Vidyasagar University
Dept. of Library and Information Science
MLISc Syllabus

Semester I				Semester II			
Papers	**Full Marks**	*** Internal Assessment**	**Final Exam. Marks**	**Papers**	**Full Marks**	*** Internal Assessment**	**Fina Exam Mark**
IA: Information and Communication	50	10	40	IB: Information and Society	50	10	40
IIA: Knowledge Organisation (Theory)	50	10	40	IIB: Knowledge Organisation (Practice)	50	10	40
IIIA: Resource Description (Theory)	50	10	40	IIIB: Resource Description (Practice)	50	10	40
IVA: Information Sources, Products and Services	50	10	40	IVB: ** Information Analysis and Consolidation (Practice)	50	-	50
VA: Information Retrieval – I	50	10	40	VB: Information Retrieval – II	50	10	40
VIA: Planning and Management of Information Systems and Services	50	10	40	VIB: Research Methodology and Quantitative Techniques	50	10	40
VIIA: Information and Communication Technology (Theory)-I	50	10	40	VIIB: Information and Communication Technology (Theory)-II	50	10	40
VIIIA: Information and Communication Technology (Practice)-I	50	10	40	VIIIB: Information and Communication Technology (Practice)-II	50	10	40

* Internal assessment will be done on the basis of Seminar Presentation / Class Test / Project / Viva-voce covering the topics of respective papers. The choice and decision regarding the basis of internal assessment will remain solely under the discretion of the respective subject teacher.

** Project on information analysis and consolidation will have to be submitted before the formal dissolution of semester classes.

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Paper – IA
Information and Communication
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Information Science : Nature, Property and Scope

- Information : Definition, Attributes, Kinds, Use, Nature and Characteristics ;
- Knowledge : Definition, 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 ;
- 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.

Unit – 2 : Information Generation and Communication

- Historical development ;
- Types of communication: Verbal and nonverbal, Formal and informal;
- Models of communication ;
- Barriers to communication and remedial propositions ;
- Information transfer process : Generation to utilization (Information eco-system) ;
- Information theory – Entropy ; measurement of information.

Unit – 3 : Class Test / Project / Seminar Presentation

Paper -IB
Information and Society
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation - 10

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 : What – Why – and How, 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: What – for Whom – Why – and How, Characteristics, changing role of information organizations and professionals, The developing world perspective;
- Information and Knowledge Management: Concepts and tools;
- Typology of information sectors ;

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- Globalization and Information Communication Technology.

Unit – 2 : Economics and Marketing of Information

- Economics of information : Concept, scope and objective ;
- Information economics vs. economics of information ;
- Demand and supply of information ;
- Production, distribution and consumption of information and knowledge ;
- Economic analysis models, cost-benefit analysis and cost effectiveness ;
- Marketing of information product and services : Planning, processes and strategies, market research.

Unit – 3 : Class Test / Project / Seminar Presentation

Paper – IIA
Knowledge Organisation (Theory)
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Theories of Library Classification

- Principles and postulates: Aristotle, Bacon, Harris, Richardson, Sayers, Brown, Bliss, Ranganathan and Vickary;
- 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, comparision 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.

Unit – 3 : Classification and the Internet

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

Unit – 4 : Class Test / Project / Seminar Presentation

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Paper – IIB
Knowledge Organisation (Practice)
Full Marks – 50
Exam Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Colon Classification(Ed. – 7) Practice

Unit – 2 : Class Test / Project / Seminar Presentation

Paper – IIIA
Resource Description (Theory)
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Cataloguing Codes and Bibliographic Description

- Construction of Cataloguing Codes – essential components, and levels;
- Principles and Evolution of Cataloguing Codes and Standards for Bibliographic Description:

  Standards for Bibliographic Description;
  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.

Unit – 2 : Cataloguing of Non-print Materials

- Cataloguing of non-print materials including electronic resources :

  Principles of Cataloguing for different types of non-book materials;
  Development of Model for Bibliographic Record
  – FRBR, FRAD, etc.;
  Implication of FRBR and FRAD on Resource Description.
- Cataloguing of Internet resources;
- Metadata schemas: Generic and Domain Specific.

Unit – 3 : Class Test / Project / Seminar Presentation

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Paper – IIIB
Resource Description (Practice)
Full Marks – 50
Exam Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Cataloguing of Non-book Materials by AACR 2R and MARC 21

Unit – 2 : Class Test / Project / Seminar Presentation

Paper – IVA
Information Sources, Products and Services
Full Marks – 50
Final Exam – 40
Class Test / Project / Seminar Presentation - 10

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 products: Utility, design issues;
- Information newsletters, house bulletins and other in-house communications;
- Trade and product bulletins;
- State-of-the-art reports, reviews, trend reports and technical digests;
- IAC;
- Information services: Concepts, definition, need, requirements and trends;
- Utility and design of alerting services (CAS & e-CAS, SDI & e-SDI);
- Bibliographic, referral, literature search, document delivery and translation services;
- ICT enabled information services (user services, MIS support services, web based services, etc.).

Unit – 3 : Information Institutions and Systems

- Libraries and information centers: Types and their organization;
- Data Centres and Referral Centers;
- Information analysis and consolidation centers;
- Information systems: Structure, functions, objectives, features and system design;

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- Global information systems (INIS, AGRIS, MEDLARS etc.);
- Indian information systems (science & technology, biotechnology, medical science, agricultural science, environmental science, statistics);
- Role of international organizations in the development of systems and services (IFLA, UNESCO, FAO, UNEP, UNDP, FID CILIP etc.).
- Humanities and Social Science Information System

Unit – 4 : Library Networks and Consortia

- Resource sharing and library networking: Need, structure and management;
- Global library networks and their services (OCLC, RLIN, WLN, BLAISE etc);
- Indian library networks and their services (INFLIBNET, DELNET and others);
- Library consortia: Scope, need, objectives, functions, features and services;
- Global and Indian library consortia initiatives (ICOLC, SPARC, INDEST, UGC-Infonet, FORSA etc.).

Unit – 5 : Class Test / Project / Seminar Presentation

Paper – IVB
Information Analysis and Consolidation (Practice)
Full Marks – 50
Project – 40
Viva-voce - 10

Design and development of an IAC product like trend report, state-of-the-art report, digest, etc.

Unit – 1 : IAC Product design

Unit – 2 : Viva-voce

Paper – VA
Information Retrieval – I
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Basic Concepts of Information Storage and Retrieval Systems

- Role of libraries and other information agencies in information transfer cycle;
- Objective of IR systems: Document transfer / delivery Vs. Assimilation / information transfer;
- Kinds, Functions and components of IR systems;
- Design of IR system: Points of views, considerations, and phases in designing.

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Unit – 2 : Indexing Languages / Controlled Vocabulary

- Meaning, structure , objective and differences with Natural Language ;
- Controlled and Natural indexing;
- Vocabulary Control devices : Meaning, Importance, types, characteristic and interrelationship
    - Classification Scheme,
    - Subject Heading List,
    - Thesauri and Authority lists,
    - Thesaurofacet and Classarus.

Unit – 3 : Indexing Systems and Techniques

- Need and purpose ;
- Indexing policy : Exhaustivity and specificity ;
- Critical study of the contributions of Cutter, Kaiser, Ranganathan, Farradane, Coates, etc. ;
- Pre and Post-coordinate Indexing

    - Chain
    - POPSI
    - PRECIS
    - COMPASS
    - Relational Indexing
    - Uniterm;

- Keyword indexing, and citation indexes;
- Use of classification in alphabetical indexing.

Unit - 4 : Users and Information Retrieval

- Users - their nature and information needs, Expressed and unexpressed needs. Information behaviour. users 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

Paper – VB
Information Retrieval – II
Full Marks – 50
Examination Marks – 40
Class Test / Project / Seminar Presentation – 10

Unit – 1 : Inhouse, CD-ROM and Online IR

- Library Catalogue and OPAC;
- CD-ROM IR;

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- Online IR;
- Text and Multimedia IR;
- Web IR;
- Use of classical library and information retrieval tools and techniques in Internet.

Unit – 2 : Search Strategy

- Prerequisites, Presearch 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;
- Cross database searching.

Unit - 3 : Evaluation of IR System

- Meaning, points of view, and purpose;
- Levels of Evaluation
    - System effectiveness
    - Evaluation of benefit
    - Cost effectiveness
    - Cost benefit evaluation;
- Evaluation Criteria
    - Traditional and classical retrieval parameters
    - New retrieval parameters;

- Evaluation Methodology and steps;
- Evaluation Experiments
    - Cranfield 1 and 2
    - MEDLARS Test
    - SMART retrieval experiment
    - STAIRS Project
    - TREC 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

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Paper – VIA
Planning and Management of Information Systems and Services
Full Marks – 50
Examination Marks –40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Management Thought and Planning of Information System

- Approaches or Schools to the study of Management
  Management Philosophy;
  Environment on Management Philosophy;
  Management Schools of thought – Scientific, Classical, Bureaucratic, Human Relations, Mathematical System, Situational / Contingency theory, Decision theory – Their applications in Library and Information Centres.

- Planning Methodology
  Nature and characteristic of planning, factors influencing planning;
  Principles of planning;
  Various steps in planning;
  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
  System Analysis;
  System Design;
  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 of Personnel Management;
  Performance Appraisal;
  Interpersonal Relation, Group dynamics, Johari Window;
  Leadership – different theories, styles, approaches and models;
  Communication – methods of communication, types of communication model;
  Motivation – theories of motivation, sources of motivation.

- Total Quality Management
  Definition, Concept, Elements, Objectives, Benefits;
  Total Quality Management for Library and Information Science;
  Relevance and importance of Total Quality Management;
  Quality improvement efforts;
  Quality improvement programmes.

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- Stock Management
  Collection development, different types of documents, selection, ordering, acquisition and technical processing of documents;
  Stock Maintenance;
  Circulation;
  Withdrawal;
  Preservation and Conservation;
  Stock Verification – planning and procedure.

- Financial Management
  Sources of Finance, Principles of Expenditure;
  Budgeting methods, types of Budget;
  Budgetary techniques – types of costs, cost analysis and approaches;
  Outsourcing.

Unit – 3 : Recent Trends in Management

- Managing Change
  Concept of change;
  Changes in procedures, methods;
  Problems in incorporating change;
  Techniques of Managing change.

- Globalization and Management
  Globalization – what, reason, process, dimension, argument in favour and against impact of globalization on management practices in Indian Library and Information Services.

Unit – 4 : Class Test / Project / Seminar Presentation

Paper – VIB
Research Methods and Quantitative Techniques
Full Marks – 50
Examination Marks –40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Research Methods

- Research: Meaning, Scope, Objective and Characteristics; Kinds – Fundamental / Basic and Applied; and Research Methods;
- Writing Research Proposal;
- 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;

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- Role of Libraries / Information Centres in Research;
- Trends of Research in Library and Information Science.

Unit – 2 : Quantitative Techniques

- Statistical Methods: Data Collection and Presentation; Set Theory; Correlation and Regression Analysis; Sampling Techniques; Probability Theories; Hypotheses Testing – Non-parametric tests (Chi-square test, Sign test), Parametric tests; Variance analysis.

- Librametrics, Bibliometrics, Informetrics, Scientometrics, and Webmetrics; Bibliometric Laws – Lotka's Law, Bradford's Law – Vickery's Interpretation and Brook's Work, Zipf's Law; Characteristics of Bibliometric distributions; Ageing and Obsolescence study – Half-life Calculation; Citation Analysis and Co-citation Coupling, Rank and Size Frequency Distribution; Validity of Bibliometric Measurement and application of Bibliometric laws in Libraries and Information Centres.

Unit – 3 : Class Test / Project / Seminar Presentation

Paper - VIIA
Information and Communication Technology (Theory) - I
Full Marks – 50
Examination Marks –40
Class Test / Project / Seminar Presentation - 10

Unit – 1 : Computer Operating System

- Operating System – 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

- Files, files organization and file structures; Indexing and hashing;
- Bibliographical database management system;
- Database architecture and data modeling;
- Open source RDBMS (MySQL and PostGreSQL).

Unit – 4 : Computer Communication System

- Basics of computer networking; Network hardware, topology and cabling;
- Network features and relationships (peer-to-peer and client/server relationships);
- OSI networking model;

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- TCP/IP reference model;
- Internet and intranet.

Unit – 5 : Class Test / Project / Seminar Presentation

Paper - VIIB
Information and Communication Technology (Theory) - II
Full Marks – 50
Examination Marks –40
Field Study - 10

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 and future of library automation software.

Unit – 2 : Digital Library System

- Introduction to 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 in different parts of India 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 formal dissolution of classes. The choice of field in which the study is to be conducted will remain under the discretion of the Departmental Committee.

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Paper – VIIIA
Information and Communication Technology (Practice) - I
Full Marks – 50
Examination Marks –40
Class Test / Project / Seminar Presentation / Viva-Voce - 10

Unit – 1 : Linux User Level Tasks

Unit – 2 : Linux System Administration Tasks

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

Paper – VIIIB
Information and Communication Technology (Practice) - II
Full Marks – 50
Examination Marks –40
Class Test / Project / Seminar Presentation / Viva-Voce - 10

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

Unit – 5 : Unicode based Multilingual Automated and Digital Library System

Unit – 6 : Class Test / Project / Seminar Presentation /Viva-Voce

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