

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

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

Learning Outcomes based Curriculum Framework (LOCF)



M.LIB.I.Sc. (Two-Year) Programme

Syllabus (2021-22)

Progressive from Semester-1

(As per National Education Policy 2020)

SCHOOL OF INTERDISCIPLINARY AND APPLIED SCIENCES

CENTRAL UNIVERSITY OF HARYANA, MAHENDERGARH

विद्याधनम् सर्वधनंप्रधानम्

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1. Background

Considering the curricular reforms as instrumental for desired learning outcomes, all the academic departments of Central University of Haryana made a rigorous attempt to revise the curriculum of undergraduate and postgraduate programmes in alignment with National Education Policy-2020 and UGC Quality Mandate for Higher Education Institutions-2021. The process of revising the curriculum could be prompted with the adoption of “Comprehensive Roadmap for Implementation of NEP-2020” in 32nd meeting of the Academic Council of the University held on April 23, 2021. The roadmap identified the key features of the Policy and elucidated the Action Plan with well-defined responsibilities and indicative timeline for major academic reforms.

The process of revamping the curriculum started with the series of webinars and discussions conducted by the University to orient the teachers about the key features of the Policy, enabling them to revise the curriculum in sync with the Policy. Proper orientation of the faculty about the vision and provisions of NEP-2020 made it easier for them to appreciate and incorporate the vital aspects of the Policy in the revised curriculum focused on ‘creating holistic, thoughtful, creative and well-rounded individuals equipped with the key 21st century skills’ for the ‘development of an enlightened, socially conscious, knowledgeable, and skilled nation’.

With NEP-2020 in background, the revised curricula articulate the spirit of the policy by emphasizing upon— integrated approach to learning; innovative pedagogies and assessment strategies; multidisciplinary and cross-disciplinary education; creative and critical thinking; ethical and Constitutional values through value-based courses; 21st century capabilities across the range of disciplines through life skills, entrepreneurial and professional skills; community and constructive public engagement; social, moral and environmental awareness; Organic Living and Global Citizenship Education (GCED); holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning; exposure to Indian knowledge system, cultural traditions and classical literature through relevant courses offering ‘Knowledge of India’; fine blend of modern pedagogies with indigenous and traditional ways of learning; flexibility in course choices; student-centric participatory learning; imaginative and flexible curricular structures to enable creative combination of disciplines for study; offering multiple entry and exit points initially in undergraduate programmes; alignment of Vocational courses with the International Standard Classification of Occupations maintained by the International Labor Organization; breaking the silos of disciplines; integration of extra-curricular and curricular aspects; exploring internships with local industry, businesses, artists and crafts persons; closer collaborations between industry and higher education institutions for technical, vocational and science programmes; and formative assessment tools to be aligned with the learning outcomes, capabilities, and dispositions as specified for each course. In case of UG programmes in Engineering and Vocational Studies, it was decided that the departments shall incorporate pertinent NEP recommendations while

complying with AICTE, NBA, NSQF, International Standard Classification of Occupations, Sector Skill Council and other relevant agencies/sources. The University has also developed consensus on adoption of Blended Learning with 40% component of online teaching and 60% face to face classes for each programme.

The revised curricula of various programmes could be devised with concerted efforts of the faculty, Heads of the Departments and Deans of Schools of Study. The draft prepared by each department was discussed in series of discussion sessions conducted at Department, School and the University level. The leadership of the University has been a driving force behind the entire exercise of developing the uniform template and structure for the revised curriculum. The Vice Chancellor of the University conducted series of meetings with Heads and Deans to deliberate upon the vital parameters of the revised curriculum to formulate a uniform template featuring Background, Programme Outcomes, Programme Specific Outcomes, Postgraduate Attributes, Structure of Masters Course, Learning Outcome Index, Semester-wise Courses and Credit Distribution, Course-level Learning Outcomes, Teaching-Learning Process, Blended Learning, Assessment and Evaluation, Keywords, References and Appendices. The experts of various Boards of Studies and School Boards contributed to a large extent in giving the final shape to the revised curriculum of each programme.

To ensure the implementation of curricular reforms envisioned in NEP-2020, the University has decided to implement various provisions in a phased manner. Accordingly, the curriculum may be reviewed annually.

The Guiding Principles adopted/adapted from the NEP 2020 to develop the Curriculum Framework for Master of Library and Information Science Programme are:

- G-1: Education must build character, enable learners to be ethical, rational, compassionate, and caring, while at the same time prepare them for gainful, fulfilling employment
- G-2: Indian culture and values...Rich legacies to world heritage must not only be nurtured and preserved for posterity but also researched, enhanced, and put to new uses through our education system
- G-3: The rise of big data, machine learning, and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for a skilled workforce, particularly involving mathematics, computer science, and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand
- G-4: With the quickly changing employment landscape and global ecosystem, it is becoming increasingly critical that children not only learn, but more importantly learn how to learn.
- G-5: There must also be seamless integration and coordination across institutions and across all stages of education
- G-6: Facing and addressing these challenges will require high-quality interdisciplinary research across fields that must be done in India and cannot simply be imported; the ability to conduct one's own research also enables a country to much more easily import and adapt relevant research from abroad much of the very best research in the world has occurred in multidisciplinary university settings.

2. Programme Outcomes

The programme aims at preparing the skilled workforce to work in the rapidly changing information environment to meet the user requirements following the professional values and principles, innovative practices and preparing them to be life-long learners and active service leaders.

The pass out students of M.Lib.&Inf.Sc. Programme is expected to get equipped with:

- PO-1: Attitude based in library philosophy, principles, ethics and approaches to manage libraries and information centers
- PO-2: Knowledge of the processes of collection development, representation, organization, preservation, curatorial, access Knowledge and dissemination in accordance with physical, virtual, and technical infrastructure and needs
- PO-3: Apply appropriate technological supported services in teaching, learning that contribute towards an information- and technology-literate society.
- PO-4: Skills to respect, engage, and collaborate with a diverse community of users and patrons in order to advocate for and construct inclusive, meaningful, and participatory library services, programs, and resources.
- PO-5: Knowledge and exposure to research-based practices through the application of information literacy, research literacy and data literacy.

3. Program Specific Outcomes (PSOs)

On completing Master of Library and Information Science Programme, students shall be able to realize following outcomes:

- PSO-1: Demonstrate knowledge of the information profession by relating foundational principles, philosophy, and ethics to contemporary issues, by identifying key, on-going interdisciplinary developments in the field, and by analysing current practices for future implications of the profession.
- PSO-2: Create, select, acquire, manage, and maintain the information environment by analysing how users seek out information.
- PSO-3: Demonstrate and be able to explain the principles of organizing recorded information by exploring both past and present theories of organizing and representing recorded information and by understanding and applying the standards of organizing recorded information in libraries and information centres.
- PSO-4: Identify, explain, use and critically evaluate both current and emerging information technologies in libraries and information centres.
- PSO-5: Provide information services to a diverse community by analysing, synthesizing, and disseminating traditional and emerging information resources, by developing communication and interpersonal skills for determining the information needs of all users, by creatively utilizing techniques and tools to address information needs, and by advocating for underserved audiences.
- PSO-6: Demonstrate an understanding of research by identifying the fundamental characteristics of quantitative and qualitative research and by analysing the value of research literature in the library and information field.
- PSO-7: Develop a commitment to continuous learning by participating in local, regional, and national professional development opportunities.
- PSO-8: Use Indian knowledge and principles to analyze and evaluate ideas and theories in modern disciplines.

4. Programme Structure

The programme is containing of four semesters and required achieve 100 credits are to be achieved through the various core, departmental electives, school level electives and open generic courses, demonstrated as below:

Master of Library and Information Science: 100 Credits					
Courses/Sem	Sem-1 (Credits)	Sem-2 (Credits)	Sem-3 (Credits)	Sem-4 (Credits)	Total
Discipline Specific Courses Core (including practical training/dissertation)	15	21	17	24	77
Discipline Specific Elective Courses	5	5	5		15
Open Choice Courses/ GEC:	4		4		08
Common Course(s) for Community Service/ Remembrance of University Kulgeet, National Anthem, National Song/ National Integration/Games and Sports/Campus Development					To be shown in the award list separately as per the University Guidelines
Total	24	26	26	24	100

Mapping of understanding, Knowledge and Skill in courses offered in various semesters					
Courses/ Subject related Courses in Semesters	Sem-1 (20/24 Credits)	Sem-2 (22/26 Credits)	Sem-3 (22/26 Credits)	Sem-4 (20/24 Credits)	Total Credits
Understanding	5	10	12	04	31
Knowledge	10	6	04	-	22
Skill	5	6	06	20	35
Total Credits	20	26	22	24	92

EXIT Option and Award of Degree/Diploma

A student who successfully completes first and second semesters and intend to exist just after both the semesters; or even after that during the course of study during the next semesters for any reasons shall get Bachelor of Library and Information Science

5. Post-graduate Attribute:

The learner of M.Lib.&Inf.Sc. Programme should have the following attributes:

- (a) **Disciplinary knowledge:** Capable of demonstrating comprehensive knowledge and understanding of major concepts, principles, theories and laws of various subjects in Library and Information Science and other related fields of study, including broader interdisciplinary subfields such as Management, Economics, Information and Communication Technologies, Indology, Statistics, Journalism and Mass Communication, Printing and Packaging, etc.
- (b) **Professional and Managerial skills:** Ability to classify simple, compound and complex documents using standard classification schemes; capability to catalogue all types of documents using standard catalogue codes and metadata standards; ability to create database of records and search information from OPAC, Internet and electronic databases; ability to carry out housekeeping operations and to provide library and information services by using information and communication technologies and addressing managerial challenges,
- (c) **Skilled communicator:** Ability to communicate effectively in oral and written forms with users, colleagues and authorities in an effective manner. Further ability to create information products such as announcements, information leaflets, bibliographies, e-publications.
- (d) **Critical thinker:** Capability to critically analyze subjects of documents to classify them properly and to derive subject headings for subject cataloguing, indexing purposes and ability to think critically for solving various problems pertaining to the management of Libraries and Information Centers. Further, abilities to judge for the use of ICT support for effective and efficient management of information and sources, resources.
- (e) **Problem solver:** Apply problem solving skills while providing support services for teaching, learning and research and for formulating appropriate strategies to use technologies, databases, platforms, resources. The acquired knowledge and skill would be tested through support to the activities of the School of Biological and Applied Sciences.
- (f) **Team player/worker:** Capable of working effectively in diverse teams in classrooms, in computer laboratory, in finding technological solutions, resource-based activities and in Libraries and Information Centers.
- (g) **Digitally literate:** Capable of using digital technology for communication purpose, for library housekeeping operations, and for searching information from OPAC, Internet and online databases and e-resources. Further, ability to work comfortably with the Learning Management System, Content Management System, Digital Library software, and explore possibilities of applying technologies associated with Internet of Things, Artificial Intelligence and Big data for finding ways to improve services.

- (h) ***Moral and Ethical Values:*** Capable of demonstrating the ability to understand professional ethics along with moral values based on the Indian ethos. Also well versed with the issue related with Intellectual Property Rights, copyright, open access, etc. while providing library services.
- (i) ***Lifelong learners:*** Capable of self-paced and self-directed learning aimed at personal development; for improving knowledge and skills and for reskilling through continuing educational opportunities. Further, capable of providing support to individuals, institutions and the societal groups towards attaining objectives of lifelong learning.

6. Learning Outcomes Index

Core Courses	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	C-13	C-14
<i>Disciplinary knowledge</i>	Y			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<i>Professional and Managerial skills</i>				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<i>Skilled communicator</i>				Y			Y			Y	Y	Y	Y	Y
<i>Critical thinker</i>		Y	Y	Y		Y		Y	Y	Y		Y	Y	Y
<i>Problem solver</i>			Y		Y	Y	Y	Y	Y	Y		Y	Y	Y
<i>Team player/worker</i>		Y	Y	Y	Y	Y	Y	Y	Y	Y				
<i>Digitally literate</i>		Y	Y			Y		Y	Y	Y	Y		Y	Y
<i>Moral and Ethical Values</i>	Y		Y	Y									Y	Y
<i>Lifelong learners</i>	Y							Y	Y		Y		Y	Y

Elective Courses	E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8
<i>Disciplinary knowledge</i>	Y	Y	Y	Y	Y	Y	Y	
<i>Professional and Managerial skills</i>	Y	Y	Y	Y	Y	Y		Y
<i>Skilled communicator</i>							Y	
<i>Critical thinker</i>	Y	Y	Y			Y	Y	
<i>Problem solver</i>				Y	Y			Y
<i>Team player/worker</i>				Y	Y			Y
<i>Digitally literate</i>								Y
<i>Moral and Ethical Values</i>						Y	Y	
<i>Lifelong learners</i>								Y

7. Semester-wise Courses

Abbreviation/ Acronyms	Description
C	Core course
DE	Discipline Elective
GEC	Generic Elective Course
SEC	Skill Enhancement Course
SEEC	Skill Enhancement Elective Course
SGEC	School Based Generic Elective Course
L	Lecture
T	Tutorial/Presentation
P	Practical

Semester – I

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 01 01 C 4105	Foundations of Library and Information Science	Core	4	1	0	05
2	SIAS LIS 01 02 C 4105	Information Communication Technology and Libraries (Theory)	Core	4	1	0	05
3	SIAS LIS 01 03 C 00105	Information Communication Technology and Libraries (Practice)	Core	0	0	10	05
4	SIAS LIS 01 01 DE 3205	Academic Library Systems	DE	3	2	0	05
5	SIAS LIS 01 02 DE 3205	Public Library Systems	DE	3	2	0	05
6	SIAS LIS 01 03 DE 3205	Special Library Systems	DE	3	2	0	05
7	SIAS LIS 01 01 GEC 3104	Indian Knowledge Systems+	GEC	3	1	0	04
8	SIAS LIS 01 02 GEC 3104	Learning Skills	GEG	3	1	0	04
9	SIAS LIS 01 03 GEC 3104	Media and Information Literacy*	GEC	3	1	0	04
Credits		C=15, DE=5, GEC=04	Total Credits = 24				

NOTE:.. Student will take GEC of 4 Credit offered by other Department

+ Jointly with Department of Sanskrit, course would be available only with the approval of BOS of Sanskrit Department and readiness of joint offering of the course.

* With Department of Journalism and Mass Communication, course would be available only with the approval of BOS of JMS Department and readiness of joint offering of the course.

Semester – II

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 02 01 C 3104	Indian Ethos and Ethics for Information Professionals	Core	3	1	0	04
2	SIAS LIS 02 02 C 2065	Knowledge Organization and Processing: Library Classification (Theory and Practice)	Core (SEC)	2	0	6	05
3	SIAS LIS 02 03 C 2065	Knowledge Organization and Processing: Library Cataloguing (Theory and Practice)	Core (SEC)	2	0	6	05
4	SIAS LIS 02 04 C 3104	Management of Libraries and Information Centers	Core	3	1	0	04
5	SIAS LIS 02 05 C 2103	E-Resource Management	Core	2	1	0	03
6	SIAS LIS 02 01 DE 3115	Collection Development	DE	3	1	1	05
7	SIAS LIS 02 02 DE 3115	Preservation and Conservation of Library Material	DE	3	1	1	05
8	SIAS LIS 02 03 DE 4105	Life and Works of S R Ranganathan	DE	4	1	0	05
9	SIAS LIS 02 01 SEEC 4105	Library Internship (Online; or Offline in a Library)	SEEC	-	-	-	-
Credits		C=21, DE=5	Total Credits = 26				

Semester – III

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 03 01 C 3104	Digital Libraries, Content Management and Learning Management Systems (Theory)	Core	3	1	0	04
2	SIAS LIS 03 02 C 00105	Digital Libraries, Content Management and Learning Management Systems (Practice)	Core	0	0	10	05
3	SIAS LIS 03 03 C 1144	Informetric and Scientometrics	Core	1	1	4	04
4	SIAS LIS 03 04 C 2124	Advances in ICT and Libraries	Core	2	1	2	04
5	SIAS LIS 03 01 DE 3205	Ranganathan and Modern Library Management	DE	3	2	0	05
6	SIAS LIS 03 02 DE 3205	Ranganathan and Modern Techniques of Knowledge Organization	DE	3	2	0	05
7	SIAS LIS 03 01 GEC 2124	Information Sources, Systems and Services in Biological and Applied Sciences	GEC	2	1	2	04
8	SIAS LIS 03 02 GEC 2124	Social Science Information Sources, Systems and Services	GEC	2	1	2	04
Credits		C=17, DE=05, GEC=04	Total Credits = 26				

NOTE:. Student will take GEC of 4 Credit offered by other Department

Semester – IV

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 04 01 C 3104	Research Methodology (Online)	Core	3	1	0	04
2	SIAS LIS 04 02 C 0020	Dissertation/Industrial Training*	Core	-	-	-	20
3	SIAS LIS 04 01 SEEC	Research Data Literacy (Online)	SEEC	-	-		-
Credits		C=24	Total Credits = 24				

*NOTE: Training in a Library or Institution or Corporate House or an Industry

One Credit= 15 Lectures
Two Credits = 30 Lectures
Three Credits: 45 Lectures
Four Credits= 60 lectures

9. Teaching Learning Process

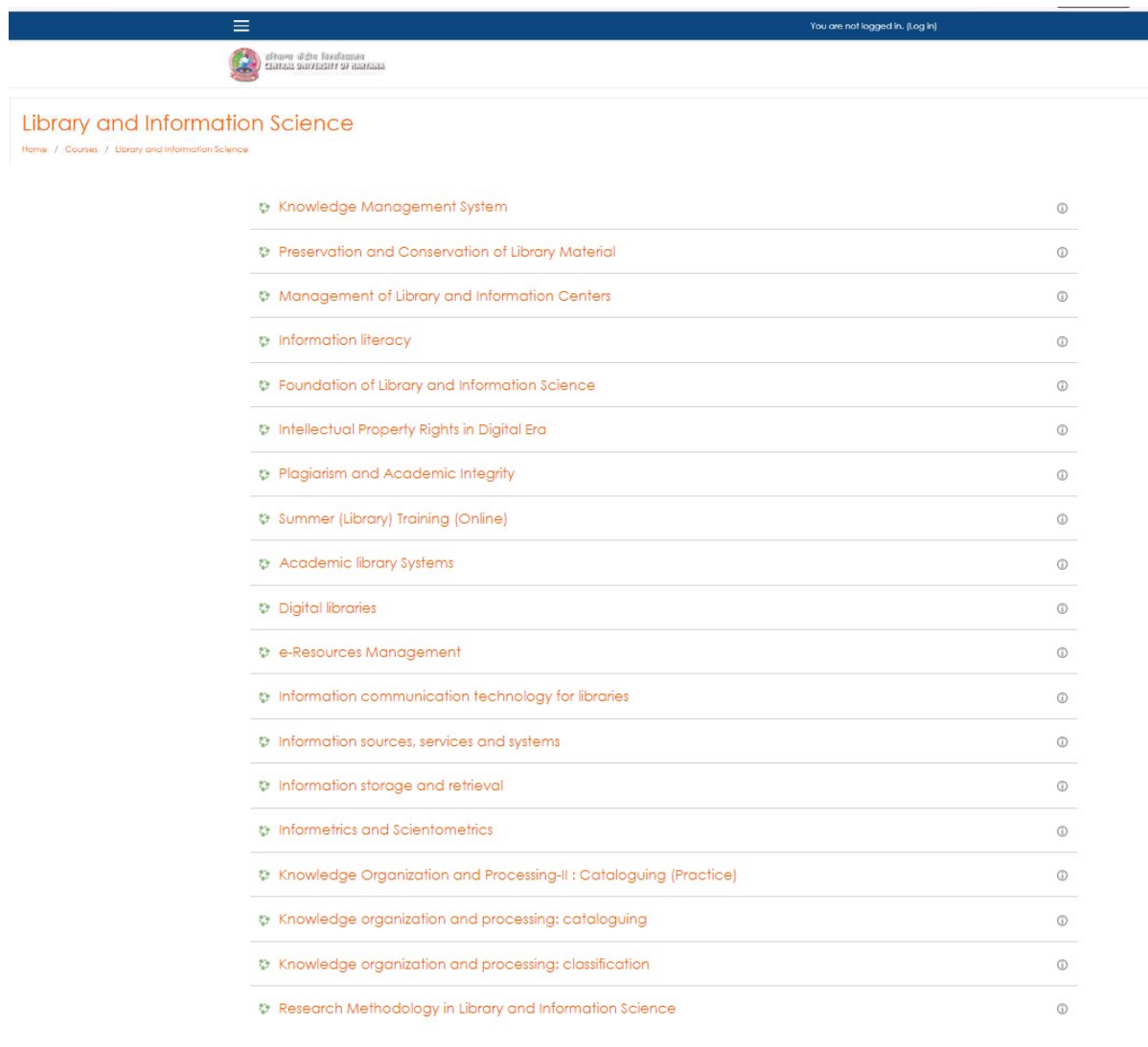
The M.Lib.I.Sc. Programme is designed to encourage the acquisition of disciplinary knowledge, understanding, skills, attitudes and ethical values required for library and information-based professions and jobs. Keeping this in mind the teaching learning experiences should be designed and implemented to enable active/participative learning of the students. Librarianship being a practice-oriented service profession, development of practical skills constitutes an important aspect of the Programme's teaching-learning process. In order to provide knowledge, develop understanding and impart required skills in the students, a variety of teaching learning approaches would be adopted. These include

- Expert Lectures from eminent LIS Professionals
- Seminars, Discussions and debates
- Brainstorming sessions
- Case studies
- Demonstrations
- Practical
- Tutorials
- Group/ Peer teaching and learning
- Project-based learning
- Field-based learning
- Open-ended project work
- Quiz and games
- Technology-enabled learning, etc.

Teaching-learning process suitable to impart problem solving, reasoning and analytical skills may also be adopted. Internship and/or industrial training in school, college, university, research, corporate libraries and other information organizations will be a value adding teaching-learning opportunity. Modes of study are flexible, being offered on both, the student's traditional face-to-face experience is enriched with the support of e-learning portal, i.e. CUH LMS.

10. Blended Learning

Blended learning is a combination of face-to-face and online learning in a way that the one compliments the other. It provides individuals with the opportunity to enjoy the best of both worlds. For example, a student might attend classes in a real-world classroom setting and then supplement the lesson plan, activities, resource-based learning can take place online. The students can use the course of the CUH LMS portal using log in and password.



The screenshot displays the CUH LMS portal interface. At the top, there is a dark blue navigation bar with a hamburger menu icon on the left and the text "You are not logged in. (Log In)" on the right. Below the navigation bar is the CUH logo and the text "Office of the Registrar" and "Central University of Haryana". The main content area is titled "Library and Information Science" and includes a breadcrumb trail: "Home / Courses / Library and Information Science". A list of 20 courses is displayed, each with a small icon to the left and a circular icon to the right. The courses are:

- Knowledge Management System
- Preservation and Conservation of Library Material
- Management of Library and Information Centers
- Information literacy
- Foundation of Library and information Science
- Intellectual Property Rights in Digital Era
- Plagiarism and Academic Integrity
- Summer (Library) Training (Online)
- Academic library Systems
- Digital libraries
- e-Resources Management
- Information communication technology for libraries
- Information sources, services and systems
- Information storage and retrieval
- Infometrics and Scientometrics
- Knowledge Organization and Processing-II : Cataloguing (Practice)
- Knowledge organization and processing: cataloguing
- Knowledge organization and processing: classification
- Research Methodology in Library and Information Science

The department employs blended approach in teaching all the courses some way or the other but, the broad metrics of the blended learning is presented in the following table:

Courses	Mode	Face to face	Online	Total
Core Courses /Practical/Dissertation	Blended	53	24	77
Discipline Based Electives	Blended	07	08	15
Open Electives/GEC	Online only		08	
Total		60	40	100

While actual delivery of knowledge the use of ICT enabled teaching learning may slightly vary according to the knowledge and exposure of the individual faculty.

Integration of MOOCs with the Courses:

The students are encouraged to take up the MOOCs from the following list as suggested semester wise during the programme (It is a dynamic list and the courses offered may keep changing with the availability of the course during July/January Cycle:

SN	MOOC	Host Institution	Name of The Faculty (Prof.)	July/January Cycle
Related to: Soft Skills and Personality Development				
1	Soft Skills	IIT Roorkee	Binod Mishra	July
2	Body Language: Key to Professional Success	IIT Roorkee	Rashmi Gaur	July
3	Managerial Skills for Interpersonal Dynamics	IIT Roorkee	Santosh Rangnekar	January
Related to: Library Management/ Ranganathan and Library Management (Sem-2)				
1	Managing Change in Organization	IIT Khadagpur	KBL Srivastava	January
2	Services Marketing: A Practical Approach	IIT Khadagpur	Biplav Datta	January
3	Customer Relationship Management	IIT Khadagpur	Swagato Chatterjee	July
4	Services Marketing: A Practical Approach	IIT Khadagpur	Biplav Datta	July
5	Managing Services	IIT Kanpur	Jayanta Chatarjee	July
6	Innovation, Business Models and Entrepreneurship	IIT Roorkee	Rajat Agrawal and Rajat Sharma	July
7	Integrated Marketing Management	IISc Bangalore	R Srinivasan	July
8	Digital Marketing	Punjab University	Tejinderpal Singh	July

Related to: Ranganathan and Knowledge Management (Sem-2)

1	Knowledge Management	IIT Khadagpur	KBL Srivastava	July
Related to: ICT Applications/ Advances in Library and Information Technologies (Sem-1/ 3)				
1	Introduction to Internet of Things	IIT Khadagpur	Sudeep Mishra	July
2	Cloud Computing	IIT Khadagpur	Soumya Kanti Ghosh	July
3	Learning Analytics	IIT Bombay	Ramkumar Rajendran	July
4	Data Base Management System	IIT Khadagpur	ParthaPratim Das and Samiran Chattopadhyay	July
5	Computer Networks and Internet Protocol	IIT Khadagpur	Soumya Kanti Ghosh and Sandip Chakraborty	July
6	Cloud Computing	IIT Khadagpur	Soumya Kanti Ghosh	July
7	Database and Content Organisation	IGNOU	V. V. Subrahmanyam	July

These courses may support better understanding of the core/elective courses and/ or may further lead to take up the area of dissertation to enhance the learning on the basis of understanding acquired. The faculty would encourage the students to identify and take up such courses as and when needed for the students. It would further help the students to understand the newer trends both in the area of the MOOC/ Study and also teaching learning pedagogies. These courses may be described as self-study courses to attain some skills but will not be required to be passed/ qualified.

It's solely up to the student how much of the content they would use, complete the course or not, and attain the certificate or not from the SWAYAM course after examination.

11. Assessment and Evaluation

Assessment is within each unit, including the dissertation. Assessment methods vary according to the nature of the content and material. Individual written assignments and exercises are the norm, but some units may use other methods, including individual practical exercises, group work projects and unseen examination papers or compiling resources and bibliographies. Most assessments have an element of choice, allowing you to focus on aspects of interest. Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade- Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme Statutes and Ordinances, unit specifications, on the virtual learning environment or attached to a specific assessment task.

The assessment activities may broadly be categorised as below:

- Continuous Comprehensive Evaluation (online or otherwise) at regular after achievement of each Course-level Learning Outcomes
- Formative Assessment on the basis of activities of a learner throughout the programme instead of one-time assessment
- Oral Examinations to test presentation and communication skills
- Open Book Examination for better understanding and application of the knowledge acquired
- Group Examinations on Problem solving exercises
- Seminar Presentations
- Review of Literature
- Collaborative Assignments
- Practical examination
- Evaluation of dissertation and project report

Students are encouraged to exchange thoughts, develop ideas and learn from one another. Assessment is by individual or group assignments aimed at developing self-reliance and autonomy and foster the capacity for lifelong continuing self-development and learning. The dissertation is a substantial component of the degree offering an opportunity to demonstrate comprehensive understanding of a particular specialism and a systematic and professional approach to research. It is a substantive task that requires to investigate a relevant chosen area under the supervision of a faculty.

Key Features

- NEP-2020 based Syllabus
- Wide range of core and elective courses
- Multi-disciplinary academic subject knowledge
- Properly spelled out measurable outcomes for each course
- Latest ICT tools and techniques incorporation in courses
- Opportunities for sustained Professional Growth
- Incorporation of professional values and Indian ethos
- Research-based practices through information, data and research literacies
- Technology enabled teaching learning practices
- Focus on Indian Knowledge System
- Revival of library philosophy and furthering education and research on the newer parameters

12. Key Words

- Assessment Methods
- Basics of Information and Communication Technology (Practice)
- Basics of Information and Communication Technology (Theory)
- Foundations of Library and Information Science
- Graduate Attributes
- Information Sources, Systems and Services
- Knowledge Organization: Cataloguing (Practice)
- Knowledge Organization: Cataloguing (Theory)
- Knowledge Organization: Classification (Practice)
- Knowledge Organization: Classification (Theory)
- Learning Outcomes-based Approach to Curriculum Planning
- Library Management
- Degree Programme
- Learning Outcomes related to the M.Lib.I.Sc Programme
- Public Library and Information System
- Qualification Descriptors
- School Library and Media Centre Structure of M.Lib.I.Sc. Programme
- Learning Skills
- Ranganathan's Approach to Management
- Teaching-Learning Process

References:

- Blended Mode of Teaching and Learning: Concept Note available on UGC website (Draft), available at: https://www.ugc.ac.in/pdfnews/6100340_Concept-Note-Blended-Mode-of-Teaching-and-Learning.pdf
- European Curriculum Reflections on Library and Information Science Education, available at: <http://www.euclid-lis.eu/wp-content/uploads/2014/02/european-curriculum-reflections.pdf>
- IFLA Guidelines for Professional Library and Information Science (LIS) Education Programmes (Draft)– February 3, 2021, available at: <https://lisedu.files.wordpress.com/2021/02/lisepguidelines-consult-draft.pdf>
- Learning Outcomes based Curriculum Framework (LOCF) for Bachelor of Library & Information Science Programme 2019, available at: https://ugc.ac.in/pdfnews/8052496_LOCF-Library-Science.pdf
- National Education Policy-2020.
https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Semester – I

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 01 01 C 4105	Foundations of Library and Information Science	C	4	1	0	05
2	SIAS LIS 01 02 C 4105	Information Communication Technology and Libraries (Theory)	C	4	1	0	05
3	SIAS LIS 01 03 C 00105	Information Communication Technology and Libraries (Practice)	C	0	0	10	05
4	SIAS LIS 01 01 DE 3205	Academic Library Systems	DE	3	2	0	05
5	SIAS LIS 01 02 DE 3205	Public Library Systems	DE	3	2	0	05
6	SIAS LIS 01 03 DE 3205	Special Library Systems	DE	3	2	0	05
7	SIAS LIS 01 01 GEC 3104	Indian Knowledge Systems+	GEC	3	1	0	04
8	SIAS LIS 01 02 GEC 3104	Learning Skills	GEG	3	1	0	04
9	SIAS LIS 01 03 GEC 3104	Media and Information Literacy*	GEC	3	1	0	04
Credits		C=15, DE=5, GEC=04	Total Credits = 24				

**NOTE: Student will take GEC of 4 Credit offered by other Department
+ In Course in Progress**

Course Title: Foundations of Library and Information Science

Course Objective: To provide basic understanding of the core concepts of data, information, knowledge and the philosophy, values of various types of libraries and librarianship and institutions involved in their developments.

Learning Outcomes

On studying this course, students shall be able to:

1. Comprehend the concept of information, data and information; and the knowledge society and increasing role of digital information in the present-day life;
2. Understand the role of libraries in the development of the society, philosophical foundations and the development of libraries and objectives and functions of different types of libraries;
3. Aware about the concept of open access to the library and information with the related legal and related issues; and
4. Assess the role of national and international library associations and agencies and networks work for the development and promotion of libraries and library professionals.

Unit 1: Information, Knowledge and Society

- Meaning and Characteristics of Data, Information, Knowledge, Wisdom and their inter-relationship; Data, Information and Knowledge as Service
- Knowledge Society; Role of digital information and data in everyday life
- Information Cycle: Generation, Storage and Dissemination, Use, Sharing and Publishing of information
- Sustainable Development Goals (SDGs) and Role of Information as Key Resource

Unit 2: Librarianship and Libraries

- Philosophical Foundations, Five Laws of Library Science, professional Ethics
- Historical Development of Libraries, Librarianship as profession and emergence of Library and Information Science as discipline
- Role of Libraries in Socio-economic, Cultural, Educational, Scientific and Technological Developments
- Types of Libraries and Information Centers: Objectives, Features, Functions

Unit 3: Access to Libraries and Information and Legal Issues

- Access to Library Sources and Resources
- Open Access movement, OERs, Open Data, Open Science and Open Knowledge
- The Press and Registration of Books Act; The Delivery of Books and Newspapers (Public Libraries) Act; Copyright Act
- Right to Information Act; IPR & Legal Issues; Information Technology Act

Unit 4: Role of Professional Associations, Agencies, Networks and Information Systems

- Role of Professional Associations: IFLA, ALA, CILIP, ASLIB and SLA

- Role of National Professional Associations: ILA, IASLIC, IATLIS
- Role of UNESCO, UGC and RRRLF, NIC in the promotion and development of libraries
- Role of Library Networks and Consortia: INFLIBNET, DELNET, OCLC, e-ShodhSindhu, and Information Systems: INIS, AGRIS, ENVIS

Recommended Reading

1. Bala, H. (2010). *Towards building a knowledge Society*. USA: Author press.
2. Bala, Harsha. 2010. *Towards building a knowledge society*. USA: Author press.
3. Bawden, David & Robinson, Lyn (2012). *Introduction to information science*. London: Facet.
4. Buckland, M. (2017). *Information and society*. MIT Press.
5. Connaway, L. S. & Faniel, I. M. (2014). *Reordering Ranganathan: Shifting User Behaviors, Shifting Priorities*. Ohio: OCLC Research
6. Cribb, J., & Sari, T. (2010). *Open science: sharing knowledge in the global century*. Csiro Publishing.
7. Crowley, Bill (Ed). (2012). *Defending professionalism: a resource for librarians, information specialists, knowledge managers, and archivists*. Santa Barbara: Libraries Unlimited.
8. Dhavan, S.M. (2010). *Public Libraries in the Knowledge Society*. New Delhi: Serial
9. Dhavan, S.M. 2010. *Public Libraries in the Knowledge Society*. New Delhi: Serial
10. DuBois, P Z (2021). *Reading and the Art of Librarianship: Selected essays of John B Nicholson*, Routledge
11. Duff, A. (2001). *Information Society Studies*. London: Routledge.
12. Duff, Alistair. 2001. *Information Society Studies*. London: Routledge
13. Fitzgerald, N. (2012). *The Information: A history, a Theory, a Flood*, Taylor and Francis
14. Green, Roger C., Grover, Robert J., Fowler, Susan J. (2013). *Introduction to library and information professions*. Santa Barbara: Libraries Unlimited.
15. Harris, M. H., Harris, P. C. & Hannah, S. A. (1998). *Into the Future: The Foundations of Library and Information Services in the Post-Industrial Era*. (2nd ed.). Greenwich: Ablex Publishing.
16. Harris, Michael H., Harris, Pamela C and Hannah, Stan A. 1998. *Into the Future: The Foundations of Library and Information Services in the Post-Industrial Era*. 2nd ed. Greenwich, Conn.: Ablex Publishing
17. India. Ministry of Human Resource Development. (2020). *National Education Policy 2020*.
18. Jafferson, G. 1997. *Library Cooperation*. London: Andre Deutsch
19. Kent, Allen. 1994. *Encyclopedia of Library and Information Science*. NY: Marcel Dekker
20. National Knowledge Commission. (2009). *National Knowledge Commission. Report to the Nation 2006-2009*.
21. Pasek, J. E. (2015). *Defining information policy: Relating issues to the information cycle*. *New Review of Academic Librarianship*, 21(3), 286-303.
22. Ranganathan, S R. 1957. *Five Laws of Library Science*. 2nd ed. Mumbai: Asia.
23. Ranganathan, S. R. (2006). *The five laws of Library science*. Bangalore: Sarada Ranganathan Endowment.

24. Ranganathan, S. R. 1988. *The Five Laws of Library Science*. Bangalore: Sarada Ranganathan Endowment for Library Science. 3
25. Rubin, Richard E. (2010). *Foundations of library and information science*. 3rd ed. New York: Neal Schuman.
26. Shera, J. H. (1970). *Sociological foundations of librarianship*. Bombay: Asia Publishing House.
27. United Nations (2015). Sustainable development goals. *SDGs Transform Our World, 2030*.
28. Wiegand, Wayne A. et al.(eds.).1994. *Encyclopedia of Library History*. NY: Garland Publishing.
29. Willinsky, J. (2005). *The Access Principle: The Case for Open Access to Research and Scholarship*. (Digital Libraries and Electronic Publishing). Cambridge: MIT Press.
30. Willinsky, John. 2005. *The Access Principle: The Case for Open Access to Research and Scholarship*. (Digital Libraries and Electronic Publishing). Cambridge: MIT Press.

Course Title: Information Communication Technology and Libraries (Theory)

Course Objective: To provide basics of information communication technologies and their application in libraries and information centers and their use in everyday operations of libraries.

Learning Outcomes:

On studying this course, students shall be able to:

1. Understand the structure of computer and functions of its various units and familiarities use of computer in office work
2. Realize the process of planning and automating the library housekeeping operations and services; and familiarizing with the library management software
3. Have an understanding of the concept of data structure, algorithm and database
4. Know about the computer networking and Internet; search engines, data and network security issues applicable in libraries and the functionalities of the library networks

Unit 1: Fundamentals of Computers

- Concept, Generations, Types, Hardware
- Units of Computers: Arithmetic and Logic Unit, Control unit, Input and Output Unit, Memory Unit
- Software: System Software, Operating Systems-MS-Windows, UNIX and LINUX;
- Software: Application Software - MS-Word, MS-Excel and MS-Power point; Open Office

Unit 2: Library Automation

- Meaning, Purpose, Historical Development
- Planning and Implementation of Automation in Housekeeping Operations, Retrospective Conversion
- Library Management Software: Proprietary, Free and Open-Source Software (FOSS); Evaluation
- Standards for Library Automation: MARC, 39.50 protocols

Unit 3: Data Structure, Algorithm and Databases

- Data structure: Array, Linked list, Tree, Graph, Map
- Algorithm: Search, Sort,
- Database: Relational Database, Field, Dimension, Tables, Queries, Indexing
- Languages: SQL, Python

Unit 4: Computer Networks and Library Networks

- Computer Networks: Concept, Need, Topologies, Types: LAN, MAN, WAN; Client-server
- Wireless Communication: Media, Wi-fi, Li-fi, Satellite Communication, Mobile

- Internet: Web Browsers, WWW, E-mail; Search Engines (Meta & Entity); Internet Protocols and Standards: HTTP, SHTTP, FTP, SMTP, TCP/IP, URI, URL; Search Strategies
- Data Security and Network Security: Firewalls, Cryptographic Techniques, Anti-virus software, Anti- spyware, Intrusion Detection System

Recommended Readings

1. Bilal, D. (2014). Library Automation: Core Concepts and Practical Systems Analysis: Core Concepts and Practical Systems Analysis. ABC-CLIO.
2. Boardman, M. (2005). The language of websites. London: Routledge.
3. Bolan, K., & Cullin, R. (2009). Technology made simple: An improvement guide for small and medium libraries. New Delhi: Indiana Publishing House.
4. Bolic, Miodrag, David Simplot-Ryl, & Ivan Stojmenovic. 2010. RFID systems: research trends and challenges. Chichester, West Sussex: Wiley.
5. Bradley, P. (2017). Expert Internet Searching, London, Facet
6. Chowdhury, G. G., & Chowdhury, S. (2001). Information sources and searching on the World Wide Web. London: Facet Publishing.
7. Cohen, S. M. (2003). Keeping current: Advanced internet strategies to meet librarian and patron needs. American Library Association.
8. Ingersoll, P. & Culshaw, J. (2004). Managing information technology: A handbook for systems librarians. Westport CT: Libraries Unlimited.
9. Kochar, R. S. (2008). Library automation: Issues and systems. New Delhi: A P H Publishing.
10. Mishra, V.K. (2016), Basics of Library Automation, Koha Library Management Software: Challenges with Case Studies, EssEss Publications.
11. Osborne, L. N., & Nakamura, M. (2000). Systems analysis for librarians and information professionals. 2nd ed. Englewood: Libraries Unlimited.
12. 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.

Course Title: Information Communication Technology and Libraries (Practice)

Course Objective: To give a practical exposure to the software, database concepts and expose to use library management software and offer web-based services to the users.

Learning Outcomes

On studying this course, students shall be able to:

1. Install and use system software and application software and setting up of desktop
2. Know about data storage techniques, data formats, database searching and data migration
3. Carry out library housekeeping operations using library management software, like SOUL 3.0, KOHA
4. Work for planning and designing and maintaining of a library website

Unit 1: Basics of Computer

- Setting up Desktop : Screen Resolution, Adjusting the Desktop icons, Power and Sleep mode, Remote Desktop connection
- Installation and Use of Operating System: Windows and Linux
- Installation and Use of Application software: Word Processing Software, Spread Sheet Management Software and Power Point Presentation Software,
- Desktop publishing (Page maker, Coral Draw, LaTeX)

Unit-2: Storage and Search Strategies

- Data Storage: On Premise and Cloud
- Data Migration: Storage Migration, Application Migration
- File formats for Data Migration: CSV, EXE, MARC
- Search Strategies: Adopting various Search Strategies and Filters

Unit 3: Library Management Software

- Installation/Setting up of Library Management Software: KOHA , SOUL
- Setting up a Library and Familiarity with Library Management System Software Modules
- Generation of Various Reports
- Barcode, RFID, NFC (Near Field Communication), QR Code, Biometric, Smartcard: Features and Applications.

Unit-4: Web Hosting

- Web hosting (domain)
- Application Architecture
- Website Designing (HTML, JavaScript,) Server Side (PHP, SQL)
- Website Designing Tools: Bootstrap, Webflow, Google Web Designer); Wix

Recommended Readings

1. Celebic, G. And Rendulic, D. I. (2011): Handbook: Basic Concepts of ICT. Open Society for Idea Exchange, Zagreb
2. Haley, C. K., &Robkin, S. (2007). Radio frequency identification handbook for librarians. Libraries Unlimited.
3. Haravu, L. J. (2004). Library automation: Design principles and practice (with CD-ROM). New Delhi: Allied Publishers
4. Rice-Lively, M.L. & Chen, H. L. (2006). Scenarios and information design: A user-oriented practical guide. London: Chandos Publishing.
5. Richardson, W. W. H. (2010). Blogs, Wikis, Podcasts, and Other Powerful Web Tools for Classrooms. Thousand Oaks: SAGE Publications.
6. Satyanarayana, N. R., & Khan, A. M. (2014). A manual of library automation and networking. New Delhi :EssEss Publications

Course Title: Academic Library Systems

Course Objective: To offer an understanding of the working of academic libraries and the various aspects related to managing the academic libraries.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand basic knowledge of academic libraries and their changing roles, key recommendations of various committees and commissions and their role in accreditation
2. Know the administrative and routine functions of the academic libraries
3. Learn about the resources sharing and consortia practices available in academic libraries

UNIT I: Role of Academic Libraries

- Concept, Need, Purpose, Functions, and Present set up of different types of Academic Libraries in India
- Role of academic libraries in online, blended and lifelong learning
- Role of statutory bodies/Institutions like UGC, AICTE, MCI/NMC, PCI, CoA and others in the growth and development of Academic Libraries of higher education in India; Committees and Commissions: Report of the Kothari Commission, Radhakrishnan Commission, Mudaliar Commission, Ranganathan Committee
- Accreditation and Ranking Agencies: Accreditation: NBA, NAAC; Ranking: NIRF, QS World University Ranking, The World University Ranking and others; Finding key features of the top ranked institutional libraries

UNIT II: Effective Resources Management

- Manpower Development: Requirement, Qualifications, Recruitment, Job description, job analysis, staff manual with reference to policies of UGC, AICTE and other bodies; Skills and Competencies, Training and Development
- Library Finance: Sources Type of Budgets, Methods of financial estimation and budget preparation; resources mobilization
- Collection Development: Print and Non-Print including Electronic Documents, using and supporting Development of OERs and MOOCs
- Library Buildings: Planning and Standards. Risk and disaster management guidelines, Green Library Building, Building Learning Commons/ Learning Spaces for users and local community

UNIT III: Library Organization and Management

- Library authority and leadership role
- Centralized v/s Decentralized System: Departmental Libraries;
- Organization of Various Sections: Acquisition, Book section, Periodical, Technical, Reference or Help desk, Circulation and Library Management Section, ICT or Digital Learning Centre
- Library Furniture, Equipment and Stationaries, Branding and Social Media Presence

UNTI IV: Resource Sharing, Networking, Consortium and Policies

- Concept, Need and Purpose of Resource Sharing, Networking and consortium
- National Networks and Consortia: INFLIBNET, e-Shodh Sindhu,
- Institutional Repositories (IR): Concept, Need, National and International Academic IRs/ eTDs/Digital Repositories
- National Education Policy 2020 and Role of Libraries; Integration of the Library with the Institutional ERP like Samarth, Learning Management System (LMS), SWAYAM MOOCs, IRINS, etc.

Recommended Readings

1. Dearie, T. N., Meth, M., & Westbrook, E. L. (Eds.). (2017). Academic library management: Case studies. American Library Association.
2. Arch, X., & Gilman, I. (2020). Academic Library Services for First-generation Students. ABC-CLIO.
3. Appleton, L. (Ed.). (2021). Positioning the Academic Library within the University: Structures and Challenges. Routledge.
4. Chigwada, J. P. (2021). Examining the Impact of Industry 4.0 on Academic Libraries. N. M. Nwaohiri (Ed.). Emerald Publishing Limited.
5. Bhatt, R.K. Srivastava, G.G. and Sharma, S K., Eds. Academic Libraries. (2021). K.K. Publications.
6. Brophy, Peter. (2006). The academic library. London: Facet.
7. Budd, J. (2012). The changing academic library: Operations, culture, environments. 2nd ed. Chicago: Association of College and Research Libraries.
8. Chapman, L. (2008). Managing acquisitions in library and information services. London: Facet Pub.
9. Connor, E. (2008). An introduction to instructional services in academic libraries. New York and London: Routledge.
10. Frederick, D. E. (2016). Managing eBook metadata in academic libraries: Taming the tiger. Amsterdam :Chandos Publishing
11. Higgins, S. E., & Derakhshan, M. (2017). Managing academic libraries: Principles and practice. Amsterdam: Chandos Publishing.
12. Jordan, P. (2017). The academic library and its users. Oxon : Routledge
13. Mack, D. C., & Gibson, C. (2012). Interdisciplinary and academic libraries. Chicago : Association of College and Research Libraries
14. Munde, G., & Marks, K. (2009). Surviving the future: Academic libraries, quality, and assessment. Oxford: Chandos.

Course Title: Public Library Systems

Course Objective: To offer an understanding of the working of public libraries and the various aspects related to managing the public libraries.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the nature and role of Public Libraries and Information Systems and explain the role of Government and other Agencies in the development of libraries
2. Perceive the role of Public Library in the promotion of formal and informal education and appropriate policies and legislations
3. Select, acquire, organize and manage public library collection in both print and digital media
4. Understand the requirement for resource sharing and offer extension and outreach services to different categories of users

UNIT I: Public Libraries

- Meaning, Importance, Objectives and Functions; Public Library Movement in India: Recommendation by S.R. Ranganathan
- Agencies for Development of Public Libraries: UNESCO, IFLA; Role of Raja Ram Mohan Roy Library Foundation (RRRLF) and National Library (Kolkata), Ministry of Culture GOI, National Missions- National Mission on Libraries, National Mission for Manuscripts, National Literacy Mission, NPTEL
- Public Library System: National; Regional and State; Library Governance and Role of Public Library in lifelong learning

UNIT II: Organization and Administration

- Collection Development: Print, Non-print and Online Database
- Manpower Development: Qualification, Requirement, Job description, Job Analysis and Staff Manual
- Public Libraries Finance: Source, Budgeting, Accounting and auditing; Library Building: Planning, concept of modular building and Library Furniture

UNIT III: Automation, Resources Sharing and Services

- Library Automation: Automating the house-keeping services in various sections in the public libraries
- Resource Sharing and Networking, Integrated public library system
- Community Information Service; Library Services to Special Group of people including physically handicapped, mentally challenged, visually impaired, prisoners and children

UNIT IV: Policies and Legislation

- Library & Information Policy: Library & Information Policy at National and International level in India, Advisory Committee for Libraries, National Knowledge Commission, National Education Policy 2020 and Public Library
- Library Legislation: Need, Purpose, Objectives and Model Library Act
- Library Legislation in India: Structure and Salient Features

Recommended Readings

1. Abbott-Halpin, E., & Rankin, C. (Eds.). (2020). *Public Library Governance: International Perspectives* (Vol. 176). Walter de Gruyter GmbH & Co KG.
2. Barua, B P. (1992). *National policy on library and information systems and services for India: Perspectives and projections*. Bombay: Popular.
3. Bhatt, R K. (2004). *UNESCO: Development of libraries and documentation centres in developing countries*. New Delhi: K. K. Publications.
4. Cassell, K.A. (2021). *Public libraries and their communities: An introduction*, Rowman & Littlefield
5. Downey, J., & LaRue, J. (2017). *Public library collections in the balance: Censorship, inclusivity, and truth*. California: Libraries Unlimited.
6. Goulding, A. N. N. E. (2017). *Public libraries in the 21st century: defining services and debating the future*. S.l. : Garland Science.
7. Hage, Christine Lind. (2004). *The public library start-up guide*. Chicago: American Library Association.
8. Higgins, S E. (2007). *Youth services and public libraries*. Oxford: Chandos Publishing.
9. Jaeger, P. T. (2019). *Introduction to Public Librarianship*.
10. Mckeown, A. (2016). *Overcoming information poverty: investigating the role of public libraries in the twenty-first century*. Chandos Publishing.
11. Neville, K. (2009). *Popular, practical text on children's library services: Managing children's services in the public library*. By Adele M. Fasick and Leslie E. Holt. Westport, CT: Libraries Unlimited, 2008
12. Patel, J. & Kumar, K. (2001). *Libraries and librarianship in India*. Westport: Greenwood Press.
13. Shaffer, G. L. (2018). *Creating the sustainable public library: The triple bottom line approach*. ABC-CLIO.
14. Thomas, V K. (1997). *Public libraries in India: Development and finance*. New Delhi: Vikas Publication.
15. Totterdell, Anne. (2005). *An Introduction to library and information work*. London: Facet.
16. Weingand, D. E. (2013). *Administration of the small public library*. New Delhi: Indiana Publishing House.

Course Title: Special Library Systems

Course Objective: To offer an understanding of the working of special libraries and information centers and the various aspects related to managing the special libraries and information centers.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the role and functions of special libraries and become well versed with the special libraries' development in the USA, UK and India
2. Know about the organizational and administrative aspects of special libraries
3. Make provisions for information services and products in special library
4. Understand the need for resource sharing and work for marketing of library and information services

UNIT I: Special Libraries

- Concept, Role, Characteristics and Functions of Special Libraries
- Development of special libraries in USA, UK and India
- Role of Special Libraries Association of India, UK and USA
- Changing Role of Special Libraries: Case Studies

UNIT II: Effective Resources Management

- Manpower Development and Recruitment: Qualifications, Job Description and Staff Manual
- Collection Development and Management of Government Documents, Maps, Manuscripts, Newspaper Clippings, Serials, specifications (patents and standards) Technical Reports and Theses
- Financial Management and Auditing: Sources of Finance and Budgeting Techniques, Accounting, Auditing
- Library Building: Library Building: Principles, Planning and Features

UNIT III: Information Services

- Support for the Intelligent Organization, Self-Support Services
- Information Services: Bibliographic, Current Awareness (CAS), Alerts, Digest, Documentary Delivery, Indexing, Abstracting, Referral, Selective Dissemination (SDI), Translations, Consultancy
- Information and Content Analysis, Consolidation and Repackaging, Trend Reports
- Excellence in special library services and products

UNIT IV: Resource Sharing and Marketing of Information

- Resource Sharing Concept, Areas, and Factors, elements and process

- Resources Sharing Networks: RLIN, OCLC, etc
- Marketing of Information: Concept, marketing plan, Marketing Strategies, Social Media Strategies
- Value of Information, User Benefits, ROI, Evidence Based Librarianship

Recommended Readings

1. Burton, P. F. and Patric J. H. (1991). Information Management Technology: A Librarian's Guide. London: Chapman and Hall.
2. Clapp, V. W. (2010). Features of the research library. Urbana: University of Illinois.
3. Dhawan, K.S.(1997). Multi-media Library. New Delhi: Commonwealth Publishers.
4. Matarazzo, J. M., & Connolly, S. D. (2016). Knowledge and special libraries. London: Routledge.
5. Mount, E, Ed. (2019). Creative Planning of Special Library Facilities. United Kingdom: Taylor & Francis.
6. Mount, E. Serving End-Users in Sci-Tech Libraries. (2019). United Kingdom: Taylor & Francis.
7. Robertson, G. (2020). Disaster Planning for Special Libraries. United Kingdom: Elsevier Science.
8. Scammell, A. (2008). Handbook of special librarianship and information work. London: Routledge.
9. Semertzaki, E. (2011). Special libraries as knowledge management centres. Oxford: Chandos Publishing.
10. Wilkie, Chris. (2009). Managing film and video collections. London: Aslib
11. Yap, J. M., et al. (2016). Special library administration, standardization and technological integration. Hershey, PA: Information Science Reference

Course Title: Learning Skills

Course Objective: To make aware about the importance of learning in everyday life including student days and promote to actively participate in learning activities on sustainable basis.

Learning Outcomes

On studying the course, students shall be able to:

1. Have conceptual clarity of the meaning and importance of learning in one's life
2. Understand about his own learning disability and would attempt to overcome them
3. Involve themselves in the self-learning skills as a means to continuous improvement in the way to learn
4. Have a map of the learning skills required in the present time and adapt according to future needs.

Unit-1: Introduction to Learning

- Meaning of learning, Nature of Learning, Sequence of Learning, Teaching learning process, its relationships (with studying, teaching, education),
- Learning Process, Learning Trajectories
- Different types of learning (Enquiry-based learning, Activity-based learning, experiential learning, Resource Based Learning, Outcome Based Learning, Guided Learning, Work Based Learning, Individual and Collaborative Learning)
- Learning Behaviour: Perceptions and Reality; Human Behaviour

Unit-2: Learning Opportunities and Resources:

- Understanding Learners, Learning Needs, Art of Learning and Unlearning
- Learning as Life Skill, Learning to Learn, Lifelong learning,
- Avenues for Learning: Class, Sports complex, Laboratories, Clubs and cells,
- Learning Resources: Media and information management, Online education, Web-based resources, OERs, Libraries, Practical training, Dissertations and reports

Unit-3: Twenty First Century Learning Skills

- Critical thinking and Creative thinking
- Communicating and collaborating
- Learning as career
- Mapping learning requirements for the present time and future

Unit- 4-Improving Learning Skills

- Identify weak areas; Practice better habits in your daily life;

- Take an appropriate course; Participate in volunteer opportunities, finding meaning within the opportunity one gets
- Adhering to datelines, working in teams, adapting to environmental changes, highlighting learning skills in the resume, interview
- Assess yourself in the group, with the seniors, evidences of practice of learning

Recommended Readings

1. Bardi, U. (2019). Sustainability on University Campuses: Learning, Skills Building and Best Practices. Germany: Springer International Publishing.
2. Chipman, S. F., Segal, J. W., & Glaser, R. (Eds.). (2013). Thinking and learning skills: Volume 2: Research and open questions. Routledge.
3. India (2020). National Education Policy 2020. Ministry of Education.
4. James, N., Busher, H. (2018). Improving Opportunities to Engage in Learning: A Study of the Access to Higher Education Diploma. United Kingdom: Taylor & Francis.
5. Knapper, C., & Cropley, A. J. (2000). Lifelong learning in higher education. Psychology Press.
6. McDaniel, M. A., Brown, P. C., & Roediger III, H. L. (2014). Make It Stick The Science of Successful Learning. Cambridge, MA Harvard Univ Pr.
7. Nilson, L. (2013). Creating self-regulated learners: Strategies to strengthen students? self-awareness and learning skills. Stylus Publishing, LLC..
8. Northup, J., Peno, K. and Mangiante, E. M. S., Eds. (2021). Teaching and Learning for Adult Skill Acquisition: Applying the Dreyfus and Dreyfus Model in Different Fields. (2021). United States: Information Age Publishing, Incorporated.
9. Segal, J. W., Chipman, S. F., & Glaser, R. (Eds.). (2014). Thinking and learning skills: Volume 1: relating instruction to research. Routledge.
10. Wang, V. C. (Ed.). (2015). Handbook of research on learning outcomes and opportunities in the digital age. IGI Global.
11. Westerberg, C., McBride, T. (2020). Acquiring Learning Skills with Digital Technology. United States: Information Science Reference.
12. Zima, B. (2021). Mindsets and Skill Sets for Learning: A Framework for Building Student Agency. United States: Marzano Resources.

Course Title: Media and Information Literacy

Course Objective: To provide knowledge of the media and information literacy and their channels and various issues involved.

Learning Outcomes

On studying this course, students shall be able to:

1. Know the various kind of literacies relevant in the present age and the need for information and media literacy in particular.
2. Understand the media messages and their creators, and recognise bias, spin, misinformation, false information.
3. To know various channels of information and media and know various types of information sources and evaluate information and media sources.
4. Understand the legal rights in relation to information and media structures of media ownership, legal, ethical, and societal issues in Media and Information

Unit-1: Introduction

- Definition of Media, Information, Technology
- Digital Literacy; Media and Information literacy
- Meaning and Development of Traditional and New Media
- Types and Characteristics of Traditional and New Media, Fusion between Traditional and New media

Unit-2: Information Sources/ Resources

- Sources of Information; Mass Media, Libraries, Archives, Internet, etc.
- Role of various Information Source/Providers
- Locating the Sources; Retrieve sources from a Variety of Information Systems
- Evaluate / Analyse / Relate/Interpret Sources, Messages and Information; Select Appropriate Sources; Evaluating Sources; Sharing and Publishing Avenues

Unit-3: Media and Information Literacy

- Knowledge of available Communication and Information Resources, Media Communication, Information Chain
- Basic Principles such as Freedom of Expression and Information
- Reflections on Learning, Metacognition
- Enquiring and Engaging in Research Skills and Processes, Critical Thinking, Pluralism of Ideas/Respect of others' Opinions, Tolerance, Respect of Authorship, Social Responsibility, Wise use of Information

Unit-4: Legal, Ethical, and Societal Issues in Media and Information

- Copyright, plagiarism, computer addiction
- Cyber bullying, dangers of internet use, 'Fake news'
- Information overload

- Obsession of information, media and social issues

Recommended Readings:

1. Agosto, D. E. (Ed.). (2018). *Information literacy and libraries in the age of fake news*. ABC-CLIO.
2. Christian, S. E. (2019). *Everyday media literacy: an analog guide for your digital life*. Routledge.
3. Frau-Meigs, D., Velez, I., & Michel, J. F. (Eds.). (2017). *Public policies in media and information literacy in Europe: Cross-country comparisons*. Taylor & Francis.
4. Hobbs, R. (2021). *Media literacy in action: Questioning the media*. Rowman & Littlefield Publishers.
5. Kellner, D., & Share, J. (2019). *The critical media literacy guide: Engaging media and transforming education*. Brill.
6. Leaning, M. (2017). *Media and information literacy: An integrated approach for the 21st century*. Chandos Publishing.
7. Lloyd, A. (2021). *The Qualitative Landscape of Information Literacy Research: Perspectives, Methods and Techniques*, Facet Publishing
8. Oberg, D., & Ingvaldsen, S. (Eds.). (2016). *Media and information literacy in higher education: Educating the educators*. Chandos Publishing.
9. American Association of School Librarians and Associations for Educational Communications and Technology. (1998). *Information Standards for Student Learning*. Chicago: American Library Association.
10. Armstrong, S. (2008). *Information Literacy: Navigating & evaluating today's Media*. California: Shell Education.
11. Blanchett, H., Powis, C. & Webb, J. (2012). *A Guide to Teaching Information Literacy: 101 Practical Tips*. London: Facet Publishing.
12. Ercegovac, Z. (2008). *Information literacy: Search strategies, tools & resources for high school students and college freshmen (2nd ed.)*. Ohio: Linworth.
13. Herring, J. (2011). *Improving Students' web use and information literacy: A guide for teachers and teacher librarians*. London: Facet Publishing.
14. Koltay, T., Špiranec, S. & Karvalics, L. Z. (2016). *Research 2.0 and the Future of Information Literacy*. London: Chandos Publishing.
15. Neely, T. Y. (2006). *Information Literacy Assessment: Standards-Based Tools and Assignments*. Chicago: American Library Association.
16. Radcliff, C. J., et. al. (2007). *A Practical Guide to Information Literacy Assessment for Academic Librarians*. Westport: Libraries Unlimited.
17. Sales, D. & Pinto, M. (Eds.) (2017) *Pathways into Information Literacy and Communities of Practice: Teaching Approaches and Case Studies*. London: Chandos Publishing.

Semester – II

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 02 01 C 3104	Indian Ethos and Ethics for Information Professionals	Core	3	1	0	04
2	SIAS LIS 02 02 C 2065	Knowledge Organization and Processing: Library Classification (Theory and Practice)	Core (SEC)	2	0	6	05
3	SIAS LIS 02 03 C 2065	Knowledge Organization and Processing: Library Cataloguing (Theory and Practice)	Core (SEC)	2	0	6	05
4	SIAS LIS 02 04 C 3104	Management of Libraries and Information Centers	Core	3	1	0	04
5	SIAS LIS 02 05 C 2103	E-Resource Management	Core	2	1	0	03
6	SIAS LIS 02 01 DE 3115	Collection Development	DE	3	1	1	05
7	SIAS LIS 02 02 DE 3115	Preservation and Conservation of Library Material	DE	3	1	1	05
8	SIAS LIS 02 03 DE 4105	Life and Works of S R Ranganathan	DE	4	1	0	05
9	SIAS LIS 02 01 SEEC 4105	Library Internship (Online /Offline in a library)	SEEC	-	-	-	-
Credits		C=21, DE=5	Total Credits = 26				

Course Title: Indian Ethos and Ethics for Information Professionals

Course Objective: To give an understanding of the ethical issue involved in managing libraries and information centers and the Indian value system to manage in a better way abiding moral values.

Learning Outcomes

On studying of the course, students will be able to:

1. Develop and communicate a personal understanding of the moral significance and ethical responsibilities of being a library professional.
2. Develop and communicate an understanding of the goals of librarianship, including the influence of culture and diversity on library services practices.
3. Develop the knowledge and skills necessary to make ethically responsible decisions, including the development of deliberative capacities in which communication, listening, reflection, and reasoning are part of moral deliberation and conflict resolution.
4. Assess their abilities in contexts with respect to critical reasoning, effective communication, and ethical decision-making in context of values residing in Indian value system
5. Examine role of Indian ancient texts for self-development in order to work in cross-cultural environment.

Unit-1: Professional Ethics

- Introduction to professional ethics and values
- Code of professional ethics: National and International
- Librarianship as a service profession
- Library philosophy as guide for values and ethics

Unit-2: Ethical dilemma

- Ethical values towards institution/society and the library
- Ethical values towards staff and users
- Ethical values towards other libraries, associations and profession
- Ethical values towards the issue of plagiarism, computer/internet filtering, user privacy, copyright, censorship, free and open access

Unit-3: Self-management as Ethical Practices in Indian Ethos

(For self-discipline and personal development, the key lessons from ancient Indian sources and leaders for motivation to be ethical)

Unit-4: Indian value system and professional ethics for librarianship

- Ethics for LIS managers
- Ethical Philosophy- Indian perspective
- Need for Spiritual Values in LIS Management

- Holistic approach to ethics for Library and Information Professionals

Recommended Readings

1. Chakraborty, S. K. (1985). Human response in organizations: Towards the Indian ethos. Vivekananda Nidhi.
2. Nair, S. N. (2008). Echoes of Ancient Indian Wisdom: The Universal Hindu Vision and Its Edifice. India: Pustak Mahal.
3. Pandey, K. C. (2011). Ethics & Epics: Reflections on Indian Ethos. Readworthy.
4. Panigrahy, D. How To Develop A New Work Culture: Exploring The Indian Ethos. (1994). India: Kanishka Publishers.
5. Pérez Pulido, M. (2017). Ethics Management in Libraries and Other Information Services. United Kingdom: Elsevier Science.
6. Pfister, J. (2009). Coda. The Indian Ethos of Service. In The Yale Indian (pp. 161-174). Duke University Press.
7. Ranganathan, S. R. (1931). The five laws of library science. Madras Library Association (Madras, India) and Edward Goldston (London, UK).
8. Ranganathan, S. R. (1951). Documentation Genesis and Development. Vikas Publishing House (Delhi, India).
9. Ranganathan, S. R. (1961). Reference service. Asia Publishing House (Bombay).
10. Ranganathan, S. R. (1963). Documentation and its Facets: Being a Symposium of Seventy Papers by thirty-two Authors. Asia Publishing House (Bombay).
11. Shrimad Bhagwad Gita
12. Valmiki Ramayan

Course Title: Knowledge Organization and Retrieval-I:

Library Classification (Theory and Practice)

Course Objective: To provide basic knowledge of the organization of knowledge in libraries specially awareness of the library classification systems to effectively organize the collections and libraries.

Learning Outcomes

On studying of the course, students will be able to:

1. Understand the concept of library classification, call number, universe of knowledge, Modes of formation of subjects, etc.
2. Acquaint with the classification schemes and their salient features with modern techniques of knowledge organization
3. Construct class numbers for documents with simple, compound and complex subjects
4. Synthesize class numbers by using the standard subdivisions/common isolates/ auxiliary tables

Unit 1: Library Classification

- Introduction to Library Classification: Concept, Objectives & Functions
- Call Number: Class number, Book Number and Collection Number
- Modes of Formation of Subject
- Notation & Five Fundamental Categories

Unit 2: Library Classification Scheme & Current Trends

- Types of Classification Schemes: Enumerative, Faceted and Analytico-Synthetic
- Normative Principles of Library Classification
- Modern Knowledge Origination Tools: Thesauri, Taxonomies and Folksonomies
- Semantic Web: SKOS and OWL, Reclassification

PART I: Construction of Class Numbers for documents of different disciplines / subjects using Colon Classification 6th Revised edition

- Dealing with Basic Subjects, complex subjects, complex isolates and complex array isolates
- Use of Anteriorising and Posteriorising Common isolates, Language isolates, Space isolates & Time isolates
- Use of different Devices

PART II: Construction of Class Numbers for documents of different disciplines / subjects using Dewey decimal classification 22nd/23rd edition

- Analysis of a work; direct approach; Main classes, Divisions and Sections
- Using synthetic features: Add from schedules

- Use of Table 1 ‘Standard Subdivisions’; Table 2 ‘Area’; Table 3 ‘Subdivisions of individual literature’; Table 4 ‘Subdivisions of individual languages’; Table 5 ‘Racial, Ethnic, National Groups’, and Table 6 ‘Languages’.

Recommended Readings

1. British Standards Institution. (2005). UDC: Universal Decimal Classification. London: British Standards Institution.
2. Broughton, Vanda (2015). Essential classification. 2nd ed. London: Facet.
3. Dewey, M. (2003). Dewey Decimal classification (22nd ed., Vols. 1-4). Ohio: OCLC.
4. Dewey, M. (2011). Dewey decimal classification and relative index (23rd ed., Vols. 1-4). Ohio: OCLC.
5. Joudrey, D. N., & Taylor, A. G. (2017). The organization of information. ABC-CLIO.
6. Krishan Kumar. (2000). Theory of classification. 4th rev ed. New Delhi: Vikas Publications.
7. Kumbhar, R. (2011). Library Classification Trends in the 21st Century. London: Chandos Publishing.
8. Kumbhar, R. (2011). Library classification trends in the 21st century. Elsevier.
9. Oggier, D. (2010). Harnessing Folksonomies with a Web Crawler. Germany: Verlag
10. Peters, I. (2009). Folksanonomies, Indexing and Retrieval in Web 2.0. Germany: Saur
11. Ranganathan, S R. (1963). Colon Classification (6th ed.).(With amendments). Bombay: Asia.
12. Ranganathan, S. R. (1962). Elements of Library Classification. (3rd ed). Bombay: Asia
13. Ranganathan, S. R. (1987). Colon Classification (7th ed.). Revised and edited by M.A. Gopinath. Bangalore: SaradaRanganathan Endowment for Library Science.
14. Ranganathan, S. R. (1989). Prolegomena to Library Classification. (3rd ed.) Bangalore: SRELS.
15. Ranganathan, S. R. (2006). Colon classification (6th ed.). New Delhi: EssEss Publications.
16. Satija, M. P. (2002). Manual of practical colon classification.4th rev ed. New Delhi: Concept.
17. Satija, M. P. (2007). The theory and practice of the Dewey Decimal Classification system. Oxford: Chandos.
18. Satija, M. P. (2011). A guide to the theory and practice of colon classification. New Delhi: EssEss Publications.
19. Satija, M. P. (2013). The theory and practice of the Dewey decimal classification system. Elsevier.
20. Stuart, David (2016). Practical ontologies for information professionals. London: Facet

Course Title : Knowledge Organization and Retrieval-II: Library Classification (Theory and Practice)

Course Objective: To provide basic knowledge of the organization of knowledge in libraries specially awareness of the searching and accessing through effective cataloging systems in libraries.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the concept of Library Catalogue & its Forms
2. Acquaint the catalogue codes and RDA for knowledge processing and bibliographic description and controlled vocabulary
3. Understand the title, analyze the entry elements and understand different parts of catalogue entries
4. Prepare catalogue cards for various types of books and non-book material

Unit 1: Library Catalogue & Codes

- Introduction to Library Catalogue: Concept, Objectives & Functions
- Forms (Kinds): Physical and inner form of Library Catalogue
- Classified Catalogue Code with additional Rules for Dictionary catalogue code (CCC)
- Anglo-American Cataloguing Rules -2(AACR-2) & Resource Description and Access (RDA)

Unit 2: Bibliographic Description & Controlled Vocabulary

- Standards for Bibliographic Description: ISBDs, FRBR, CCF
- Bibliographic Record Format: MARC, UNIMARC
- Vocabulary Control – Concept, Design
- Subject Cataloguing: Techniques for Deriving Subject Headings

PART 3: Preparing Catalogue Entries (Main, Added and Reference Entries) for Books (Monographs) using Anglo American Cataloguing Rules -2 revised edition and Assigning Subject Headings to all entries (Using at least one Standard Subject Heading)

- Single Personal Authorship; Joint Authorship; Works of more than three Authors
- Collaborative Works; Series; Multivolume Works; Pseudonymous Authors
- Composite Works
- Corporate Authorship
- Organizations, Institutions, Societies
- Uniform Titles; Sacred Scripture; Anonymous Works

PART 4: Preparing Catalogue Entries (Main, Added and Reference Entries) for Non-Book Materials using Anglo American Cataloguing Rules -2 revised edition. Also Assigning Subject Headings (Using at least one Standard Subject Heading)

- Serials
- Cartographic Materials

- Manuscripts
- Graphic Materials
- Printed Music
- Sound Recordings, Motion Pictures & Video Recordings

Recommended Readings

1. American library association. (1968). *ALA Rules for filing catalog cards*. Chicago: ALA.
2. Bakewell, K. G. B. (2014). *A Manual of Cataloguing Practice: International Series of Monographs In library and Information Science* (Vol. 14). Elsevier. *catalogue code*. 5th ed. Bombay: Asia.
3. Chambers, Sally (ed.) (2013). *Catalogue 2.0: The future of library catalogue*. London: Facet.
4. Chaudhary, G. G. & Chaudhary, Sudatta (2007). *Organizing information: From the shelf to the web*. London: Facet .
5. Cutter, Charles A. (1949). *Rules for a Dictionary Catalogue*. London: Library Grafton & Co.
6. Domanovszky, Á. (2017). *Functions and objects of author and title cataloguing*. De Gruyter.
7. El-Sherbini, M. (2013). *RDA: Strategies for implementation*. American Library Association. Englewood: Libraries Unlimited.
8. Foskett, A. C. (1996). *Subject Approach to Information*. 5th ed. London: Library Association.
9. Girja Kumar, & Krishan Kumar. (1988). *Theory of cataloguing*. 5th ed. New Delhi: Vikas.
10. International Federation of Library Associations and Institutions., & International Federation of Library Associations and Institutions. (2011). *ISBD: International Standard Bibliographic Description*. Berlin: De Gruyter Saur.
11. Joint Steering Committee for Revision of AACR, & American Library Association. (2005). *Anglo American cataloguing rules*. (2nd ed). (1988). Chicago: American Library Association.
12. Lazinger, S. S. (2005). *Digital preservation and metadata: History, theory and practice*. Libraries Unlimited.
13. Library of Congress. (2000). *MARC 21 concise format for bibliographic data*. Washington D.C.: Library of Congress, Network Development and MARC Standards Office.
14. Maxwell, Robert L. (2014). *Maxwell's handbook for RDA: Explaining and illustrating RDA: resource description and access using MARC 21*. London: Facet.
15. Miller, J. (2011). *Sear's list of subject headings*. 21st ed. New York: H.W. Wilson.
16. Oliver, C. (2010). *Introducing RDA: a guide to the basics*. American Library Association.
17. Olson, H. A. & Boll, J. J. (2005). *Subject analysis in online catalogues*. 2nd ed. Englewood:
18. Ranganathan, S. R. (1964). *Classified Catalogue Code with additional rules for Dictionary*
19. Ranganathan, S. R. (1974). *Cataloguing practice*. 2nd ed. Bombay: Asia.
20. Richard, Gartner (2016). *Metadata: knowledge from antiquity to the semantic web*. London: Springer.
21. Welsh, A., & Batley, S. (2012). *Practical Cataloguing: AACR, RDA and MARC 21*. Facet Publishing.
22. Zeng, Marcia & Qin, Jian (2016). *Metadata*. 2nd ed. London: Facet.

Course Title: Management of Libraries and Information Centers

Course Objective: To make aware of the effective management theories and use integrated library management system for efficient management and better staff performances in libraries and information centers.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the modern concept of management and application of management concept and principles of management in libraries and information centers
2. Comprehend the concept of ILMS and perform various tasks involved in ILMS
3. Plan for effective resource management and bring strategic focus in the planning process.
4. Understand the role of library staff in performing in a team leading for improved work culture

Unit 1: Principles and Functions of Management

- Concept, Definition, Functions and Principles of Management, and Schools of Management Thoughts
- Change Management and Total Quality Management
- Marketing as Philosophy approach
- Scope and Application of Management Approaches and in L& Centers

Unit 2: Integrated Library Management System

- Acquisition Management: Selection, Acquisition, Vendor's Communication, Billing and Processing
- User Services Management: Membership Services, Circulation, Alerts, Document delivery, customized products and services, Remote Access, Discovery Based Services
- Access Management: Shelving, Stock Verification, Security issues, Barcode, RFID, Smart cards,
- Stock Management: Stock verification, Maintenance and preservation,
- Information Management: Library Statistics and Library Analytics, Annual report

Unit 3: Planning Perspectives

- Strategic Planning: Goal Setting, Policy making, Forecasting
- Operational Planning Techniques (Use of planning tools like Gantt chart, PERT/CPM)
- Financial Planning (sources and generation of income) and Financial Management (Budgeting, Accounting, Auditing)
- Space Planning and Disaster Planning for library and information Centre
- Event Planning and management

Unit 4: People Management

- Team Management in library and information Centre, Library Managers and their roles

- Analyzing performances of staff
- Motivating employees and users, Self-management for library managers
- Human resource development, Outsourcing and hiring of staff

Recommended Readings

1. Bold Minds: Library Leadership in a Time of Disruption. (2020). Romania: Facet Publishing.
2. Bryson, J. (2018). Effective Library and Information Centre Management. United Kingdom: Routledge.
3. Byrson, J. (2017). Effective Library and Information Centre Management S.l.: Routledge.
4. Evans, G. E. & Alire, C. (2014). Management Basics for Information Professionals. 3rd ed. Chicago: American Library Association.
5. Greenwell, S., Evans, G. E. (2020). Management Basics for Information Professionals. United States: American Library Association.
6. Griffin, R. W. (2016). Fundamentals of Management. Boston, MA: Cengage Learning.
7. Hayss, Robert M. (2001). Models for Library Management, Decision-Making and Planning. New York: Academic Press.
8. Information Professionals. 2nd ed. Englewood Cliffs: Libraries Unlimited.
9. Laves, A. Management Skills for the Information Manager. (2018). United Kingdom: Taylor & Francis.
10. Lesneski, T. E. (2018). Library Design for the 21st Century: Collaborative Strategies to Ensure Success. Germany: De Gruyter.
11. Madeleine, C., Sahavirta, H and Hauke, P., Eds Going Green: Implementing Sustainable Strategies in Libraries Around the World: Buildings, Management, Programmes and Services. (2018). Germany: De Gruyter.
12. Matthews, J. R. (2018). The evaluation and measurement of library services. CA: Libraries Unlimited.
13. Moran, B. B. & Morner, C. J. (2018). Library and information center management. California: Libraries Unlimited.
14. Moran, B. B., Morner, C. J. (2017). Library and Information Center Management, 9th Edition. United States: ABC-CLIO.
15. Osborne, Larry N & Nakamura, Margaret. (2000). Systems Analysis for Librarians and
16. Osuigwe, N E. Managing and Adapting Library Information Services for Future Users. (2019). United States: IGI Global.
17. Ranganathan, S. R. (2006). Library Administration. India: EssEss Publications.
18. Sannwald, W.W. (2018). Financial management for libraries. American Library Association.
19. Simmons-Welburn, J. & McNeil, B. (2004). Human resource management in today's academic library: Meeting challenges and creating opportunities. Westport, Conn: Libraries Unlimited.
20. Stueart, R. D. & Moran, B. B. (2013). Libraries and information center management. 8th ed. London: Libraries Unlimited.
21. Wilkins-Jordan, M. E. (2020). Essential Management Skills for Library and Information Professionals. United States: American Library Association.

Course Title: E-Resource Management

Course Objective: To give an understanding of the various types of e-resources, policy, access and use related issues in a modern library and information center.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the basic concept, types, and process of collection building of e-Resources
2. Grasp the issues related to licensing, negotiation, access and use.
3. Promote to work in collaborative environment for better resources access and delivery with examples from leading consortia in India
4. Understand the user requirements and offering user-centric services and further analyzing for meeting and satisfying these demands

UNIT I: Electronic Resources Collection Development

- Concept, Need, Characteristics, Benefits and Drawbacks of e-resources
- Types of e-Resources: E-databases, E-journals, E-books, Linking Technologies, etc. Preservation of e-Resources
- Collection Building Process - Formulating Policy
- Budgeting, Pricing, Licensing, Ordering and Receiving, Evaluation of e-Resources

UNIT II: e-Resources: Negotiations, Licensing, and Access

- Model Licenses and Guidelines for Collection Building
- Negotiation –Concept and Need
- Copyright in the Digital Environment and User Training
- Delivery of e-Resources & Access Management and Authentication

UNIT III: Consortia

- Concept, Need and Purpose of Consortia
- Growth, development of Consortia and steps followed in formation a Consortia
- Collection Building of e-Resources through Consortia
- National and International Consortia: E-ShodhSindhu, IIMs, CSIR and OCLC. ETDs: Shodhganga

UNIT IV: Usage of Electronic Resources

- Management of Information Needs: with alert, document delivery, ask-a-librarian services
- Usage Statistics, e-Resource Usage Analysis
- Standards and Guidelines (COUNTER); Processing, Analysis and Presentation of Data
- Discovery based services

Recommended Readings

1. W Pattie, L. Y., Cox, B. J. (2020). *Electronic Resources: Selection and Bibliographic Control*. United States: CRC Press.
2. Patra, N. K. (2017). *Digital Disruption and Electronic Resource Management in Libraries*. United Kingdom: Elsevier Science.
3. Halaychik, C. S., Reagan, B. (2018). *Licensing Electronic Resources in Academic Libraries: A Practical Handbook*. United Kingdom: Elsevier Science.
4. Stachokas, G. (2019). *The Role of the Electronic Resources Librarian*. United Kingdom: Elsevier Science.
5. Lal, J., Tripathi, A. (2016). *Library Consortia: Practical Guide for Library Managers*. Netherlands: Elsevier Science.
6. Talbott, H., Zmau, A. (2018). *Electronic Resources Librarianship: A Practical Guide for Librarians*. United States: Rowman & Littlefield Publishers.
7. Conger, J. E. (2004). *Collaborative Electronic Resource Management: From Acquisitions to Assessment*. Westport: Libraries Unlimited.
8. Curtis, D., & Scheschy, V. M. (2005). *E-journals: A how-to-do-it manual for building, managing, and supporting electronic journal collections*. New York: Neal-Schuman Publishers.
9. Fenner, A. (2014). *Managing digital resources in libraries*. New York: Routledge.
10. Fowler, D. C. (2004). *E-serials collection management: Transitions, trends, atechinicalities*. New York: Haworth Information Press.
11. Garibyan, M., McLeish, S., & Paschoud, J. (2017). *Access and identity management for libraries: Controlling access to online information*. London: Facet Publishing.
12. Hanson, A., & Levin, B. L. (2003). *Building a virtual library*. Hershey: Information Science Pub.
13. Jones, W. (2014). *E-journals access and management*. New York: Routledge.
14. Katz, L. S. (2003). *Collection Development Policies: New Dimension for Changing Collections*. London: Routledge.
15. Kemp, R. (2008). *E-resource evaluation & usage statistics: Selector's choices*. Saarbrücken: VDM Verlag Dr. Müller.
16. Lee, S. D. (2004). *Building an electronic resource collection: A practical guide*. London: Facet Publishing.
17. Lee, S. H. (2012). *Electronic Resources and Collection Development*. Hoboken: Taylor and Francis
18. Webster, P. M. (2008). *Managing electronic resources: New and changing roles for libraries*. Oxford: Chandos.
19. Verminski, A., & Blanchat, K. M. (2017). *Fundamentals of electronic resources management*. Chicago : Neal-Schuman
20. Lee, Sul H. (2003). *Electronic Resources and Collection Development*. London: Routledge
21. Yu, H., & Breivold, S. (2008). *Electronic resource management in libraries: Research and practice*. Hershey: Information Science Reference

Course Title: Collection Development

Course Objective: To make familiar with the concept of collection development and collection management programme, policies, and evaluation strategies.

Learning Outcomes

On studying this course, students shall be able to:

1. Be familiar with concepts of collection development along with the theories and principles, tools and selection criteria components etc.
2. Understand the collection development programme and process
3. Plan and evaluate strategies for collection development practices
4. Analyze and review the collection for effective management

UNIT I: Collection Development

- Collection Development – Concept; Goals and Methods
- Components of Collection Development
- Theories and principles of Selection by Ranganathan; Drury; Dewey; Library of Congress and American Library Association
- Selecting Materials/Basic Tools and Criteria for Selection

UNIT III: Collection Development Programme and Process

- Collection Development Program
- Universe of Published Materials
- Collection Development Policy/Weeding out Policy
- Budgeting & Finance

UNIT II: Collection Analysis and Review

- Collection Analysis as a Management Tool
- Approaches to Collection Analysis
- Methods of Collection Based Analysis
- Outreach, Liaison Activities & Marketing

UNIT IV: Collection Management

- Collaborative Collection Development
- Vendor Relations, Negotiation & Contracts
- Trends and the Future of Collection Development
- Ethical & Legal Issues of Collection Development

Recommended Readings

1. Lee, S. H. (2020). Access, Resource Sharing and Collection Development. United States: CRC Press.
2. Gregory, V. L. (2019). Collection Development and Management for 21st Century Library Collections: An Introduction. United States: American Library Association.
3. Lee, S. Ed. Collection Development in the Electronic Environment: Shifting Priorities. (2019). United Kingdom: Taylor & Francis.
4. Bartlett, W. K. (2014). Floating Collections: A Collection Development Model for Long-term Success. United States: ABC-CLIO, LLC.
5. Johnson, P. (2018). Fundamentals of collection development and management. American Library Association.

Course Title: Preservation and Conservation

Course Objective: To familiarize with the concept and theories of preservation and conservation of library material including non-book material.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the basic concept of Preservation and Conservation.
2. Familiarize students with issue and challenges in Preservation and Conservation of archival materials.
3. Understand on preservation the Non -print Materials and Conservation.
4. Familiarize with security issues in Preservation and Conservation.

UNIT I: Understanding Preservation

- Preservation: Concept, Need, advantages and challenges
- Types of Preservation – Physical & Digital preservation
- Type Materials to be preserved
- Basic Preservation Management Techniques

UNIT II: Preservation Theory

- Preservation Principles
- Preservation Theoretical Model
- Open Archival Information System (OAIS)
- Concept of rarity and intrinsic value

UNIT III: Preservation Planning

- Protective enclosures/measures, Selection, Review of materials for conservation or replacement
- Setting priority for conservation and preservation.
- Indoor and outdoor Security challenges
- User awareness and staff training and evaluating material

UNIT IV: Preservation of Digital Material

- Digitization, Formats, Reformatting (copying and imaging) and preservation replacement.
- Digitization Project (Project Proposal: budgets, personnel, funding, project plan and output, benefits to the institute / organization)
- Technological Tools for Digital Preservation
- Case studies

Recommended Readings

1. Alire, C. (2000). Library disaster planning and recovery handbook. New York: Nean-Schuman.
2. Baird, B. J. (2018). Practical Preservation and Conservation Strategies for Libraries. United States: Rowman & Littlefield Publishers.
3. Balasubramanian, P. (2021). Preservation and Conservation of Library Resources. India: EssEss Publications.
4. Balloffet, N., Hille, J., & Reed, J. A. (2005). Preservation and conservation for libraries and archives. Chicago: American Library Association.
5. Brown, Adrian. (2017). Practical digital preservation: A how-to guide for organizations of any size. S.l.: Facet Publishing
6. Corrado, E. M., Moulaison Sandy, H. (2017). Digital Preservation for Libraries, Archives, and Museums. United States: Rowman & Littlefield Publishers.
7. Deegan, M., & Tanner, S. (2013). Digital preservation. London: Facet Publishing
8. Kahn, M. (2004). Protecting Your Library's Digital Sources: The Essential Guide to Planning and Preservation. American Library Association.
9. Mahapatra, P. K. & Chakrabarti, B. (2002). Preservation in Libraries perspectives principles and practice. Delhi: EssEss.
10. Millar, L. (2017). Archives: Principles and practices. London: Facet Publishing
11. Myntti, J and Zoom, J Digital Preservation in Libraries: Preparing for a Sustainable Future. (2018). United States: American Library Association.
12. Varlamoff, M., Kremp, V. (1998). IFLA Principles for the Care and Handling of Library Material. Netherlands: International Federation of Library Associations and Institutions, Core Programme on Preservation and Conservation.
13. Williams, C. (2006). Managing archives: Foundations, principles and practice. Oxford: Chandos Publishing

Course Title: Life and Works of S R Ranganathan

Course Objective: To make aware about the life of S R Ranganathan, Father of Library Science in India and promote an understanding of his philosophy through his works

Learning Outcomes

On studying this course, students will be able to:

1. Know about S R Ranganathan (SRR), his approach to life and philosophy of Librarianship
2. Acquaint with the SRR's basic works related to library administration and management
3. Familiar about the SRR's works related to reference service and documentation
4. Know SRR's work regarding knowledge organisation and processing (classification and cataloguing)

Unit-1: Life and Philosophy of SRR

- Early childhood, education and values, Making of Ranganathan (Indian scriptures and individuals),
- SRR's approach to subjects-multi-disciplinary, transdisciplinary
- Ranganathan's seminal works Five Laws of Library Science and other works in various themes of Library and Information Science
- Biographies and autobiography of Ranganathan

Unit-2: SRR's Works-Administration and Routine Work

- Key ideas from Library Administration
- Library Manual, Organization of Libraries
- Library Book Selection
- Other related works

Unit-3: SRR's Works- Knowledge Organisation and Processing

- Key ideas from Elements of Library Classification, Organisation of Libraries
- Philosophy of Library Classification, Prolegomena to Library Classification, Depth Classification, Hidden Roots of Classification, Classification and Communication,
- Classified Catalogue Code, Cataloguing Practice
- Heading and Canons, Subject Headings and Facet Analysis, and other related works.

Unit-4: SRR's Works- Reference Service, Documentation

- Key ideas from Reference Service
- Documentation: Genesis and Development, Documentation and its facets,
- Social Science Research and Libraries, Social Bibliography,
- Physical Bibliography for Librarians, and other related works

Recommended Readings

1. ConnawaySilipigni, L. (2018). Reordering Ranganathan: Shifting User Behaviors, Shifting Priorities. Ireland: OCLC.
2. Dudley, E., Ed. S. R. (1974). Ranganathan, 1892-1972: Papers Given at a Memorial Meeting on Thursday 25th January 1973. United Kingdom: Library Association.
3. Garfield, E. Tribute to S.R. Ranganathan, the Father of Indian Library Science: Part One, Life and Works. (n.d.). (n.p.): (n.p.).
4. Kaula, P. N. (1965). Ranganathan Festschrift: Papers Contributed on the 71st Birthday of Dr. Ranganathan, S..R. (12 August 1962) : Library Science Today. India: Asia Publishing House.
5. Kaula, P. N. (1967). Ranganathan Festschrift: Papers Contributed on the 71st Birthday of Dr. Ranganathan, S..R. (12 August 1962) : An Essay in Personal Bibliography. (n.p.): (n.p.)
6. Kaula, P. N. , Ed. (1992). Ranganathan, S. R: A Librarian Looks Back: An Autobiography of Dr. S.R. Ranganathan. India: ABC Pub. House
7. Kendadamath, G. C. (2003). S.R. Ranganathan: The Doyen of Indian Librarianship. India: Ganga Kaveri Publishing House.
8. Kumar, G. (1991). Ranganathan, Dewey and C.V. Raman: A Study in the Arrogance of Intellectual Power. India: Har-Anand Publications.
9. Kumar, G. (1992). S.R. Ranganathan, an Intellectual Biography. India: Har-Anand Publications.
10. Ranganathan, S..R. (1993). A Tribute : on the Occasion of His Centenary Celebrations. (1993). India: National Library.
11. Satija, M. P. Ed, Petits Petales: A Tribute to S.R. Ranganathan. (1993). India: ABC Publishing House.
12. Satija, M. P., Sharma, R. N. (1987). S.R. Ranganathan: The Crusader. United Kingdom: (n.p.).
13. Satyanarayana, N. R. Ranganathanism and Knowledge Society: Relevance of Dr. S. R. Ranganathan in the Present Day Knowledge Society and Other Essays. (2011). India: EssEss Publications.
14. Sharma, R. N. (1986). Indian Academic Libraries and Dr. S.R. Ranganathan: A Critical Study. India: Sterling Publishers.
15. Sharma, R. N. (1992). S.R. Ranganathan and the West. India: Sterling Publishers.
16. Singh, S. (1995). S R Ranganathan Birth Centenary Literature. India: EssEss Publications.
17. Yogeshwar, R. (2001). S.R. Ranganathan, Pragmatic Philosopher of Information Science: A Personal Biography. India: Bharatiya Vidya Bhavan.

Course: Library Internship

About the Internship

An internship is an individualized training program for the students that combines learning new library and information skills outside the classroom and the demonstration of those skills according to a planned schedule of activities. It may take place in a library/ library; or organized by the Department in online or offline mode. An intern works with an advisor/supervisor selected for the purpose to develop a practical training program on particular aspect(s) of librarianship. The duration of the internship would be four weeks.

Objectives of the Course

- To provide the students some knowledge and skills of the working of the library and information centers or any information unit;
- To upgrade their skills in a specific area of information service, resources and user requirements;
- To train them in order to boost their understanding of library services with the ICT applications
- To train them to adopt to the existing working conditions in the library and future prospects having sharing of experiences with senior LIS professionals

Semester – III

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 03 01 C 3104	Digital Libraries, Content Management and Learning Management Systems (Theory)	Core	3	1	0	04
2	SIAS LIS 03 02 C 00105	Digital Libraries, Content Management and Learning Management Systems (Practice)	Core	0	0	10	05
3	SIAS LIS 03 03 C 1144	Informetric and Scientometrics	Core	1	1	4	04
4	SIAS LIS 03 04 C 2124	Advances in ICT and Libraries	Core	2	1	2	04
5	SIAS LIS 03 01 DE 3205	Ranganathan and Modern Library Management	DE	3	2	0	05
6	SIAS LIS 03 02 DE 3205	Ranganathan and Modern Techniques of Knowledge Organization	DE	3	2	0	05
7	SIAS LIS 03 01 GEC 2124	Information Sources, Systems and Services in Biological and Applied Sciences	GEC	2	1	2	04
8	SIAS LIS 03 02 GEC 2124	Social Science Information Sources, Systems and Services	GEC	2	1	2	04
9	SIAS LIS 03 03 GEC 2124	Science and Technology Information Sources, Systems and Services	GEC	2	1	2	04
Credits		C=17, DE=05, GEC=04	Total Credits = 26				

NOTE: Student will take GEC of 4 Credit offered by other Department

Course Title: Digital Libraries, Content Management and e-Learning Platforms (Theory)

Course Objective: To popularize the concept of digital libraries, content management and e-learning and make aware of the technologies related to these in order to have effective integration of technologies and better information and knowledge management.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the concept of digital library, digital resources, design and organization of digital library
2. Understand the technologies involve in the building of digital libraries
3. Familiarize with the concept of e-Content, content creation and its hosting platforms including Learning Management Systems and MOOCs
4. Acquaint the file format, metadata standards, interoperability, and legal issues

UNIT I: DIGITAL LIBRARIES

- Digital libraries: Definition, Objectives, Scope of Digital libraries
- Digital Resources: Nature, Characteristics and types
- Design and Organization of Digital Libraries - Architecture, Interoperability, Compatibility
- Digital library initiatives: National and International

UNIT II: CONTENT MANAGEMENT SYSTEM

- Content Management System (CMS): Concept, Definition and Scope
- CMS Tools
- Features and functionalities of its stakeholders
- Theoretical Framework of CMS
- Evaluation and selection criteria for CMS

UNIT III: E-LEARNING PLATFORMs (LMS & MOOCs)

- Learning Management System: Concept, need, features and functionalities
- LMS Tools
- Stakeholders and their role & responsibilities Modules / plugin of LMS
- MOOCs: Concept, features and functionalities
- Popular MOOCs platforms

UNIT IV: STANDARD, PROTOCOL AND LEGAL ISSUES

- File Formats and Character Encoding Standards: ASCII, ISCII, Unicode
- Interoperability Standards: OAI-PMH , OAI-ORE

- Metadata: Concept, Types, Metadata Standards: Dublin core, METS, MODS
- Legal Issues – Intellectual Property Rights (IPR), Copyright, Licensing

Recommended Readings

1. Alemu, G., Stevens, B. (2015). *An Emergent Theory of Digital Library Metadata: Enrich Then Filter*. Netherlands: Elsevier Science.
2. Andrews, J. (2017). *Digital Libraries: Policy, Planning and Practice*. United Kingdom: Taylor & Francis.
3. Banerjee, K., Reese, T. (2018). *Building Digital Libraries: Second Edition*. United States: American Library Association.
4. Blaney, J., Milligan, S., Steer, M., & Winters, J. (2021). *Doing digital history: A beginner's guide to working with text as data*. Manchester University Press.
5. Boczkowski, P. J. and Mitchelstein, E. (2021). *The digital environment: How we live, learn, work and play now*, MIT Press
6. Chowdhury, G.G. & Foo, Schubert. (2012). *Digital Libraries and Information Access: Research Perspectives*. London: facet publishing
7. Evans, W. & David B. (2013). *A Handbook of Digital Library Economics: Operations*
8. Frazier, A. (Eds.) (2017). *Managing Digital Cultural Objects: Analysis, Discovery and Retrieval*.
9. Fritz, A. I. (2021). *Sustainable Enterprise Strategies for Optimizing Digital Stewardship: A Guide for Libraries, Archives, and Museums*. Rowman & Littlefield.
10. Hughes, L. M. (2004). *Digitizing Collections: strategic issues for the information manager*. New York: Neal Schuman.
11. Lawson, N. (2018). *Digital Library Preservation Strategies*. United Kingdom: EDTECH.
12. Miller, S. J. (2014). *Metadata for digital collections: A how-to-do-it manual*. New York: Neal-Schuman
13. Oleck, J. (2012). *Creating the digital library*. New York: Primary Research Group, Inc.
14. Papy, Fabrice. (2016). *Digital Libraries*. London: ISTE Press
15. Pedley, P. (2009). *Digital Copyright*. 2nded. London: Facet Publishing.
16. Pomerantz, J. (2015). *Metadata*. Massachusetts: MIT Press
17. Purcell, A. D. (2016). *Digital library programs for libraries and archives: Developing, managing, and sustaining unique digital collections*. Massachusetts: MIT Press
18. Tabakova, V. (2020). *E-learning in medical physics and engineering: building educational modules with Moodle*. CRC Press.
19. Tom Dieck, M. C. (2021). *Augmented Reality and Virtual Reality: New Trends in Immersive Technology*. Springer Nature.

Course Title: Digital Libraries, Content Management and Learning Management Systems (Practice)

Course Objective: To give practical exposure to the software/ platforms for digital libraries, content management and e-learning in order to prepare the learners to work with such technologies.

Learning Outcomes

On studying this course, students shall be able to:

1. Familiarize with process of design, development and implementation of digital libraries as pilot studies.
2. Expose with working of digital library software and create a digital library and an institutional repository.
3. Install DL, LMS and CMS with familiarity of the admin interface and work on the platforms and

UNIT I: BASIC SYSTEM REQUIREMENT OF SOFTWARE

- Commonalities and Uniqueness of DL, CMS and LMS software
- Digital library software
- Content Management Software
- Learning Management Software

UNIT II: DIGITAL LIBRARY SOFTWARE

- Installation and use of Dspace
- Installation and use of GSDDL
- Digitization Process
- Creating Digital Library/ Institutional Repository and Case Studies

UNIT III: CONTENT MANAGEMENT SOFTWARE

- Installing of open-source CMS
- Customisation of CMS
- Content population using CMS interface
- Case Studies

UNIT IV: LEARNING MANAGEMENT SOFTWARE

- Installation of open source LMS and Customisation of LMS
- Course creation and Uploading
- Modules: Assessment, Assignment, announcement, Discussion Forum, chat and Enrol User
- Case Studies

Recommended Readings

1. Aberdour, M. (2013). Moodle for mobile learning. Packt Publishing Ltd.
2. Bhandari, M. (2020). Comparison of Wordpress, Joomla and Drupal.
3. Bhardwaj, Raj Kumar (Eds.). (2018). Digitizing the Modern Library and the Transition From Print to Electronic. Hershey, PA: IGI Global
4. Bishop, A. P., Van, H. N. A., &Buttenfield, B. P. (2010). Digital Library Use: Social Practice in Design and Evaluation. Cambridge: MIT Press.
5. Jones, Richard et al. (2006). The institutional repository. Oxford: Chandos Publishing.
6. Todaro, J. B. (2014). Library management for the digital age: A new paradigm. Lanham: Rowman & Littlefield.
7. Witten, I. H., Bainbridge, D., & Nichols, D. M. (2010). How to build a digital library. Burlington, MA: Morgan Kaufmann Publishers.
8. Zhang, Allison & Gourley, Don. (2009). Creating Digital Collections: A Practical Guide. Oxford: Chandos Publishing.

Course Title: Informetrics and Scientometrics

Course Objective: To expose with the growing importance of informetric and scientometric studies in order to understand the process of bringing out such products using various resources and tools.

Learning Outcomes

On studying this course, students shall be able to:

1. Become familiar with the fundamentals of Bibliometrics, Scientometrics, Informetrics and Webometrics
2. Know about the basic bibliometric laws and their applications in the present time
3. Know about various data sources including citation indexes, like Web of Science, SCOPUS, Google Scholar and search and retrieve useful information for conducting studies
4. Understand the indicators of the publication productivity- country-wise, institution wise, subject/theme wise, journal wise and author wise.
5. Use of tools and software for scientometric analysis

UNIT I: Introduction to Bibliometrics, Scientometrics, and Informetrics and related Laws

- Concept and Definition of Librametrics, Bibliometrics, Scientometrics, Informetrics, Webometrics and Altmetrics.
- Theoretical foundation of Bibliometrics and Scientometrics; Limitations of Bibliometrics, Scientometrics, Informetrics and Webometrics
- Classical laws of Bibliometrics - Bradford's Law, Zipf's Law, Lotka's Law, Brookes, Leimkhler, Bookstein Formulation, Bradford-Zipf Distribution; Price Theory, Ortega Hypothesis.
- Garfield's Law of Concentration, Mathew effect, Other models of Scientific Communications

UNIT II: Evaluative Bibliometrics

- Theoretical foundations of Citation Analysis – Merton's Normative Frameworks, Social Constructivist Theory, Cronin's Micro-sociological view and other views.
- Historical Perspectives of Evaluative Bibliometrics
- Publication productivity dynamics - Journal level, Institutional level, Regional level, National level, Global level, Discipline level publication
- Research Collaboration Dynamics-Individual, Institution, Regional, National and Global level.

UNIT III: Bibliometrics/ Scientometrics Indicators and Emerging Trends

- Bibliometric data sources: Scopus, Web of Science, Google Scholar; Crossref; Microsoft academic
- Bibliometric Data Collection: Citation counting methods.

- Journal citation measures - Journal impact factor, Journal Citation Indicator, Immediacy index, CiteScore, SNIP, Weighted Impact -Eigenfactor, SJR; Half-life; Normalized Impact Indicators
- Individual Impact measures-H-Index, g-index, etc; Co-Citation Analysis, Bibliographic coupling.

UNIT IV: Advanced learning in Bibliometrics/ Scientometrics

- Scientometrics Analysis Tools- R Software -Bibliometrix, Publish or Perish, Bibexcel, etc.;
- Network Visualization Software – Vosviewer; Pajek, Sci²Tools, CiteSpace, etc
- Altmetrics and Webometric data source and Analysis
- Responsible Research Metrics – DORA declaration, Leiden Manifesto, etc.

Recommended Readings

1. Bornmann, L., & Daniel, H. D. (2008). What do citation counts measure? a review of studies on citing behavior. *Journal of Documentation*, 64(1), 45 – 80.
2. Cronin, B. & Sugimoto, C. (Eds). (2014) *Beyond Bibliometrics : Harnessing Multidimensional Indicators of Scholarly Impact*. Massachussets, MIT Press
3. Cronin, B. (1984). *The citation process: the role and significance of citations in scientific communication*: Taylor Graham.
4. Cronin, B., & Atkins, H.B. (Eds.). (2000). *The Web of Knowledge: A Festschrift in Honor of Eugene Garfield*: Information Today Inc.
5. De Bellis, N. (2009). *Bibliometrics and Citation Analysis: From the Science Citation Index to Cybermetrics*. Lanham: Scarecrow Press.
6. Egghe, L. (2005). *Power Laws in the Information Production Process: Lotkaian Informetrics*: Emerald Group Publishing Limited.
7. Glänzel, W., Moed, H.F., Schmoch, U., Thelwall, M. (Eds.) (2019) *Springer Handbook of Science and Technology Indicators*. Cham, Switzerland: Springer Nature
8. Haustein, S. (2012). *Multidimensional journal evaluation: Analyzing scientific periodicals beyond the Impact Factor*. Berlin : De Gruyter.
9. Moed, H. F. (2005). *Citation analysis in research evaluation*. Dordrecht,:Springer.
10. Sugimoto, C. R. (Ed.)(2016), *Theories of Informetrics and Scholarly Communication: A festschrift in honor of Blaise Cronin*
11. Thelwall, M. (2016). *Web indicators for research evaluation: A practical guide*. Synthesis Lectures on Information Concepts, Retrieval, and Services. San Rafael, CA: Morgan & Claypool Publishers.
12. Vinkler, P. (2010). *The Evaluation of Research by Scientometric Indicators*. Oxford: Chandos.
13. Waltman, L. (2016). A review of the literature on citation impact indicators. *Journal of Informetrics*, 10(2), 365–391. <https://doi.org/10.1016/j.joi.2016.02.007>.
14. Wilsdon, J. (2016), *Towards Metric Tide: Independent Review of the Role of Metrics in Research Assessment and Management*, Sage publication/ HEFCE, UK

Course Title: Advances in ICT and Libraries

Course Objectives: To make familiar with the concept of artificial intelligence, big data, machine learning, global information system particularly their application in libraries and information centers for better access, utilization and user centered services.

Learning Outcomes

On studying this course, students shall be able to:

1. Know the possibilities of application of artificial intelligence and machine learning in libraries in order to better utilizing technologies to offer customized and user support resources and services
2. Familiarize with the concept of library carpentry and about the important information technologies used in manipulating, storing, and analyzing data in libraries and information centers.
3. Understand the use of research data management in preserving and utilizing open research data for the researches and academic purposes and using the tools and techniques for storage and preservation of research data for the future generations
4. Understand the geographic information systems (GIS) concepts, prominent GIS software, the role of libraries in providing GIS services and support and resources

Unit-1: Artificial Intelligence

- The Conceptual Framework, A Basic Understanding of how AI and ML work, their underlying Logic and their Limitations;
- Understanding the potential societal impacts of AI, especially in the area of Education and Libraries
- Scope of AI in Library Functions, Resources and Services
- Examples of AI Application in Libraries

Unit-2: Library Carpentry

- Impact of big data on the business, society and libraries, need for managing data for the benefit of the stakeholders
- The Concept of Data Carpentry and Library Carpentry; Skill requirements (Core- regex, shell scripting, Openrefine; standards- SQL, NoSQL, Python; and advanced (MARCEdit, data reconciliation, named entity extraction, sentiment analysis, etc.
- Tools & services related to data discovery (Kaggle, Google Data search, Zenodo, re3data); data repositories (Dataverse, Dryad, Zenodo); and governmental data portals including data.gov.in. and Data
- Data wrangling processes through REST/API based data fetching and GREL based data extraction in the open-source data wrangling software called Openrefine.

Unit-3: Research Data Management

- Concept of Research Data, Quality of Research Data, Research Cycle and generation of research Data

- Presentation of research data, Research Data Storage and Preservation,
- Metadata practices and key elements, Citing Research data,
- Research Data Management Technologies and Tools: Cloud based and Machine hosted

Unit-4: Application of GIS in Libraries

- Introduction to Geographical Information System; Geographical Data in Libraries, GIS Data Standards
- Accessibility (Critical GIS, Ontologies, and Semantics),
- GIS and Managing collection and services, GIS and LIS education
- Understanding how to store, manipulate and analyze GIS data

Recommended Readings

1. Bishop, L., Van den Eynden, V., Corti, L., Woollard, M. (2019). *Managing and Sharing Research Data: A Guide to Good Practice*. United Kingdom: SAGE Publications.
2. Cox, A., & Verbaan, E. (2018). *Exploring research data management*. Facet publishing.
3. Griffey, J. (2019). AI and Machine Learning: The challenges of artificial intelligence in libraries. *American Libraries*, 50(3), 4.
4. Khan, H. R., Du, Y. (2020). *Data Science for Librarians*. United States: ABC-CLIO.
5. Kruse, F., & Thestrup, J. B. (Eds.). (2017). *Research data management-A European perspective*. Walter de Gruyter GmbH & Co KG.
6. Kumar, K. (2018). Identification of library location through Arc GIS software: Geographical information system. *IJ Agri. L. Inf. Serv*, 34(3), 227.
7. Singh, A., Rai, P., & Singh, S. (2019). Scaling Bots in Libraries: Trending Aptness of Artificial Intelligence in Information System. *Available at SSRN 3861818*.
8. Slayton, E., & Benner, J. (2020). *The Role of Libraries in Geography and GIS Education: Report on a series of conversations about libraries, geography, GIS, and education in 2020*.
9. Soares, L. (2020). Artificial Intelligence in Canadian Law Libraries. *Can. L. Libr. Rev.*, 45, 16.
10. Stoddart, R., & Godfrey, B. (2020). Gathering Evidence of Learning in Library Curriculum Center Spaces with Web GIS. *Evidence Based Library and Information Practice*, 15(3), 21-35.
11. Strasser, C. A., Krier, L. (2014). *Data Management for Libraries: A LITA Guide*. United States: American Library Association.
12. Tian, Z. (2021, June). Application of Artificial Intelligence System in Libraries through Data Mining and Content Filtering Methods. In *Journal of Physics: Conference Series* (Vol. 1952, No. 4, p. 042091). IOP Publishing.
13. Wheatley, A., & Hervieux, S. (2019). Artificial intelligence in academic libraries: An environmental scan. *Information Services & Use*, 39(4), 347-356.\

Course Title: Ranganathan and Modern Library Management

Course Objectives: To make aware of the newer concepts in management in relationship with the Ranganathan's approaches in regard to quality management, people management, marketing and such other customer centered practices in a services set up.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand modern approaches to management vis-à-vis Ranganathan's approach to managing libraries.
2. Consider quality as journey towards achieving objectives of libraries and familiar with the service quality management approaches and relate them with Ranganathan's approach to quality management
3. Know the need for effective people management in a service setup, and take up Ranganathan's approach to people management into the analysis.
4. Adopt marketing approach to libraries and relate Ranganathan's ideas to modern marketing approach.

Unit-1: Ranganathan as Leader in managerial excellence

- Areas of modern management for service organization
- Modern management thinkers and S R Ranganathan
- Worldview on Ranganathan's approach to library management.
- Modern Management approaches via-a-vis Ranganathan's approach

Unit-2: Quality Library Services

- Service quality approach in libraries
- User Centredness
- Process improvement, Standardization,
- Other Ranganathan's key ideas from the LIS literature

Unit-3: People Management

- Place of staff in the library's Trinity, Staffing,
- Team work, Motivation,
- Self-management
- Other Ranganathan's key ideas from the LIS literature. .

Unit-4: Marketing of Services

- Attributes of grocery stores: then and now
- Shop analogy in Ranganathan's Literature
- Salesmanship, Public Relations and Promotion
- An account of literature on modern marketing vis-à-vis Ranganathan's approach to marketing

Recommended Readings

1. Ranganathan, S. R. (1988). Library Manual: For Library Authorities, Librarians and Library Workers. India: Sarada Ranganathan Endowment for Library Science.
2. Ranganathan, S. R. (2006). Documentation: Genesis and Development. India: EssEss Publications.
3. Ranganathan, S. R. (2006). Library Administration. India: EssEss Publications.
4. Ranganathan, S. R. (2006). The Five Laws of Library Science. India: EssEss Publications.
5. Ranganathan, S. R. (2007). Suggestions for the Organization of Libraries in India. United Kingdom: Read Books.
6. Ranganathan, S. R., Gopinath, M. A. (2006). Library Book Selection. India: EssEss Publications.
7. Ranganathan, S. R., Sivaraman, K. M. (1951). Library Manual, by S.R. Ranganathan and K.M. Sivaraman. India: Indian library Association.

Course Title: Ranganathan and Modern Knowledge Organization and Management

Course Objective: To make aware of the newer concepts in knowledge organization and management in relationship with the Ranganathan's approaches.

Learning Outcomes

On studying this course, students shall be able to:

1. Be familiar with Ranganathan's approach to faceted classification, normative principles and responses from experts on his approach to information organization and management
2. Analyze Ranganathan's faceted classification representing in Simple Knowledge Organization System (SKOS)
3. Use of Ranganathan's approach in developing ontologies and taxonomy, and create ontological structure using Colon Classification
4. Relate Ranganathan's layers of classification theory with the semantic web and datamanagement

Unit-1: Foundation

- Facet analysis
- Normative principles
- Layers of classification
- World view on Ranganathan's role in Knowledge Organisation and management

Unit-2: Faceted Classification in ISKO

- Core concepts
- Processes
- Methods, Approaches and Philosophies
- Context and Applications

Unit-3: Ontologies and Taxonomies and Colon ontology

- Hierarchies
- Domain Conceptualization
- Examples from different domain

Unit-4: Modern applications

- Semantic web
- Linked data
- Big data

Recommended Readings

1. (1997). S. R. Ranganathan's Postulates and Normative Principles: Applications in Specialized Databases Design, Indexing and Retrieval. India: Sarada Ranganathan Endowment for Library Science.
2. Blokdyk, G. (2018). Knowledge Organization System a Complete Guide. (n.p.): Emereo Pty Limited.
3. Classification, Coding, and Machinery for Search. By S.R. Ranganathan. (1950). France: (n.p.).
4. Conceptual Modeling: Foundations and Applications: Essays in Honor of John Mylopoulos. (2009). Germany: Springer Berlin Heidelberg.
5. ConnawaySilipigni, L. (2018). Reordering Ranganathan: Shifting User Behaviors, Shifting Priorities. Ireland: OCLC.
6. Gnoli, C. (2020). Introduction to Knowledge Organization. United Kingdom: Facet Publishing.
7. Gopinath, M. A. (2004). Subject Classification Practice S.R. Ranganathan S. India: EssEss Publications.
8. Hodge, G. M. (2000). Systems of Knowledge Organization for Digital Libraries: Beyond Traditional Authority Files. United States: Digital Library Federation, Council on Library and Information Resources.
9. Mangai, M. A. A. M., Gopinath, M. A. (2004). Subject Classification Practice: S.R. Ranganathan's Postulational Approach : Worked Out Examples Using CC, DDC and UDC Schemes. India: EssEss Publications for Sarada Ranganathan Endowment for Library Science.
10. ParthasarthyRanganathan, S. R. (1991). Elements of Library Classification: Based on Lectures Delivered at the University of Bombay in December 1944 and in the Schools of Librarianship in Great Britain in December 1956. India: Sarada Ranganathan Endowment for Library Science.
11. Powell, J. (2015). A Librarian's Guide to Graphs, Data and the Semantic Web. Netherlands: Elsevier Science.
12. Ranganathan, S. R. (1948). Classification and International Documentation, by S.R. Ranganathan Netherlands: Fédération internationale de documentation.
13. Ranganathan, S. R. (1959). Elements of Library Classification: Based on Lectures Delivered at the University of Bombay in December 1944 and in the Schools of Librarianship in Great Britain in December 1956. India: Association of Assistant Librarians.
14. Ranganathan, S. R. (1967). Prolegomena to Library Classification. 3rd Ed., by S.R. Ranganathan Assisted by M.A. Gopinath.. India: Asia Publishing House.
15. Ranganathan, S. R. (2006). Classification and Communication. India: EssEss Publications.
16. Ranganathan, S. R. (2006). Philosophy of Library Classification. India: EssEss Publications.
17. Ranganathan, S. R. (2007). Colon Classification. India: EssEss Publications.
18. Ranganathanism and Knowledge Society: Relevance of Dr. S. R. Ranganathan in the Present Day Knowledge Society and Other Essays. (2011). India: EssEss Publications.
19. Williamson, N., Beghtol, C. (2013). Knowledge Organization and Classification in International Information Retrieval. United Kingdom: Taylor & Francis.

Course Title: Information Sources, Resources, Systems and Services in Biological and Applied Sciences

Course Objective: To give details of the information sources, resources, systems and services in the field of biological and applied sciences so that their use becomes easier.

Learning Outcomes

On studying this course, students shall be able to:

1. Know the various types of information sources and resources available in Biological and Applied Sciences
2. Understand the role and types of information systems in the field of Biological and Applied Sciences
3. Use Information Services available for users from different service providers
4. Understand different branches of knowledge in the field of Biological and Applied Sciences and the information resources and services available therein

Unit-1: Information Resources

- Literatures and resources related to Biological and Applied Sciences
- Type of Information Resources of Biological and Applied Sciences
- Database of Biological and Applied Sciences; Free and Open Resources of Information Resources of Biology, Biotechnology and Bioinformatics
- Network Libraries Based on Biological Science and Applied Sciences ;Resource Sharing and Consortium of Life Sciences, Biotechnology and Medical Sciences

Unit-2: Information Systems

- Types of Information System; Infrastructures
- Searching and Finding Tools; Literatures Search Tools and Techniques
- Evaluation Process of Databases & Research Materials for Biological
- Indexing Databases Scopus, WOS; Impact Factor & Citation Analysis

Unit-3: Information Services

- Reference and Referral Services Under Biological Sciences & Applied Sciences
- Impact Factor / Citation Analysis / Google Scholar / Orchid / Altmetrics
- Index Services and basic knowledge about h-index, g-index, i10-index
- Please review the above sub-titles, which I added 5-7 topics in each unit

Unit-4: Information Sources in the Branches of Biological and Applied Sciences

- Information Sources on Biological and Applied Sciences
- Information Sources on Biology / Biotechnology / Bioinformatics
- Information Sources for Life Sciences
- Exploring Sources for Veterinary Sciences, Plant & Agriculture Sciences, and Health & Medical Sciences

Recommended Readings

1. Cummings, S. M. H. (2021). *Management Information Systems for the Information Age*. Irwin/McGraw-Hill.
2. Parker, C. C. (2014). *Information Sources in Science and Technology: A Practical Guide to Traditional and Online Use*. Butterworth-Heinemann.
3. Marks, R. J., II, Sanford, J. C., Behe, M. J., Dembski, W. A., & Gordon, B. L. (2013). *Biological Information: New Perspectives - Proceedings of the Symposium (1st ed.)*. World Scientific Publishing Company.
4. Niiranen, S., & Ribeiro, A. (2013). *Information Processing and Biological Systems (Intelligent Systems Reference Library, 11) (2011th ed.)*. Springer.
5. UNESCO. (1978). *Handbook of Information Systems*. PARIS: UNESCO
6. Atlan, H. (1977). *Sources of Information in Biological Systems*. *IFAC Proceedings Volumes*, 10(12), 177–184. [https://doi.org/10.1016/s1474-6670\(17\)66575-3](https://doi.org/10.1016/s1474-6670(17)66575-3)

Course Title: Social Science Information Sources, Resources, Systems and Services

Course Objective: To give details of the information sources, resources, systems and services in the field of social sciences so that their use becomes easier.

Learning Outcomes:

On studying this course, students shall be able to:

1. Understand the scope. Landmarks and research trends of the subjects covered in Social Sciences
2. Have knowledge of the various institutions involved in Social Sciences research in India
3. Acquaint with the students about the Information systems, associations and Network in the field of Social Sciences at the international level
4. Know about the aggregators, databases and repositories in the field of Social Science

Unit – I: Structure and Development of Social Sciences: Social Sciences

- Development of Social Sciences disciplines and their relationship with other disciplines
- Definition, scope, landmarks and research trends in Political Science, Public Administration, Economics
- Definition, scope, landmarks and research trends in Psychology, Sociology,
- Definition, scope, landmarks and research trends in History and Law

Unit – II: Social Science Institutions engaged in Information generation and dissemination: Role of Social Science Institutions

- Centre for Policy Research.
- Indian Council of Social Science Research.
- Indian Council of World Affairs.
- Indian Institute of Public Administration.
- National Council for Applied Economic Research.
- National Institute of Public Finance and Policy.
- Tata Institute of Social Sciences.
- Indian Council of Historical Research.
- Institute of Economic Growth.
- United Nation Educational Scientific and Cultural Organisation (UNESCO).

Unit – III: Social Science Information System, Associations and Networks

- Information System: Concept and evaluation
- Information Associations in Social Sciences
- International Political Science Association
- International Sociological Association
- SocioSite; Social Science Research Network (SSRN)

- Social Science Council and Committee
- International Social Science Council (ISSC)
- International Committee for Social Science Information and (ICSSD)

Unit – IV: Social Science Aggregators, Databases and Repositories

- ProQuest, J-STOR, EBSCOhost, J-Gate, Population Information Online (POPLINE), Project Muse,
- UNESDOC Digital Library, Shodhganga, Networked Digit Library of Theses and Dissertations (NDLTD),
- IndiaStat, UN Data, India Government Data
- Open DOAR (Directory of Open Access Repositories), DOAJ (Directory of Open Access Journals)

Recommended Readings

1. Adams, Bert N. (2002). *Sociological Theory*. New Delhi: Visitor Publications.
2. Case, D. (2006). *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. (2nded.) London: Emerald Publishing
3. Coser, Lewis A. (2008). *Masters of Soiological Thoughts: Ideas in Historical and Social Context* (2nd ed.).
4. Gordon, S. R., & Gordon, J. R. (2010). *Information systems: A management approach*. Hoboken, NJ: Wiley.
5. Hevner, A. & Chatterjee, S. (2010). *Design Research in Information Systems: Theory and Practice*. New York: Springer.
6. Irani, Z. & Lover, P. (2008). *Evaluating Information Systems: Public and Private Sector*. London: Butterworth-Heneman.
7. Kelkar, S A. (2009). *Information Systems: A Concise Study*. New Delhi: PHI.
8. Leckie, G. J. & et. al. (2010). *Critical Theory for Library and Information Science: Exploring the Social from Across the Disciplines*. Colarado: Libraries Unlimited.
9. Rajaraman, V. (2011). *Analysis and design of Information Systems*. New Delhi: PHI.

Semester – IV

S. No.	Course code	Course title	Course Type	L	T	P	Total Credits
1	SIAS LIS 04 01 C 3104	Research Methodology (Online)	Core	3	1	0	04
2	SIAS LIS 04 02 C 0020	Dissertation/Industrial Training	Core	-	-	-	20
3	SIAS LIS 04 01 SEEC	Research Data Literacy (Online)	SEEC	-	-		-
Credits		C=24	Total Credits = 24				

Course Title: Research Methodology

Course Objective: To make aware about the research and research methods, and other aspects of conducting successful research.

Learning Outcomes

On studying this course, students shall be able to:

1. Know the concept of the Research, understand use of appropriate method as per the requirement of the research work
2. Develop research proposal, identify and use the appropriate literature for the review
3. Understand the various methods of data collection and able to decide the appropriate method of data collection
4. Organize, analyze and interpret research data and develop the research report.

UNIT I: Basics of Research

- Research: definition, concept, objectives and types
- Hypothesis: definition and types;
- Review of Literature; Literature Search: Print and e-Resources
- Writing Research Proposals

UNIT II: Research Methods

- Historical Method and Descriptive Method
- Survey Method and Case Study Method
- Experimental Method
- Ethnography

UNIT III: Data Collection Methods and Techniques

- Questionnaire Method
- Observation Method
- Interview Method
- Population and Sample: concept, meaning and sampling techniques

UNIT IV: Data Analysis and Research Reporting

- Descriptive statistics : Measurement of Central Tendency and Standard Deviation
- Inferential statistic: Parametric and Non-Parametric
- Statistical tool: SPSS (Statistical Package of Social Sciences)
- Research Report – Concept, Structure & style, guidelines and Evaluation

Recommended Readings

1. Alasuutari, P., Bickman, L. & Brannen, J. (Eds.) (2008). *The SAGE Handbook of Social Research Methods*. London: Sage Publication.
2. Atkinson, P & Delamont, S. (Ed.) (2011) *Sage Qualitative Research Methods*. (Vols. 1-4). New Delhi: Sage Publication.
3. Bedi, S., & Webb, J. (Eds.). (2020). *Visual Research Methods: An Introduction for Library and Information Studies*. Facet Publishing.
4. Berger, A. A. (2018). *Media and communication research methods: An introduction to qualitative and quantitative approaches*. Sage Publications.
5. Burton, D. & Bartlett, S. (2009). *Key Issues for Education Researchers*. California: Sage Publication
6. Connaway, L. S., & Radford, M. L. (2016). *Research methods in library and information science*. ABC-CLIO.
7. Cooper, H. M. (2006). *Synthesizing research: A guide for literature reviews*. Thousand Oaks, Calif: Sage.
8. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach*. (4th ed.). California: Sage Publication
9. Fetterman, D. M. (2010). *Ethnography: step-by-step* (3rd Ed). (Applied social research methods series; v. 17). California: Sage Publication
10. Goon, A M. (2000). *Fundamental of Statistics*. Calcutta: World Press.
11. Julie McLeod, J. & Thomson, R. (2009). *Researching Social Change: Qualitative Approaches*. London: Sage Publication.
12. Leo, E. and Rousseau, R. (2001). *Elementary Statistics for Effective Library and Information Service Management*. London: Aslib.
13. Oliver, P. (2010). *Understanding the Research Process*. New Delhi: Sage Publication.
14. Powell, R. R.&Connaway, L. S. (2010). *Basic Research methods for Librarians*. 5th ed. Westport: Libraries Unlimited.
15. Powell, R. R., &Connaway, L. S. (2010). *Basic research methods for librarians*. Santa Barbara California: Libraries Unlimited
16. Wildemuth, B. M. (Ed.). (2016). *Applications of social research methods to questions in information and library science*. ABC-CLIO.

**Course Title: INDUSTRIAL/LIBRARY/ INSTITUTIONAL
TRAINING
OR
DISSERTATION**

Industrial/ Library/ Institutional Training

This is new area which has been added in the course of studies in the Master's degree in Library and Information Science. A student has to undergo for becoming acquaintance with any library or institution or industry (service or professional or otherwise) for the full semester and learn the practices being followed there in regard to information management, dissemination and use. The students will have to take up the required course to earn the required credits from the University as per the guidance from the Department of Library and Information Science, CUH. The student will have to submit certificate of completion along with the report about what he learnt along with the skills acquired during the training. Upto 50 percent of the students can undergo summer training.

Dissertation

Theoretical and methodological preparation for this course begins in the 3rd Semester with Course on: Informetrics and Scientometrics. Also, a course on Research Methodology is offered during the present semester. These two courses would help to understand about the methodological aspects of research. Allocation of Supervisors for undertaking dissertation is done during the beginning of the 4th semester and the students are given necessary guidance. Students are required to give seminars on their chosen topics for continuous/internal assessment. The students will require to write a dissertation on the following themes: 1. Literature review of any current topic in library and information science 2. Conducting case studies and surveys of libraries 3. Designing a prototype website or portal using various software prescribed in the syllabus 4. Studies related to information retrieval themesthrough the various e-resources or databases 5. Any other studies related to library and information science.

Course Title: Research Data Literacy

Course Objectives: To make understand out the concept of research data literacy, its usefulness in research and about the research data life cycle.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand about the research data that may be extracted from the processes leading to research outputs
2. Aware of the importance of the research data, need for sharing and value for research data sharing for researchers
3. Know the research data lifecycle so that at every stage identification of research data generation is known
4. Adopt creation and management of research data into practice, maintaining the quality of research data and effective integration practices.

Unit-1: Introduction to Research Data

- Importance of Research Data world around us
- Importance of Research Data literacy
- Research Data Lifecycle
- Cases of Research Data Management

Unit-2: Research Data Lifecycle and Sharing of Research Data

- Research Data Sharing Within the Research Lifecycle
- Value of Research Data Sharing
- Concerns About Research Data Sharing
- Methods for Making Research Data Sharable

Unit-3: Research data Practices

- Best Practices for Creating Research Data Files
- Research Data Entry Options
- Research Data Integration Best Practices

Unit-4: Creating and Maintaining Research Data

- Research Data Manipulation Options
- Define Research Data Quality Control and Research Data Quality Assurance
- Perform Quality Control and Assurance on Research Data at all stages of the Research Cycle

Recommended Readings

1. Jones, B. (2020). *Data Literacy Fundamentals: Understanding the Power & Value of Data* (The Data Literacy Series). Data Literacy Press.
2. Jones, B. (2020b). *Learning to See Data: How to Interpret the Visual Language of Charts* (The Data Literacy Series). Data Literacy Press.
3. Herzog, D. (2016). *Data literacy: A user's guide*. SAGE Publications.
4. Mandinach, E. B., Gummer, E. S., & Schneider, B. (2016). *Data Literacy for Educators: Making It Count in Teacher Preparation and Practice (Technology, Education--Connections (The TEC Series))*. Teachers College Press.
5. Johnston, L. R., & Carlson, J. (2015). *Data Information Literacy: Librarians, Data and the Education of a New Generation of Researchers (Purdue Information Literacy Handbooks)*. Purdue University Press.
6. Bowen, M., & Bartley, A. (2013). *The Basics of Data Literacy: Helping Your Students (And You!) Make Sense of Data - PB343X*. National Science Teachers Association - NSTA Press.
7. Love, N. (2013). *Data Literacy for Teachers*. National Professional Resources Inc. / Dude Publishing.