Course – CCT- 01: INFORMATION AND COMMUNICATION

Unit-I Information and Communication

- Information; Characteristics, Nature, Value and Use of Information
- Conceptual difference between Data, Information and Knowledge
- Communication of Information : Information generation
- Communication channels, models and barriers
- Trends in Scientific Communication

Unit-2 Information Science

- Definition, Scope and Objectives
- Information Science as a discipline and its relationship with other subjects

Unit-3 Library, Information and Society

- Genesis and characteristics and implications of Information Society
- Changing role of Library and Information Centres in Society
- Intellectual Property Act, Right to Information Acts
- Concept of freedom, censorship, data security and fair use
- Policies relating to information, Right to Information including science and technology, education
- International and National Programmes and Policies (NAPLIS) IT and Library UAP, UBC

Unit-4 Economics of Information

- Information as economic resource /Commodity.
- Information Industry-Generators, providers and intermediaries.
- Marketing of Information
Unit-5 Knowledge Management

- Knowledge Management: Definition, Need and Implementation
- Information Management:
- Information Management vs Knowledge Management.

Unit-6 Informetrics

- Concept and Definition
- Citation Analysis
- Bibliographic Coupling.
- Librametry, Bibliometrics and Scientometrics, Webometrics: Concept, Scope, Usefulness.
- Bibliometric Laws – Bradford, Lotka and Zipf

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Course – CCT- 02: LIBRARY AUTOMATION & NETWORKING

Unit-1 Library Automation
- Definition, need, purpose and advantages.
- Planning for Automation Procedure: Steps in Automation: Developing a basic Technology Plan.
- Identifying goals and objectives, Describing existing library services and technology, Feasibility Study, Assessing needs and priorities, Preparing strategic Plan, Hardware and Software selection and Implementation
- Library Automation Software Packages: their study and composition

Unit-2 Areas of Automation
- Design and development of automated system for Acquisition, Cataloguing, Access to Catalogue (OPAC), Circulation and Serial Control
- Barcode Technology: Meaning, need, purpose and advantages. Types of barcodes: Dumb /Generic barcode and smart barcode – their application.

Unit-3 Networking and Networks
- Networking: Concept need and advantages. Basic components of network
- Network Topologies – Star, Ring, Bus, and Tree.
- Wireless Networking.
- Types of Networks – LAN, MAN, WAN.
- Local Area Network – Types and Topologies
- Networks: General and Bibliographic.
- General – ERNET, NICNET, INFONET
- Library Networks: OCLC, BLAISE, JANET, INFLIBNET, DELNET: Their objectives, Functions, Services and Activities.

Unit-4 Internet
- Internet: Concept, Features, Services.
- Search Engines – Concept. Types–Search Engines and Meta Search Engines. Advantages in using Search Engines
- Internet Searching: Web Browsers – Purpose, Functions, Facilities available with different Browsers.
- Internet Security
- Internet Reference Sources: Identification, accessing.
- Various sources useful for librarians in providing Reference Services.
- Evaluation of Internet Information Sources – Need, Methods / Techniques

Unit-5 Artificial Intelligence and Web Designing
- Artificial Intelligence (AI): Concept and Use.
- Web: Concept, Usefulness. Content Creation for Web.
- Web Design – Methods, Steps.
Course – CCT- 03: RESEARCH METHODS AND STATISTICAL TECHNIQUES

Unit-1 Research
- Concept, Meaning, Need and Process of Research
- Types of Research – Fundamental and Applied including inter disciplinary and multidisciplinary approach, LIS Research in India.

Unit-2 Research Design
- Conceptualisation and Operationalisation
- Types of Research Design
- Identification and Formulation of Problem
- Hypothesis; Nominal and Operational Definition
- Designing Research Proposal
- Ethical aspects of Research
- Literature Search – Print, Non-print and Electronic sources

Unit-3 Research Methods
- Scientific, Historical and Descriptive Methods
- Survey Method and Case Study Method
- Experimental Method and Delphi Method

Unit-4 Research Techniques and Tools
- Questionnaire, Interview and Observation
- Scales and Check lists
- Library Records and Reports
- Sampling Techniques

Unit-5 Data Analysis and Interpretation
- Descriptive Statistics-Measures of Central Tendency; Mean, Mode, Median
- Tabulation and Generalisation
- Measures of dispersion, variance and covariance, correlation, regression
- Standard Deviation
- Graphical presentation of data-bar, pie-line graphs, histograms etc.
- Inferential Statistics

Unit-6 Research Reporting
- Structure, Style, Contents
- Guidelines for Research Reporting

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Course – CCT- 06: INFORMATION PROCESSING & RETRIEVAL

Unit-1 Information Storage and Retrieval Systems

- Concept, components, IR tools
- Information Analysis, repackaging and consolidation: Concept, purpose
- Content Creation / Content Development
- Content Analysis: Meaning, Purpose. Application in LICs

Unit-2 Indexing

- Concept and processes
- Indexing Languages, types, characteristics
- Vocabulary control – Tools of vocabulary control.
- Thesaurus – Structure and functions. Design / Construction of Thesaurus
- Subject Headings – LCSH and SLSH – Structure and Functions

Unit-3 Indexing Techniques

- Pre and post-coordinate indexing
- Chain Indexing, PRECIS. Uniterm, Keyword and Citation Indexing
- Trends in Automatic Indexing
- Automated abstracting and translation

Unit-4 Bibliographic Description

- Standards for bibliographic Description: ISBDs, MARC, CCF and MARC 21.
- METADATA: Concept, Use, purpose, functions and overview of protocols and features of different formats- Templates, Dublin Core etc, Use of Metadata
- Data Mining, Data Warehousing

Unit-5 Information Retrieval

- Retrieval methods – manual and automated
- Search processes and strategies: Preparation of query, steps in search strategy.
- Strategies: Boolean Logic, Building Block search, Citation Pearl Growing, Successive Facet strategies, Pairwise Facet strategies, Word Proximity, Truncation.
- Search tools – search engines, meta-search engines, Subject directories, specialized databases
- Criteria for evaluation of IR Systems
Course – CCT- 07: INFORMATION TECHNOLOGY: APPLICATIONS

Unit-1 Information Technology
- Concept, definition and components of IT:
- Computer and Communication technologies
- Overview of computer technology: Hardware and Software
- Client -- Server Technology: Concept, Use and types of Servers

Unit-2 Communication Technology
- Switching Systems: Concept, Purpose, Types -- Circuit, Message and PSS
- Gateways, Ethernet, Hub/Switches, Ports-USB, serial, Parallel
- Communication Media – Twisted Pair, Coaxial, Optic Fibres, Satellite Communication,
- VSAT, Microwave.
- Wireless Communication: Concept – Networking, WAP / Wireless Internet, WLL, Cellular Communication.
- ISDN- Important concepts

Unit-3 Electronic Information
- Electronic / Digital Information
- Digitization – Concept, Procedures and Problems
- Input devices – OCR, Scanners, Cameras
- Software and hardware used for digitization.
- Data Compression. Image Formats (JPEG, GIF / BMP).
- Data Communication Concepts – Parallel and Serial; Synchronous & Asynchronous; Simplex, Half Duplex and Full Duplex

Unit-4 Communication Tools and Techniques
- Communication Tools and Techniques: An overview:
- Telex, fax, E-mail, Tele Text, Videotex, Tele Conferencing, Video Conferencing, Voice Mail. Hyper Text and Hyper Media, Bulletin Board Service
- Markup Languages – HTML, XML, DHTML, and SGML – Features.

Unit-5 Internet Communication
- Internet Communication: Internet as a communication tool. Facilities for communication. Features and Developments
- Internet Connectivity – Dial up, leased, ISDN, Digital Subscriber Lines (DSL). Bandwidth, Multiplexing.
- Data Security: Concept, need, purpose. Virus – Definition, effect. Security Methods, Firewall, Anti-virus software. SPAM

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Course – CCT- 08: MANAGEMENT OF LIBRARIES AND INFORMATION CENTRES

Unit-1 Management
- Management: Concepts, definition, nature and purpose
- Management: Schools of thought
- Management: Styles and approaches
- Functions of management and their relevance to libraries and information centres
- Planning: Concepts, need and purpose, principles of planning, planning process-steps and factors, Types of Plans, Management by Objective

Unit-2 The Library System
- Systems approach; Library system & its sub systems.
- System analysis & design.
- Project Management PERT/CPM.
- Reengineering. And SWOT
- DFD.

Unit-3 Decision Making, Organising and Quality Management
- Decision making: Concept, problems, process, aids, Management Information Systems (MIS)
- Organising: Concept, Models of organisational structure.
- Delegation of authority- Authority, Responsibility and Accountability.
- Organisational Communication: Concept and its role on management
- Quality management: Quality concept, element and application to libraries and information centres. Quality management and standards- ISO-9001 Quality Audit
- Total Quality management: Definition, scope and purpose and application to Libraries and information centres

Unit-4 Human Resource Management
- HR Planning, Personnel Policies, Staffing, Standards, Staffing patterns.
- Job Specification, Job Description, Job Analysis & Evaluation.
- Recruitment Procedures, Selection, Training and Development, Inter Personal Relationship
- Motivation: Concept and Theories.
- Management of Change: Concept, Need for Change, Impact, Strategies, Organization Culture, Promoting Change

Unit-5 Financial Management and Collection Management
- Resource Mobilisation
- Cost Effectiveness and Cost Benefit Analysis.
- Cost Accounting: Concept and Use.
- Outsourcing.
- Collection management: Problems and issues relating to selection, acquisition, maintenance and preservation of books, periodicals and other materials including digital materials.

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