Methods of users studies; major information users and use studies and their findings

Unit V - Users Education & Information Literacy

Suggested Readings

1. Cronin, B. (1981). Marketing of Library and Information Services. London: ASLIB.
2. Eileen, E. D.S. (2002). Marketing concepts for Libraries and Information Services. 2nd Ed. London: Facet Publishing.
3. Guha, B. (1983). Documentation and Information: services, techniques and systems. Calcutta: World Press.
4. Gupta, B.M. et al. (1991). Handbook of Libraries, Archives, Information Centres in India. New Delhi: Aditya Prakshan.
5. IASLIC (1988). Marketing of Library and Information services (13th IASLIC Seminar papers), Calcutta: IASLIC.
6. Jain, A.K. et al. Ed. (1995). Marketing of information products and services. Ahmedabad: IBH Publishing Company.
7. Krishna Kumar. (1998). Reference service, 5th ed. New Delhi: Vikas.
8. Lucas, Amy. Ed. (1989). Encyclopaedia of Information Systems and Services. Detroit: Gale Research.
9. Neelameghan A. and Prasad, K.N. Eds. (2005). Information systems and services in India. Bangalore: Sarada Ranganathan Endowment for Library Science.

10. Ranganathan, S. R. (1961). Reference Service. 2nd ed. Bombay: Asia Publishing House.
11. Rowley (J). The basics of information system. Ed. 2. 1996. Library Association, London.
12. Seetharama, S. (1997).Information consolidation and repackaging. New Delhi: Ess Ess Publication.
13. Sunitha Asija. (1998). Documentation services in India: A review of some selected documentation centres. New Delhi: Academic Publications.
14. UNESCO. (1978). Handbook of Information Systems. Paris: Unesco.

CIS C206 – Element of Statistics and Research Methods

- Unit I - Introduction to Statistics; definition of statistical terms-population, sample, data and variables; frequency distributions; scales of measurement; presentation of data-graphical and tabular; frequency tables, histogram, frequency curves; correlation and regression analysis; curve fitting; probability, probability distributions; measures of central tendency and dispersion; binominal, Poisson, geometric and Negative binomial distributions;
- Unit II - Research design – definition, need; Sampling; Hypothesis
- Unit III - Research methods- data collection & analysis.
- Unit IV - Testing of hypothesis: z-test & t-test, and goodness-fit- test
- Unit V - Report writing- style manuals (MLA, APA, Chicago);
- Unit VI - Use of statistical packages such as SPSS.

Suggested Readings

1. Busha, C. H. (1990). Research methods in librarianship. New York: Academic Press.
2. Busha, C., Hand Harter, S.S. (1980). Research methods in librarianship: Techniques and interpretation. Orlando: Academic press.
3. Charles, H. et.al. (1993). Research methods in librarianship: Techniques and interpretations. New Delhi: Sage.
4. Fowler, F.J. (1993). Survey research methods. New Delhi: Sage.
5. Goode, W.J. and Hatt, P.K. (1986). Methods in Social Science research. New Delhi: McGrawHill.

6. Goon, A M. (2000). Fundamental of Statistics. Calcutta: World Press.
7. Krishan Kumar. (1999). Research methods in Library and Information Science. Rev. Ed. New Delhi: Har-Anand Publications.
8. Krishnaswami, O.R. (1993). Methodology of Research in Social Sciences. Bombay: Himalaya.
9. Lancaster, F. W and Powell, R R. (1985). Basic research methods for librarians. New Jersey: Ablex Publishing.
10. Powell, R R and Silipigni, C L. (2004). Basic research methods for librarians. Ed. 4. Westport: Libraries Unlimited.
11. Rao, I.K.R. (1985). Quantitative methods for Library and Information Science. New Delhi: Wiley Eastern.
12. Slater, M. (1990). Research methods in Library and Information studies. London: LA.

CIS C207 – Cataloguing & Metadata (Theory & Practice)

Unit I - Bibliographic Entities and Bibliographic Records; Bibliographic files of different kinds, Bibliographic Objectives.

Unit II - Principles of Description; FRBR; Bibliographic Languages: Standards for Description: ISBD, AACR-2, RDA; Standards for Machine Readable Bibliographic Records – ISO 2709 and the MARC family of Formats, MARC- XML

Unit III - Subject languages and vocabulary control: Lists of Subject Headings, Thesauri: Indexing Models: Automatic Indexing.

Unit IV - Metadata and Metadata Standards: Dublin Core, EAD.

Unit V - Cataloguing Practice: Preparation of Bibliographic Records for different kinds of documents with emphasis on e-resources using appropriate standards (such as AACR-2 / RDA, MARC 21, LCSH, Authority Files) and software (KOHA).

Suggested Readings:

1. Anglo-American Cataloguing Rules. (Latest Edition). London: Library Association.
2. Anglo American Cataloguing Rules (2002). 2nd Ed. Rev. available online at <http://www.oclc.org/oclc/bib/toc.htm>
3. Foulonneu, M. (2008). Metadata for Digital Resources. UK: Chandos

4. Library of Congress Subject Headings (Latest Edition). Washington: Library of Congress.
5. OCLC. (2002). Bibliographic formats and standards. 3rd ed. Dublin, Ohio: OCLC.
6. Ranganathan, S. R. (1974). Cataloguing Practice. Assisted by G. Bhattacharya. Bombay: Asia Publishing House.
7. Ranganathan, S. R. (1988). Classified Catalogue Code with additional rules for Dictionary Catalogue Code. Assisted by A. Neelameghan. 5th rep. ed. Bangalore: Sarada Ranganathan Endowment for Library Science.
8. Rowley, J., and Farrow, J. (2000). Organizing knowledge: An introduction to managing access to information. 3rd ed. Aldershot, England: Gower
9. Smiraglia, R.P. (2005). Metadata: A Cataloger's primer. USA: Haworth.
10. Srivastava, M .D. (2011). Metadata creation in Digital Libraries. New Delhi: Pacific.
11. Svenonius, Elaine. (2000). The intellectual foundation of information organization. USA: MIT Press.

Semester III

CIS C208 – Knowledge Organization (Theory & Practice)

- Unit I - Universe of Subjects: structure and attributes, modes of formation of subjects; Library Classification; Mapping of universe of subjects in major schemes of Library classification;
- Unit II - General Theory of Classification; Normative Principles; The three planes of work; Principles and Postulates of Helpful Sequence; Facet Analysis; Notation; Kinds and Hospitality; General Theory of Subject Indexing Languages (SIL) of G.Bhattacharyya
- Unit III - Trends in classification: Automatic classification, Classification in online system and Web; Knowledge Organization for Digital Libraries; Ontologies
- Unit IV - Classification Practice: Use of specified editions of DDC and UDC for classification of documents

Suggested Readings

1. Berwick Sayers, W.C. (1950). Introduction to Library Classification. London: Andra dautch.

2. Dhyani, P. (1998). *Library Classification: Theory and practice*. New Delhi: Vishwa Prakashan.
3. Fosket, A. C. (1973). *Universal Decimal Classification*. London: Clive Bingley.
4. Foskett, A. C. (1996). *Subject Approach to Information*. 5th ed. London: Library Association
5. Jennifer, E. R. (1987). *Organising knowledge: An introduction to information retrieval*. Aldershot: Gower.
6. Krishan Kumar. (1998). *Theory of Classification*. 4th rev. ed. Delhi: Vikas Publishing House.
7. Kumbhar, Rajendra. (2011). *Library Classification Trends in the 21st Century*. Oxford: Chandos
8. McIlwaine, I. C. (2007). *The Universal Decimal Classification: a guide to its use*. The Hague, Netherlands: UDC Consortium.
9. Nath, M. (2008). *Universe of knowledge and development of subjects*. Jaipur: Pointer
10. Parkhi, R.S. (1977). *Library Classification: Evolution of a dynamic theory*. Bombay: Asia Publishing House.
11. Ranganathan, S. R. (1962). *Elements of Library Classification*. 3rd ed. Bombay: Asia Publishing House.
12. Ranganathan, S. R. (1989). *Prolegomena to Library Classification*. Assisted by M. A. Gopinath. 3rd rep. ed. Bangalore: Sarada Ranganathan Endowment for Library Science.
13. Ranganathan, S.R. (1960). *Colon Classification*, 6th ed. Bangalore: Sarada Ranganathan Endowment for Library Science.
14. Ranganathan, S.R. (1999). *The Five Laws of Library Science*. Bangalore: Sarada Ranganathan Endowment for Library Science.

CIS C209 – Library Management & Automation

Unit I - Library as a System; Components and Subsystems; Library Housekeeping operations –Acquisition and Collection Development, Document circulation,

Serials control, Stock verification; Organizational structure, Library Authority; Library Infrastructure (including differently abled).

Unit II - Care, Preservation & Conservation of documents

Unit III - Library Standards; Measures of Performance of Libraries

Unit IV - Library Automation; Overview of library automation software; Criteria for selection of software; and Hardware (including differently abled); Electronic Surveillance.

Unit V - Detailed study of lab. Work using a specified package (E.g. KOHA)

Suggested Readings

1. Abbot, Christine. (1994). Performance Measurement in Libraries and Information Services. London: ASLIB.
2. Baker, F.W., and Baker, Sharon, L. (1991). The Measurement and Evaluation of Library Services. Virginia: Information Resource Press
3. Byrson, Jo. (1990). Effective Library and Information Centre Management. England: Gower
4. Carter, R. (1987). The Information technology hand book. London: Henemann.
5. Chapman, E.A.(1970). Library systems analysis guidelines. New York: John Wiley.
6. Cooper, M.D. (1996). Design of Library automation systems: File structures, data structures and tools. New York: john Wiley.
7. Dhiman, A.K.(2003). Basics of Information Technology for Librarians and Information Scientists. Ess Ess Publication .
8. Haravu, L.J. (2004). Library automation: design, principles and practice. London: Allied
9. Hayss, Robert M. (2001). Models for Library Management, Decision-Making and Planning. New York: Academic Press
10. Jeanne, F.M. (2006). A librarian's guide to the Internet: A guide to searching and evaluating Information. Oxford: Chandos Publishing.
11. Kaul, H.K. (1992). Library networks: an Indian experience. New Delhi: DELNET.
12. Kumar, P.S.G. (2004). Information Technology: Applications (Theory and Practice). Delhi: B.R.Publishing.

13. Lucy, A.T. (2005). An introduction to computer based library system. 3rd Ed. Chichester: Wiley.
14. Osborne, Larry N., and Nakamura, Margaret. (1999). System Analysis for Libraries and Information Professional. Colorado: Libraries Unlimited.
15. Prytherch, Gower, Ed. (1998). Handbook of Library and Information Management. England: Gower publishing.
16. Rao, I.K.R. (1996). Library automation. New Delhi: New Age International.
17. Stueart, Robert D. and Moran, Barbara B. (2004). Library and Information Centre
18. <http://www.inflibnet.ac.in>
19. <http://www.delnet.nic.in>
20. [http:// www.oclc.org](http://www.oclc.org)

CIS C210 – Information Storage & Retrieval

- Unit I - Information Retrieval – Basic Concepts; Overview of IR systems; Historical Perspectives; Measures of Performance (ASLIB Cranfield, MEDLADS, TREC)
- Unit II - Introduction to DBMS – integrity and security issues; E-R Models; Relational and other Database Models; Normalization. SQL, Implementation in MySql or PostgreSQL
- Unit III - IR Models: Boolean, Vector and Probabilistic Models; Alternative IR Models: algebraic and probabilistic models (Bayesian networks).
- Unit IV - Structured Text Retrieval Models; Text Operations: document pre-processing (word stemming, stop words, thesauri), document clustering; Linguistic aspects
- Unit V - Searching vs. browsing; dynamic query formulation: keyword based querying, pattern matching, structural queries, query protocols; Hybrid, statistical and knowledge approaches; query expansion.

Suggested Readings

1. Alberico, R. and Micco M. (1990). Expert systems for reference and information retrieval. West Port: Meckler.
2. Atchison, J. and Gilchrist, A. (1972). Thesaurus construction: a practical manual. London: ASLIB.
3. Charles, T., Boyce, Bert R. and Kraft, Donald H. 2000. Text Information retrieval Systems. (Library and Information Science). 2nd ed. California: Academic Press
4. Chowdhry, G.G. (2003). Introduction to modern Information retrieval. 2nd ed. London: Facet Publishing.
5. Cleveland, D. B. (2001). Introduction to Indexing and Abstracting. 3rd ed. Englewood, Colo: Libraries Unlimited.
6. Date, C.J. (2000). An Introduction to Database Systems. Reading, MA: Addison-Wesley
7. Eveland, Donald B., and Cleveland, Ana D. (2001). Introduction to indexing and abstracting. Libraries Unlimited, Colorado.
8. Foskett, A.C. (1996). Subject approach to information. Ed.5. London: Library Association.
9. Ghosh, S.B. and Biswas, S.C. (1998). Subject Indexing systems: Concepts, methods and techniques. Rev. ed. Calcutta: IASLIC.
10. Korfhage (R R). (1997). Information storage and retrieval. New York, USA: John Wiley.
11. Lancaster, F Wilfred. (2003). Indexing and abstracting in theory and practice.3rd ed. Urbana: University of Illinois.
12. Lancaster, F. W. (1968). Information retrieval systems, characteristics, testing and evaluation. London: Facet Publishing.
13. Neelameghan, A. (1995). Online Database searching and Retrieval: Strategies, Procedures, Commands and Problems – A brief guide. Bangalore: Sarada Ranganathan Endowment for Library Science.
14. Pandey, S.K. Ed. (2000). Library Information retrieval. New Delhi: Anmol.
15. Van Rijsbergen, C.J. (2004). The Geometry of Information Retrieval. Cambridge: Cambridge University Press.
16. Vickery, B.C. (1970). Techniques of Information retrieval. London: Butterworths.
17. Voorhees, Ellen M. and Harman, Donna K. (2005). TREC: Experiment and Evaluation in Information Retrieval (Digital Libraries and Electronic Publishing). USA: MIT Press.

18. Walker (G) and Janes (J). Online retrieval: a dialogue of theory and practice.1993. Libraries Unlimited, Englewood, London.

CIS C211 – Informetrics

- Unit I - Informetrics: genesis, scope and definition; Librametry, Bibliometrics, Scientometrics & Webometrics
- Unit II - Classical Bibliometrics laws: Zip's law, Lotka's law, Bradford's Law of Scattering; Generalized Bibliometrics distributions. Fitting of Informetrics models : Bradford's Curve, Leimukuhler's Distribution, etc. Aspects of concentration measures; 80-20 rule, Price's Law relating to scientific productivity; Analysis of use statistics.
- Unit III - Growth and Obsolescence of literature: Various growth models; Aging factor and half-life: real vs. apparent; synchronous vs. diachronous.
- Unit IV - Citation analysis: Bibliographic Coupling and Co-citation Analysis
- Unit V - Science indicators: Impact factor, h-index, g-index, i-10; Mapping of Science

Suggested Readings

1. Baker, S L. and Lancaster, S.W. (1991). Measurement and evaluation of library services. 2 Ed. Arlington: Information Resources Press,.
2. Carpenter, R.L. and Vasu, E.S. (1979). Statistical methods for librarian. Chicago: ALA.
3. Donohue, J C. (1990). Understanding scientific literature: A Bibliometric approach. London: MIT.
4. Egghe, L., and Rousseau, R. (1990). Introduction to Informetrics: Quantitative methods in Library, Documentation and Information Science. Amsterdam: Elsevier.
5. Egghe, L. and Rousseau, R. (2001). Elementary statistics for effective Library and Information services management. London: ASLIB.
6. Garfield, E. (1979). Citation Indexing: Its theory and application in Science and Technology and Humanities. New York: John Wiley.
7. Meadows, A.J. (1974). Communication in Science. London: Butterworths.
8. Nicholas D. and Ritchil, M. (1979). Literature and Bibliometrics. London: Clive Bingley.
9. Rao, I. K.R. (1985). Quantitative Methods for Libreary and Information Science. New Delhi: Wiley Eastern.

10. Thelwall, M. (2009). Introduction to Webometrics: Quantitative web research for the Social Sciences . San Rafael, Calif: Morgan Publisher.

CIS C212 – Internship

To place students in a working library & information Centres environment of all kinds in the city or elsewhere and recommended by the Department or by choice of a candidate with the approval of Department Council; to enable students to be exposed in the varied units in a library & information Centre; to gain practical knowledge; and to give the students hands-on experience of what they are taught in the class room.

Internship shall be for a duration of **two months** (60 days) during the summer vocation of the I year (i.e., May and June). It carries 4 credits.

A Report should be submitted followed by a presentation for evaluation and grading.

Semester IV

CIS C213 – Content Management

- Unit I - Introduction to CMS; benefits; Principles of CMS; CMS Architecture; system and data integration in CMS.
- Unit II - Creating and managing web page and content on web page; fundamentals of planning dynamic websites
- Unit III - Overview of CMS software such as Wordpress, Drupal, Joomla, and others to create dynamic and flexible websites; Evaluation of CMS.
- Unit IV - Application of CMS; CMS and community information systems; document management, records management, digital assets management

Suggested Readings

1. Arthur, M.H. (2006). Expanding a digital content management system for the growing digital media enterprise. Boston: Elsevier Focal Press.
2. Barrie, M. N. (2009). Joomla! 1.5: a user's guide: building a successful Joomla! Powered website. Upper Saddle River, NJ: Prentice Hall.

3. Bradford, L. E. (2008). Content management systems in libraries: case studies. Lanham, MD: Scarecrow Press.
4. Hal Stern, Brad Williams and David Damstra. (2010). Professional WordPress: design and development. Indianapolis, IN: Wiley Pub., Inc.
5. Janet Majure. (2010). Teach yourself visually WordPress. Indianapolis, IN: Wiley Pub., Inc.
6. Jason, C. and Helen, F. (2008). Using Moodle. Sebastopol, CA: O'Reilly Community Press.
7. Jen, K.P. and Sarah, E. (2010). Joomla! Start to finish. Indianapolis, IN: Wiley Pub., Inc.
8. Jennifer Marriott and Elin Waring. (2011). The official Joomla! Book. Upper Saddle River, NJ: Addison-Wesley.
9. Mauthe, A. and Thomas, P. (2004). Professional Content Management Systems: Handling Digital Media Assets. John Wiley & Sons.
10. Ric, S. and Brice, D. (2011). Drupal 7 bible. Indianapolis, IN: Wiley.
11. Ron, S. and Kenneth, C. (2010). Using Joomla. Beijing; Cambridge [Mass.]: O'Reilly.

CIS C214 – Web Technology

- Unit I - Mark-up Languages: SGML, HTML, XML, TCP / IP, FTP, SSHD; Common HTML Commands
- Unit II - Web servers: Apache, IIS.
- Unit III - CGI Programming: Introduction to Java scripts. PHP.
- Unit IV - Protocols: SOAP. Open URL; Relevant W3 Standards and Protocols
- Unit V - Search Engines, cluster based search engines and building search engines. Search Algorithms. Security Issues
- Unit VI - Social networking tools; Semantic web; RSS feeds; Webcasts, Podcasts, Blogs.

Suggested Readings

1. Bates, Chris. (2003). XML in theory and practice. Chichester: John Wiley.

2. Benz, B. and Durant, J.R. (2003). XML 1.1 Programming Bible (Covers J2EE, Java, Databases, Web Services and .NET). New Delhi: Wiley Publishing.
3. Blood, Rebecca. (2002). The Weblog Handbook: Practical Advice on Creating and Maintaining Your Blog. Cambridge: Perseus Publishing.
4. Bradley, Phil. (2007). How to use web 2.0 in your library. London: Facet Publishing.
5. Campesato, O., and Nilson, K. (2011). Web 2.0 fundamentals with Ajax, development tools, and mobile platforms. Sudbury, Mass: Jones and Bartlett Publishers.
6. Clyde, Laurel. (2004). Weblogs and libraries. Oxford: Chandos Publishing.
7. Cox, Christopher N. (2006). Federated search: solution or setback for online library services. Philadelphia: The Haworth Press.
8. Donnelly, V. (2000). Designing easy-to-use websites: a hands-on-approach to structuring successful websites. Boston: Addison-Wesley.
9. Evans, Woody. (2009). Building library 3.0: issues in creating a culture of participation. Oxford: Chandos Publishing.
10. Governor, J., Nickull, D., and Hinchcliffe, D. (2009). Web 2.0 architectures. Sebastopol, CA: O' Reilly Publishers
11. Griffiths, Peter. (2004). Managing your internet and intranet services: the information professional's guide to strategy. 2nd ed. London: Facet Publishing.
12. Kroski, Ellyssa. (2008). Web 2.0 for librarians and information professionals. New York: Neal Schuman Publishers.
13. Lynch, P J. and Horton, S. (2009). Web style guide: basic design principles for creating web sites. 3rd ed. London: Yale University Press.
14. Shelly, G. B., and Frydenberg, M. (2011). Web 2.0: concepts and applications. Boston, MA: Course Technology.
15. Shuen, A. (2008). Web 2.0: a strategy guide. Sebastopol, CA: O'Reilly Media.
16. Vince, J. (2004). Introduction to virtual reality. London: Springer.
17. Wise, Richard. (2000). Multimedia: a critical introduction. London: Routledge.

- Unit I - Digital Libraries : Concept and definition; Historical development of Digital Libraries. Copyright and license issues.
- Unit II - Digitization Process : Software, hardware and best practices; Scanners and scanner types; OCR and OCR software;
- Unit III - Technology for DLs: Open source software; Dspace, GSDL : Features and comparative study of Dspace, Eprints and Fedora; Open Standards and File formats, Harvesting metadata, OAI-PMH and DL Interoperability;
- Unit IV - Digital Library Architecture; Grid architecture. Open URL integration. Digital Preservation : Persistent identifiers : DOI and CNRI Handles; Multilingual digital repositories and Cross-language information retrieval
- Unit V - Lab. Practice using GSDL / D-Space.

Suggested Readings

1. Andrew Cox. (2010). Introduction to Digital Library Management. London: Facet Publishing.
2. Andrews, J. (2010). Digital Libraries. London: Ashgate
3. Chowdhury, G.G. (2003). Introduction to Digital Libraries. London: Facet Publishing.
4. Costantino Thanos, Maristella Agosti. (2002). Research and Advanced Technology For Digital Libraries: 6th European Conference, *ECDL 2002*, Rome. New York: Springer.
5. Cox, Christopher N. (2006). Federated search: solution or setback for online library services. Philadelphia: The Haworth Press.
6. Dahl, Mark et al. (2006). Digital Libraries: Integrating content and systems. London: Chandos Publishing.
7. David Nicholas and Ian Rowlands. (2010). Digital Consumers Reshaping the information professions. London: Facet Publishing
8. Donnelly, V. Designing. (2000). Easy-to-use websites: a hands-on-approach to structuring successful websites. Boston: Addison-Wesley.
9. Evans, Woody. (2009). Building library 3.0: issues in creating a culture of participation. Oxford: Chandos Publishing.
10. Fenner, Audrey. Ed. (2005). Managing Digital Resources in Libraries. New York: Haworth

11. Griffiths, Peter. (2004). Managing your internet and intranet services: the information professional's guide to strategy. 2nd ed. London: Facet Publishing.
12. Jenny Craven. (2010). Web Accessibility Practical advice for the library and information professional. London: Facet Publishing.
13. Karen S.W., Marilyn B and Stone, T. A. (2003). Electronic publishing: The definitive guide. UK : Hard Shell Word Factory.
14. Kroski, Ellyssa. (2008). Web 2.0 for librarians and information professionals. New York: Neal Schuman Publishers.
15. Liu, Jia. (2007). Metadata and its applications in the digital library: approaches and practices. London: Libraries Unlimited.
16. Lynch, P J and Horton, S. (2009). Web style guide: basic design principles for creating web sites. 3rd ed. London: Yale University Press.
17. Marilyn Deegan and Simon Tanner. (2010). Digital Futures Strategies for the information age. London: Facet Publishing.
18. Pitkin, G. M. Ed. (1996). National Electronic Library: A Guide To The Future For Library managers. London: Greenwood Press.
19. Richard, J. (2006). The institutional repository. Oxford: Chandos publishing.
20. William, Arms. (2005). Digital Libraries. New Delhi: Anne.
21. Witten, Ian H, Boddie, Stefan and Thompson, John. (2006). Greenstone digital library user's guide. New Zealand: New Zealand Digital Library Project.

Electives

CIS E201 Project

A Project is a course work to be undertaken during the Fourth Semester. The project work shall be carried out under the supervision of the faculty of the Department. A written report shall be submitted for evaluation followed by viva-voce examination.

CIS E202 Knowledge Management

UNIT I Knowledge Management: Concept and definitions – Need for Knowledge Management in the emerging and changing business environment – Understanding

knowledge; Types of knowledge - explicit and tacit knowledge – Knowledge works changing role of Library and Information professionals.

- UNIT II Knowledge creation and capturing Knowledge creation model – Capturing tacit Knowledge
- UNIT III Knowledge codification and organization: Knowledge base-Knowledge mapping, decision trees, decision tables a frames etc.
- UNIT IV Knowledge transfer and sharing steps in knowledge transfer. Knowledge transfer in E-World, role of Internet E-Business / E-Commerce.
- UNIT V Tools for knowledge Management - Neural network Data mining – Legal and ethical issues in Knowledge Management

Suggested Readings

1. Abell Angela and Nigel Oxbrow, *Competing with Knowledge: The Information Professional in the Knowledge Management Age*. London: Facet Publishing, 2001.
2. Blaise Cronin. ed. *Information Management: from strategies to action* London Aslib,1985.
3. Bikowrtx W. R.: *Knowledge Management* Delhi PHI. 2000
4. Chorafas D. N. *Knowledge Revolution*. 1968.
5. Crawford, Marshali Jean: *Information Broking: a new career in information work*, London: L. A. 1988
6. Dhiman A.K.: *Knowledge Management for Librarians*. New Delhi: Ess Ess, 2009
7. Galatin, Malcolm & Laiter, Robert D eds. *Economics of Information* London : Nijhoff ,1981
8. Gurnsey, John and White Martin. *Information Consultancy* London Clive Binglev 1989.
9. Koenig Michael E.D. and Shrikantaiah(Ed): *Knowledge Management: lessons learned what works and what doesn't*, New Delhi: Ess Ess, 2008
10. Koenig Michael E.D. and Shrikantaiah T.K.(Ed): *Knowledge Management in Practice : connection & context*, New Delhi: Ess Ess, 2008
11. Kumar (PSG) *A Student's Manual of Library &Information Science* Delhi : BR Publishing

House,2002

CIS E203 Marketing of Information

UNIT I	Marketing Concepts; - Marketing of Information- Corporate Mission; Marketing Strategies
UNIT II	Portfolio Management BCG Matrix Model; Product Market Matrix; Product Life Cycle
UNIT III	Marketing Mix; Kotler's Four C's; McCarthy's Four P's
UNIT IV	Market Segmentation and Targeting; Geographic and Demographic Segmentation; Behavioral and Psychographics Segmentation; User Behavior and Adoption
UNIT V	Marketing Plan & Research; Corporate Identity Marketing Plan; Marketing Research

Suggested Readings

1. Cawkell, A.E., Ed. (1987). Evolution of an Information society. London: ASLIB.
2. Cronin, B (1981). Marketing of Library and Information services. London: ASLIB.
3. Eileen, E. D.S. (2002). Marketing concepts for Libraries and Information services. 2ndEd. London: Facet Publishing.
4. Jain, A.K and others Ed. (1995). Marketing of Information products and services. Ahmedabad: IIM.
5. Kotler, P. (1975). Marketing for non-profit organization. Prentice-Hall.
6. IASLIC (1988). Marketing of Library and Information services (13th IASLIC Seminar papers), Calcutta: IASLIC

CIS E204 Electronic Publishing

UNIT I	Concept, Scope, Nature & Types
UNIT II	Evolution, Current Trends in E-publishing
UNIT III	OAI, Open access sources, Pricing & Pricing models
UNIT IV	Format & Structure, Languages of E-publishing
UNIT V	E-Publishing - Socio-economic and Legal issues

Suggested Readings

1. Karen S. W. Marilyn B, Stone, T. A. (2003). Electronic publishing: The definitive guide. UK: Hard Shell Word Factory.
2. Klostermann, D. (2011). The e-book handbook - A thoroughly practical guide to formatting, publishing, marketing, and selling your e-book. Cambridge: Full Stop.
3. Loton, T. (2011). E-book publishing DIY: the do it yourself guide to publishing e-books, 2nd ed. United States: LOTONtech.
4. Meckler, L. (2011). E-book formatting, self-publishing, marketing tips updated . USA: Linda E meckler on smash words.
5. Sahida, f. k. (2010). Publishing e-book for dummies. USA: CreateSpace
6. Schuster, C. (2011). E-publishing for writers: Trends an opportunities/Fall 2011 (Kindle Edition ed.). UK: Books to Go Now

CIS E205 Documentation

- UNIT I Scientific communication - Definition, types and forms of scientific communication (formal & informal)
- UNIT II Scientific Literature/ Information Sources - Primary, Secondary Sources in Print, Electronic and Online.
- UNIT III Literature Search - Search Statement and Strategies, Search Processes; Information gathering tool.
- UNIT IV Principles/Guidelines of Scientific Writing (Practical Module)
- The mechanics of data organization and presentation - oral, posters, writing/graphic - journal articles, thesis/dissertations and research/project proposals for funding.
- UNIT V Documentation - Ethics - Academic Integrity & Plagiarism, Style Manuals and Citation practice.

Suggested Readings

1. Bennett, David and Jennings, Richard, Successful Science Communication. CUP: 2011. . Day, Robert; Sakaduski, Nancy. Scientific English: A Guide for Scientists and Other Professionals. Ed. 3. ABC-CLIO. 2011.

2. Hancock, Elise. Ideas into words: mastering the craft of science writing. Johns Hopkins University Press, 2003.
3. Jean-Luc Lebrun. Scientific Writing 2.0: A Reader and Writer's Guide. NJ: World Scientific Publishing Co.: 2011.
4. Jonathan Monroe. Writing and Revising the Disciplines. Cornell University Press, 2002.
5. Lindsay, D R. Scientific writing thinking in words. Collingwood, Vic.: CSIRO Pub., 2011.
6. Matthews, J R and Matthews R W. Successful Scientific Writing: A step-by-step guide for biological and medical scientists. Ed.3. NY: CUP:2008.
7. Nicholas J. Higham. Handbook of writing for the mathematical sciences. Philadelphia: Society for Industrial and Applied Mathematics, 1998.

CIS E206 Academic Libraries

- UNIT I Academic Libraries: Types; Objectives and Functions.
- UNIT II Collection Development; Problems in Collection Organisation; Collection Development Programmes
- UNIT III Academic Library Services
- UNIT IV Financial Management of Academic Libraries; Personnel Management; Norms and patterns of staffing
- UNIT V Role of UGC and other bodies in promoting Libraries in Universities, Colleges and Other Institutions of Higher Learning
- UNIT VI Resource sharing: Need and Objectives; Library consortia

Suggested Readings

1. Bavakutty, M,(1986). College Libraries in India, Vol.7: A case study, West Yorkshire: MCB University press.
2. Bavakutty, M.(1988). Libraries in higher education. New Delhi: ESS ESS.
3. Cowley, John. (1982). Personnel management in Libraries.
4. Gelfand, M.A.,([1968]). University Libraries for developing countries. [Paris]: Unesco

5. Henry, M and Morgan, S. (2002). Practical strategies for modern academic Library. London: Aslib-IMI.
6. Isaac, D. et.al. (1993). Academic Libraries: Role in the national development.
7. Jenkins C. and Mary M., (1996). Collection development in academic Libraries.
8. Mathu, M.V. and Arora, R.K. Indian University Library System revitalization.
9. Rachel Applegate(2010). Managing the small college library. Santa Barbara, Calif. : Libraries Unlimited.
10. Saini, (1976). Library organisation for higher education.
11. Sewa Singh and Arora, M. Handbook of college Libraries: Problems, finance and related aspects.
12. Srivastava S.N. and Verma S.C., (1980). University Libraries in India. New Delhi: Vikas. Trehan, G.L., (1985). College Library development.

CIS E207 Community Information Services

Unit I	Notion and Nature; Types & Levels
Unit II	Types – Academic, Special & Public Environments
Unit III	Use & User Study
Unit IV	Diffusion of Community Information
Unit V	Evaluation of Community Information Services

Suggested Readings

1. Atman, E. Ed. (1980). Local Library administration in association with International City Management Association. 2 nd Ed. Chicago: ALA.
2. Penna, C.A. et.al. (1977). National Library and Information services, handbook for planners. London: Butterworths.
3. Mittal, R.L. (1971). Public Library law. Delhi: Metropolitan.
4. American Library Association(1966). Minimum standards for public Library system. Chicago: ALA.
5. White, Carl M. Ed.(1964). Bases of modern librarianship. New York: Pergmon.
6. Kesavan, B.S., (1961). National Library of India, Calcutta: National Library.

7. Great Britain, Ministry of Education (1959). Standards of public Library services in England and Wales. Report. London: HMSO.
8. Esdails, A. (1957). National Libraries of the world. London: Library Association.
9. McCloven, L.R. (1951). Public Library extension, Paris. UNESCO.
10. Ranganathan, S.R. (1950). Library development plan: A 30 year programme for India with draft Library bill, Delhi: Delhi University.
11. McCloven, L.R., (1942). Public Library system of Great Britain: Report on its present conditions with proposals for reorganization. London: Library Association.

CIS E208 Information System for Industry

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|--------|-----------------------------------------------------------------------------------------------------------------------|
| Unit 1 | Industry & Industrial Library – Definition, Types, Features & Functions. National Information Systems & Associations. |
| Unit 2 | Management of Industrial Library - Finance, Human Resources, Material, Collection. |
| Unit 3 | Information Products & Services - Types and Features. |
| Unit 4 | Use & User studies |
| Unit 5 | Case studies |

Suggested Readings

1. Ashworth, W. (1985). Handbook of special librarianship and Information work. 4th Ed. London: ASLIB.
2. Autherton, P.(1977). Handbook of Information systems and services. Paris: UNESCO.
3. Bakewell, K.G.B., (1969). Industrial Libraries throughout the world. Oxford: Pergaman.
4. Burket, J. (1968). Trends in special librarianship. London: Clive Bingly.
5. Chen, C. (1987). Scientific and Technical Information Sources. 2nd Ed. The MIT Press.
6. Claderhead, P . Ed.(1972)l. Libraries for professional practice. London: Architectural Press.
7. Conkling, T. W. & Musser, L.R Ed.(2002). Engineering Libraries: Building collections and

8. delivering Services. Haworth Press. Krishan K. (1973). Research Libraries in the developing countries. Delhi: Vikas.
9. Hurt, C. D.(1998). Information sources in Science and technology. 3rd Ed. London: Libraries Unlimited.
10. Jackson, E.B., (1985). Special librarianship: A new reader. Metuchen: Scarecrow Press.
11. Lord, C. R. (2000). Guide to Information sources in engineering. London: Libraries Unlimited.
12. Macleod, R. A. & Corlett, J.(2005). (Ed.): Information sources in engineering (Guides to Information Sources). New Delhi: K.G.Saur Publications.
13. Malinowsky, H. R.(1994). Reference Sources in Science, engineering, medicine and agriculture. Oryx Press.
14. Mount, E. (1984). Management of scientific and technical Libraries. New York: Haworth.
15. Pruett, N.J. (1986). Scientific and Technical Libraries. 2vols. Orlando: Academic.
16. Singh, S.P and Krishan K.(2005). Special Libraries in the electronic environment. New Delhi: Bookwell
