

## **LIS - 506: Library Automation, Databases and Networking (Theory & Practice)**

**(4 Credits/100 Marks)**

### **Course Description:**

The daily operations of libraries in a variety of settings rely heavily on library automation. Students will get understanding of automation and technology abilities that will enable them to work in libraries, archives, museums, and information centres. This course is meant to give students not just hands-on experience with an ILS, but also the knowledge and skills to select, deploy, test, evaluate, and manage it. The course covers new technology and next-generation library automation tools that students should be familiar with in the profession.

### **Learning Objectives:**

1. To have a better understanding of the historical, current, and future tendencies in library automation and technological evolution;
2. To familiarise oneself with the major companies in the library automation sector and their distinctive ILS products, both proprietary and open source;
3. To provide hands on training in the use of library software, digital library software's, web catalogues, ILMS, creating institutional repository with open source institutional repository software, effective search of online databases and search engines for academic and research work, developing skills in web page designing and use of Google tools.

### **Course Outline**

#### **Unit - I: Library Automation**

**10 Hours**

Definition, Need, Purpose, Barriers, Advantages. Historical development. Planning for library automation. Evaluation of library automation systems. Criteria for evaluation. Evaluation techniques. Standards relevant to library automation.

Automation of Library Services /operations and application of modern technologies: Acquisition, Cataloguing, OPAC's, Circulation, Serials Control, CAS, SDI, ILL, Stock Verification, Reference Service, MIS, System Administration. Cloud based and Web based library automation.

Application of Barcode and RFID Technology for Library Functions. Application of Artificial Intelligence (ML, DL), Augmented Reality, Virtual Reality, Digital Libraries Software (DSpace, Greenstone).

#### **Unit - II: Data Communication and Computer Networks**

**10 Hours**

Introduction, Need for networking, Objectives, Advantages, Disadvantages. Data Communication – Components, Transmission Mode (Simplex, half duplex, full duplex), Analog and Digital Data Transmission, Data communication measurement (bandwidth). Transmission media (guided, unguided). Protocols and its functions, Communication Protocol (OSI Model). Network devices

(NIC, Repeater, Hub, Bridge, Switch, Router, Gateway, Modem), File server, Workstation, Wireless networks.

### **Unit - III: Practical**

**20 Hours**

Library Management System (LMS): Koha, e-Granthalaya, NewGenLib

Webcats and WebOPAC's: LC catalogue, OCLC etc.

Database searching and Internet searching, Search Engines

### **Unit - IV: Practical**

**20 Hours**

Digital Libraries Software: DSpace, Greenstone

Website /Blog Development using WordPress, Blogger, Google Sites.

### **Learning Outcomes:**

1. At the end of the course the students will be able to apply the concepts and new technologies of Information and Communication Technology to the various tasks in the libraries and also develop new services.
2. The students will be able to perform library related tasks using ILMS, create institutional repositories using open Digital Library Software, develop library websites and blogs, effectively search online databases for information retrieval for academic and research purposes and use web-based tools effectively for library related tasks.

### **References / Readings:**

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3. Jeanne, F. M. (2006). *A Librarian's Guide to the Internet: A Guide to searching and evaluating information*. Oxford: Chandos publishing.
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7. Lucy, A. T. (2005). *An Introduction to computer based library systems* (Ed.3 ed.). Chinchester: Wiley.
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10. Rao, R. (1996). *Library Automation*. New Delhi: New age International.
11. Rich, E. a. (1994). *Artificial Intelligence* (2nd Ed. ed.). New Delhi: T.M.H.
12. Vishwanathan., T. (1995). *Communication Technology*. New Delhi: T.M.H.
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#### **References - Websites**

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