



# SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar

NAAC 'A' Grade (10-01-2023 To 09-01-2028)

NEP-2020 aligned Curriculum with effect from Academic Year 2026-27

## Master of Library and Information Science (MLISc) Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSC	<b>PB02NCLIB01</b>	Information storage and Retrieval	4-0-1	<b>120</b>	04

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

CLO1: Explain the principles and practices of subject cataloguing and indexing, and apply standard tools such as LCSH and SLSH along with pre-coordinate and post-coordinate indexing systems.

CLO2: Analyze different types of indexing languages and apply vocabulary control techniques, including the construction and use of thesauri, for effective information organization and retrieval.

CLO3: Formulate efficient search strategies using modern information retrieval tools, search engines, and emerging technologies such as semantic web and ontology-based systems.

CLO4: Evaluate various information retrieval models and assess the performance of information retrieval systems using appropriate evaluation techniques.

CLO5: Demonstrate understanding of abstracting processes, types, standards, and automatic abstracting techniques for effective information condensation and dissemination.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<b>Subject Cataloguing and Indexing: Principles and Practices</b> <ul style="list-style-type: none"> <li>Principles of Subject Cataloguing.</li> <li>Library of Congress Subject Headings (LCSH),</li> <li>Sears List of Subject Headings (SLSH)</li> <li>Pre coordinate indexing</li> <li>Post Co-ordinate indexing</li> </ul>	Classroom Lecture Seminar Collaborative Learning ICT-Enabled Learning Self-Directed Learning	CLO1
II	<b>Indexing Languages and Vocabulary Control</b> <ul style="list-style-type: none"> <li>Indexing Languages: Types and Characteristics.</li> <li>Vocabulary Control: Concept, Meaning and Tools.</li> <li>IR thesauri: Structure and Construction.</li> <li>Formulation of Search Strategy, Search Engines, Federated Search Aggregators Subject Gateways New Trends: Semantic Web, OWL (Ontology Web Language)</li> </ul>	Classroom Lecture Seminars Collaborative Learning ICT-Enabled Learning Self-Directed Learning	CLO2



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III	<b>Information Retrieval:</b> <ul style="list-style-type: none"> <li>IR Models</li> <li>Evaluation of Information Retrieval Systems;</li> <li>Trends In IR Models New Trends: Data Storage and Data Management – Features and contribution of AI (ML + DL), IoT in Intelligent Data Management.</li> </ul>	Classroom Lecture Seminars Collaborative Learning ICT-Enabled Learning Self-Directed Learning	CLO3
IV	<b>Abstract &amp; Abstracting:</b> <ul style="list-style-type: none"> <li>Concept, Purpose &amp; Its Usefulness:</li> <li>Characteristics of Good Abstract</li> <li>Types Abstract</li> <li>Procedure, Standards &amp; Guidelines for Preparing Abstract</li> <li>Automatic Abstracting</li> </ul>	Classroom Lecture Seminars Collaborative Learning ICT-Enabled Learning Self-Directed Learning	CLO4 CLO5

• **Assessment Methodologies**

**(A) Internal Assessment**

**a. Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment
- (c) Seminar/Presentation

**b. Internal Summative Assessment (25 Marks)**

Mid-Term Examination

**(B) Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage (Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/ Analyse & above (A)	
<b>I</b>	CLO1	30	1	2	11	14
<b>II</b>	CLO2	32	1	2	09	12
<b>III</b>	CLO3	28	1	2	09	12
<b>IV</b>	CLO4, CLO5	30	1	2	09	12



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		<b>120</b>	<b>04</b>	<b>08</b>	<b>38</b>	<b>50</b>
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• **Assessment and Evaluation**

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Seminars, Assignments, Attendance, Mid-Term Examination	50
2	End-Semester Examination	Written Exam	50

**(C) CLOs – PLOs Matrix**

CLO	PLO											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CLO 1	3	3	2	1	–	–	–	–	1	2	1	–
CLO 2	2	3	2	1	1	–	–	–	2	2	1	–
CLO 3	2	1	3	3	2	2	–	–	2	3	1	1
CLO 4	2	–	2	2	3	1	2	2	1	3	1	–
CLO 5	2	1	2	2	2	–	–	–	3	3	2	1

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

• **Suggested Learning Materials Books:**

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1.	Introduction to information processing & retrieval for library and information professionals	Satyanarayana, N.R.;	2016	Ess Ess Publications
2.	Information Retrieval and Preservation in Library Management/	Gokhale, navjot	2023	Peridot Literary Books



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3.	Innovations in Information Retrieval: Perspectives for Theory and Practice/	Foster, Allen	2011	Facet Publishing.
4.	Information retrieval	Sukula, shiva	2014	Ess Ess Publications

#### • Online Resources (Open Source)

Sr. No.	Description of Resource(s)	Weblink
1	IGNOU	<a href="http://www.ignou.ac.in">http://www.ignou.ac.in</a>
2	Information and Library Network	<a href="http://www.inflibnet.ac.in">www.inflibnet.ac.in</a>
3	Developing Library Network	<a href="http://www.delnet.org">http://www.delnet.org</a>
4	egyankosh	<a href="http://www.egyankosh.ac.in">www.egyankosh.ac.in</a>
5	National Digital Library	<a href="http://ndl.iitkgp.ac.in">http://ndl.iitkgp.ac.in</a>

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## Masters of Library & Information Science [MLISc] Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSC	<b>PB02NCLIB02</b>	Information and Communication	4-0-1	120	4

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO1:** Explain the concept, nature, value, and communication process of information, including the distinction between data, information, and knowledge.

**CLO2:** Interpret the scope, evolution, and interdisciplinary nature of Information Science in relation to society, policies, and ethical issues.

**CLO3:** Analyse the role of information as an economic resource, including information economics, knowledge economy, and data-driven economy in the LIS context.

**CLO4:** Apply fundamental concepts of information management and knowledge management, including types of knowledge and data management techniques.

**CLO5:** Evaluate information sources, communication models, and emerging trends such as data science and ICT applications in library and information services.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<p><b>Information and Communication:</b></p> <ul style="list-style-type: none"> <li>• Concept and Nature of Information</li> <li>• Distinction between Data, Information, and Knowledge</li> <li>• Value and Utility of Information</li> <li>• Information Generation and Communication Process</li> <li>• Communication Models and Barriers</li> <li>• Trends in Information Communication and Role of Data Science in LIS</li> </ul>	Classroom Lecture  Seminar,  Inquiry based Learning	CLO1, CLO5
II	<p><b>Information Science, Society &amp; Policies:</b></p> <ul style="list-style-type: none"> <li>• Concept, Scope and Objectives of Information Science</li> <li>• Evolution from Library Science and Documentation to Information Science</li> <li>• Information Science as a Discipline and its Interdisciplinary Nature</li> <li>• Library, Information and Society: Information Society</li> <li>• Changing Role of Libraries and Information Centres &amp; Information Industry</li> <li>• Policies, Programmes, IPR and Ethical Issues</li> </ul>	Classroom Lecture Seminar Collaborative Learning Inquiry based Learning	CLO2



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### Masters of Library & Information Science [MLISc] Semester-II

III	<b>Information as an Economic Resource and Information Economics:</b> <ul style="list-style-type: none"> <li>• Economic Characteristics of Information</li> <li>• Micro and Macro Aspects of Economics of Information</li> <li>• Knowledge Economy: Concept and Features</li> <li>• Information Economy in Indian Context and Workforce Dynamics</li> <li>• Data-Driven Economy and Role of IT Industry in LIS</li> </ul>	Classroom Lecture Seminar Collaborative Learning Inquiry based Learning	CLO3
IV	<b>Information Management &amp; Knowledge Management:</b> <ul style="list-style-type: none"> <li>• Concept, Meaning and Purpose of Information and Knowledge Management</li> <li>• Need and Importance of Knowledge Management</li> <li>• Relationship between Data, Information, and Knowledge</li> <li>• Types of Knowledge in Knowledge Management</li> <li>• Tools and Techniques for Knowledge Management</li> </ul>	Classroom Lecture Seminar Inquiry based Learning	CLO4, CLO5

• **Assessment Methodologies**

(A) **Internal Assessment**

a. **Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment
- (c) Seminar/Presentation

a. **Internal Summative Assessment (25 Marks)**

- (a) Mid-Term Examination

(B) **Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage (Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/Analyse & above (A)	
I	CLO1, CLO5	30	1	3	10	14
II	CLO2	32	1	3	08	12
III	CLO3	28	1	3	08	12
IV	CLO4, CLO5	30	1	3	08	12
		<b>120</b>	<b>04</b>	<b>12</b>	<b>34</b>	<b>50</b>

• **Assessment and Evaluation**

Sr.No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Seminars, Assignments, Attendance, Mid-Term examination	50%
2	End-Semester Examination	Written Exam	50%



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**(C) CLOs – PLOs Matrix**

CLO	PLO											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CLO1	3	-	2	-	-	-	-	-	-	2	2	-
CLO2	3	-	3	-	-	-	-	-	-	2	3	-
CLO3	2	-	3	-	2	-	-	3	-	-	-	-
CLO4	-	-	2	3	2	3	-	-	2	-	-	2
CLO5	-	-	3	3	3	2	-	2	2	3	2	2

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

• **Suggested Learning Materials Books:**

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	Information Science: Information, Knowledge, Communication and Libraries	K.K. Singh & Neelam Singh	Latest Ed.	IBP Publications
2	Information and Society	Matthew R. Arnold	2023	Routledge
3	Introduction to Information Science	Donald O. Case & Lisa M. Given	2nd Ed., 2016	Emerald Publishing
4	Knowledge Management in Theory and Practice	Kimiz Dalkir	3rd Ed., 2017	MIT Press
5	Knowledge Management: Concepts and Practices	Eliezer Geisler & Wickramasinghe	Recent Ed.	Routledge
6	Information, Communication and Society	Mukherjee Bhaskar	1 <sup>st</sup> ed., 2012	Ess Ess Publications
7	Information and Communication	Kumar, P.S.G.	2004	B.R. Publishing
8	Information Science in Theory and Practice	Charles H. Davis & Carolyn A. Shaw	3rd Ed., 2011	Facet Publishing
9	The Economics of Information: A Guide to Economic and Cost-Benefit Analysis for Information Professionals	Donald W. King	2003	ASIS&T
10	Information Management	A.K. Chakrabarti	Latest Available	Atlantic Publishers



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#### • Online Resources (Open Source)

Sr. No	Description of Resource(s)	Weblink
1	Data–Information–Knowledge Concepts (IGNOU eGyanKosh Unit) – Covers distinction between data, information, and knowledge with LIS perspective	<a href="https://egyankosh.ac.in/bitstream/123456789/11305/1/Unit-1.pdf">https://egyankosh.ac.in/bitstream/123456789/11305/1/Unit-1.pdf</a>
2	Information as an Economic Resource (IGNOU eGyanKosh Unit) – Explains information economics, asymmetry, and value of information	<a href="https://egyankosh.ac.in/bitstream/123456789/10943/3/Unit-10.pdf">https://egyankosh.ac.in/bitstream/123456789/10943/3/Unit-10.pdf</a>
3	Knowledge Management (IGNOU eGyanKosh Unit) – Concept, processes, and applications of KM in LIS	<a href="https://egyankosh.ac.in/bitstream/123456789/93469/1/Unit-11.pdf">https://egyankosh.ac.in/bitstream/123456789/93469/1/Unit-11.pdf</a>
4	Knowledge Management Systems (e-PG Pathshala – INFLIBNET) – DIK hierarchy, KM strategies, and knowledge processes	<a href="https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S001610/P001748/M022691/ET/1505283474Module_39_Quad_I_Knowledge_management_systems.pdf">https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S001610/P001748/M022691/ET/1505283474Module_39_Quad_I_Knowledge_management_systems.pdf</a>
5	Knowledge Management Concepts & Strategies (IGNOU) – Advanced KM tools and practices	<a href="https://egyankosh.ac.in/bitstream/123456789/10949/3/Unit-15.pdf">https://egyankosh.ac.in/bitstream/123456789/10949/3/Unit-15.pdf</a>
6	National Digital Library of India (NDLI) – Massive repository of books, articles, and LIS content	<a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>
7	e-PG Pathshala (INFLIBNET) – PG-level modules on Information Science, Communication, Society	<a href="https://epgp.inflibnet.ac.in">https://epgp.inflibnet.ac.in</a>
8	e-PG Pathshala module: Data, Information and Knowledge	<a href="https://ebooks.inflibnet.ac.in/lisp1/chapter/data-information-and-knowledge/">https://ebooks.inflibnet.ac.in/lisp1/chapter/data-information-and-knowledge/</a>
9	e-PG Pathshala module: The Information Disciplines	<a href="https://ebooks.inflibnet.ac.in/lisp1/chapter/the-information-disciplines/">https://ebooks.inflibnet.ac.in/lisp1/chapter/the-information-disciplines/</a>
10	e-PG Pathshala module: Economics of Information	<a href="https://ebooks.inflibnet.ac.in/lisp1/chapter/economics-of-information/">https://ebooks.inflibnet.ac.in/lisp1/chapter/economics-of-information/</a>
11	e-PG Pathshala module: Overview of Emerging Knowledge Management Tools	<a href="https://ebooks.inflibnet.ac.in/lisp12/chapter/overview-of-emerging-knowledge-management-tools/">https://ebooks.inflibnet.ac.in/lisp12/chapter/overview-of-emerging-knowledge-management-tools/</a>
12	eGyanKosh unit: The Concept of Information Society	<a href="https://egyankosh.ac.in/bitstream/123456789/9293/1/Unit-1.pdf">https://egyankosh.ac.in/bitstream/123456789/9293/1/Unit-1.pdf</a>
13	eGyanKosh unit: Knowledge Management	<a href="https://egyankosh.ac.in/bitstream/123456789/93469/1/Unit-11.pdf">https://egyankosh.ac.in/bitstream/123456789/93469/1/Unit-11.pdf</a>



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### Master of Library and Information Science (MLISc) Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSC	<b>PB02NCLIB03</b>	Dissertation / Project	0-8-0	120	04

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO 1:** Explain the fundamental concepts of research, including research problem formulation, objectives, hypothesis, scope, and research methodology in the context to selected statement of problem.

**CLO 2:** Prepare a structured research proposal by applying appropriate research design, data collection methods, and dissertation organization principles.

**CLO 3:** Critically analyze and synthesize literature from diverse sources (journals, books, theses, and other documents) to identify research gaps.

**CLO 4:** Analyze and interpret research data using suitable techniques to derive meaningful findings, conclusions, and recommendations.

**CLO 5:** Design and produce a comprehensive dissertation adhering to academic standards, including proper citation, referencing, and scholarly presentation.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<p><b>Format of Research Proposal</b></p> <ul style="list-style-type: none"> <li>• Introduction and Research Methodology               <ul style="list-style-type: none"> <li>Need of the study</li> <li>Scope of the study</li> <li>Statement of problem</li> <li>Objectives of the study</li> <li>Significance of the study</li> <li>Limitation of the study</li> <li>Statement of Hypothesis (If it is required)</li> <li>Research Methodology</li> <li>Data Collection Techniques</li> <li>Organisation of Dissertation / Research Design</li> </ul> </li> </ul>	Classroom Lecture Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) Self-Directed Learning (Guided Readings, Concept Exploration Tasks)	CLO1 CLO2



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II	<b>Literature Review:</b> <ul style="list-style-type: none"><li>• Introduction</li><li>• Objectives of literature review</li><li>• Reviews from journals (National and International)</li><li>• Reviews from reference books</li><li>• Reviews from PhD theses</li><li>• Reviews from other reading materials (Mention types of resources)</li><li>• Research Gap</li></ul>	Classroom Lecture Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) Self-Directed Learning (Guided Readings, Concept Exploration Tasks)	CLO3
III	<b>Main focus on Research Topic (e.g. Public Library; Corporate Library; User Studies, Automation; Bibliometric Study Etc)</b> <ul style="list-style-type: none"><li>• Introduction</li><li>• Concept, Definition, History</li><li>• Important aspects according to study</li></ul>	Classroom Lecture Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) Self-Directed Learning (Guided Readings, Concept Exploration Tasks)	CLO3



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## Master of Library and Information Science [MLISc] Semester-II

IV	<p><b>Core Part of Research</b></p> <ul style="list-style-type: none"> <li>Data Analysis and Interpretation</li> <li>Findings</li> <li>Conclusions</li> <li>Suggestions</li> </ul> <p><b>Citation:</b></p> <ul style="list-style-type: none"> <li>References</li> <li>Bibliography</li> </ul>	<p>Classroom Lecture</p> <p>Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises)</p> <p>Self-Directed Learning (Guided Readings, Concept Exploration Tasks)</p>	CLO4 CLO5
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• **Assessment and Evaluation**

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	-	-
2	End-Semester Examination	Research Report (Dissertation) / Project (50%) Presentation (25%) VIVA VOCE (25%)	100

• **CLOs – PLOs Matrix**

CLO	PLO									
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CLO1	2	–	–	–	–	–	3	–	–	1
CLO2	1	–	–	1	–	–	3	–	–	1
CLO3	2	–	1	–	–	–	3	2	–	3
CLO4	1	–	2	2	1	–	3	3	–	2
CLO5	2	–	–	1	–	1	3	1	1	3

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

• **Suggested Learning Materials Books:**



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Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	The essentials of academic writing for international students	Bailey, S	2024	Routledge
2	The craft of research (4th Ed.).	Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & FitzGerald, W. T.	2016	The University of Chicago Press
3	Library and information sciences trends and research.	Chen, C., & Larsen, R.	2016	Springer Berlin Springer
4	Research methods in library and information science	Connaway, L. S., & Radford, M. L.	7 <sup>th</sup> Edition / 2021	Libraries Unlimited
5	Writing the winning thesis or dissertation: A step-by step guide.	Joyner, R. L., Rouse, W. A., & Glatthorn, A. A.	2018	SAGE Publications.
6	A concise guide to writing a thesis or dissertation: Educational research and beyond	Kornuta, H. M., & Germaine, R. W.	2019	Routledge
7	Technical writing for today and tomorrow	Kranc, S. H.	1 <sup>st</sup> Edition / 2020	Cognella
8	Writing up your research for a dissertation or thesis.	Remenyi, D., & Bannister, F.	2022	UJ Press
9	Research methodology and scientific writing	Thomas, C. G.	2022	Springer International Publishing
10	Refining your academic writing: Strategies for reading, revising and rewriting	Thomson, P.	2022	Routledge
11	Publication manual of the American Psychological Association	American Psychological Association	7 <sup>th</sup> Editon / 2019	American Psychological Association

### • Online Resources (Open Source)

Sr. No.	Description of Resource(s)	Weblink
1	Zotero : Reference Management Software	<a href="https://www.zotero.org/">https://www.zotero.org/</a>
2	Mendeley : Reference Management Software	<a href="https://www.mendeley.com/">https://www.mendeley.com/</a>



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## Master of Library and Information Science [MLISc] Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSE	<b>PB02NELIB01</b>	Information Technology	4-0-0	<b>120</b>	04

- **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

CLO1: Explain basic concepts of information technology and database systems in libraries..

CLO2: Describe digital information systems, digitization, metadata, and e-resources.

CLO3: Understand internet technologies, communication tools, and network protocols.

CLO4: Identify data security issues and apply basic security measures.

CLO5: Recognize the role of emerging technologies in modern library services.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<b>Fundamentals of Information Technology and Database Systems</b> <ul style="list-style-type: none"> <li>• <b>Information Technology in Libraries</b> Concept, components, role of IT in library automation and services</li> <li>• <b>Computer Fundamentals</b> Hardware, software, operating systems, input-output devices</li> <li>• <b>Database Management Systems (DBMS)</b> Concept, types, structure, DBMS vs RDBMS</li> <li>• <b>Metadata Standards and Data Organization</b> Concept, types, Dublin Core, MARC, importance in digital libraries</li> <li>• <b>Data Warehousing and Data Mining</b> Concepts, techniques, applications in libraries and information centers</li> </ul>	Classroom Lecture Seminars Micro-Projects/Mini Research Tasks Problem-Based Learning Research-Oriented Learning Collaborative Learning ICT-Enabled Learning Self-Directed Learning	CLO1 CLO2



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## Master of Library and Information Science [MLISc] Semester-II

II	<p><b>Digital Information Systems and Resources</b></p> <ul style="list-style-type: none"> <li>• <b>Electronic and Digital Information</b> Concept, characteristics, advantages, limitations</li> <li>• <b>Digitization</b> Concept, need, process, techniques, challenges and issues</li> <li>• <b>Digital Formats and Standards</b> Text, image (JPEG, GIF, BMP), audio (MP3, WAV), video (MPEG) formats</li> <li>• <b>E-Resources</b> E-books, E-journals, databases, open access resources</li> <li>• <b>Government and Institutional Digital Initiatives</b> NDLI, e-ShodhSindhu, Digital India initiatives, institutional repositories</li> </ul>	<p>Classroom Lecture Seminars Micro-Projects/Mini Research Tasks Industrial Visit/Field Visit/Institutional Visit Problem-Based Learning Research-Oriented Learning Collaborative Learning Experiential Learning ICT-Enabled Learning Reflective Practices</p>	<p>CLO2 CLO5</p>
III	<p><b>Internet Technologies and Communication Systems</b></p> <ul style="list-style-type: none"> <li>• <b>Internet and World Wide Web</b> Concept, structure, services, role of W3C</li> <li>• <b>Communication Tools and Techniques</b> E-mail, video conferencing, teleconferencing, VoIP, bulletin boards</li> <li>• <b>Internet Protocols and Standards</b> TCP/IP, HTTP, FTP, SMTP, Telnet, Z39.50, OSI Model</li> <li>• <b>Markup Languages and Web Technologies</b> HTML, XML, SGML, DHTML, basics of web design</li> <li>• <b>Internet Connectivity and Network Types</b> Dial-up, leased line, ISDN, DSL, broadband, Wi-Fi</li> </ul>	<p>Classroom Lecture Seminars Micro-Projects/Mini Research Tasks Problem-Based Learning Research-Oriented Learning Collaborative Learning ICT-Enabled Learning Reflective Practices Self-Directed Learning</p>	<p>CLO3</p>



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## Master of Library and Information Science [MLISc] Semester-II

IV	<p><b>Cybersecurity, Web Technologies and Emerging Trends</b></p> <ul style="list-style-type: none"> <li>• <b>Data Security in Libraries</b> Concept, need, threats, types of cyber risks</li> <li>• <b>Security Tools and Techniques</b> Firewalls, antivirus software, encryption, authentication</li> <li>• <b>Cyber Threats</b> Viruses, malware, phishing, spam, data breaches</li> <li>• <b>Web 2.0,3.0,4.0 and Library 2.0,3.0,4.0</b> Concepts, tools (blogs, wikis, social media), applications in libraries</li> <li>• <b>Emerging Technologies in LIS</b> Cloud computing, Artificial Intelligence, Big Data, IoT in libraries</li> </ul>	Classroom Lecture Seminars Micro-Projects/Mini Research Tasks Problem-Based Learning Research-Oriented Learning Collaborative Learning Experiential Learning ICT-Enabled Learning Reflective Practices Self-Directed Learning	CLO4 CLO5
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• **Assessment Methodologies**

**(A) Internal Assessment**

**a. Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment
- (c) Seminar/Presentation

**b. Internal Summative Assessment (25 Marks)**

- (a) Mid-Term Examination

**(B) Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage (Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/Analyse & above (A)	
I	CLO1 CLO2	30	1	1	12	14
II	CLO2 CLO5	32	1	1	10	12
III	CLO3	28	1	1	10	12
IV	CLO4 CLO5	30	1	1	10	12
		<b>120</b>	<b>04</b>	<b>04</b>	<b>42</b>	<b>50</b>



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## Master of Library and Information Science [MLISc] Semester-II

### Assessment and Evaluation

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Seminars, Assignments, Attendance, Mid-Term Examination	50
2	End-Semester Examination	Written Exam	50

### (C) CLOs – PLOs Matrix

CLO	PLO											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CLO 1	3	1	-	2	-	-	-	-	-	-	-	-
CLO 2	2	3	1	2	-	1	-	-	-	-	-	-
CLO 3	1	-	2	3	-	-	-	-	-	-	-	1
CLO 4	1	-	-	2	1	-	-	-	-	2	3	-
CLO 5	2	-	-	2	3	2	-	-	-	-	-	1

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

### Suggested Learning Materials Books:

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	Information Technology for Management	Efraim Turban, Linda Volonino	11th Edition/2015	Wiley
2	Database System Concepts	Abraham Silberschatz, Henry F. Korth, S. Sudarshan	6th Edition/2010	McGraw-Hill
3	Digital Libraries: Principles and Practice in a Global Environment	Lucy A. Tedd, Andrew Large	1st Edition/2005	K. G. Saur
4	Introduction to Information Technology	V. Rajaraman	2nd Edition/2018	PHI Learning
5	Web Technologies: Black Book	Kogent Learning Solutions Inc.	2nd Edition/2009	Dreamtech Press



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## Master of Library and Information Science [MLISc] Semester-II

6	Library Information Systems: From Library Automation to Distributed Information Access Solutions	Joseph Becker	1st Edition/1998	McGraw-Hill
7	The Digital Library: A Biography	Daniel R. Headrick	1st Edition/2000	Greenwood Press
8	Data Communications and Networking	Behrouz A. Forouzan	5th Edition/2012	McGraw-Hill
9	Information Storage and Retrieval Systems: Theory and Implementation	Gerald Kowalski, Mark T. Maybury	2nd Edition/2005	Springer
10	Cloud Computing: Concepts, Technology & Architecture	Thomas Erl, Ricardo Puttini, Zaigham Mahmood	1st Edition/2013	Prentice Hall
11	Information Technology and Library Science ( <b>Hindi Book</b> )	R. K. Mishra	First Edition / 2019	Pearson India
12	Information Technology in Library and Information Science ( <b>Hindi Book</b> )	M. K. Singh	First Edition / 2018	S. S. Publication
13	Digital Library and Information Management ( <b>Hindi Book</b> )	N. N. agarwal	First Edition/2020	K. B. D Publications
14	Information Communication Process ( <b>Gujarati Book</b> )	J. C. Makwana	First Edition / 2018	A.S. F. Computer

### • Online Resources (Open Source)

Sr. No.	Description of Resource(s)	Weblink
1	EPGPathshala INFLIBNET Study Material	<a href="https://epgp.inflibnet.ac.in/">https://epgp.inflibnet.ac.in/</a>
2	EGyanKosh Indira Gandhi National Open University Study Material	<a href="http://egyankosh.ac.in/">http://egyankosh.ac.in/</a>
3	National Digital Library Study Material	<a href="https://ndl.iitkgp.ac.in/">https://ndl.iitkgp.ac.in/</a>
4	Vardhman Mahavir Open University Kota Study Material	<a href="https://www.vmou.ac.in/slm">https://www.vmou.ac.in/slm</a>
5	Dr. Babasaheb Ambedkar Open University Study Material	<a href="https://baou.edu.in/syllabus-slm-e-books">https://baou.edu.in/syllabus-slm-e-books</a>
6	National Institute of Open Schooling (NIOS) Study Material	<a href="https://nios.ac.in/online-course-material/sr-secondary-courses/library-and-information-science.aspx">https://nios.ac.in/online-course-material/sr-secondary-courses/library-and-information-science.aspx</a>
7	NPTEL SWAYAM Platform	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>
8	YouTube Channel	LIS Academy
9	YouTube Channel	UGC NET LIS Tutorials



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## Master of Library and Information Science [MLISc] Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSE	<b>PB02NELIB02</b>	Open Educational Resources	4-0-1	120	04

- **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO1:** Explain the concept, philosophy, evolution, and significance of Open Educational

Resources (OER) in education systems.

**CLO2:** Classify and interpret types, components, standards, and technological frameworks of OER

ecosystems.

**CLO3:** Analyse national and international OER initiatives, policies, and platforms and evaluate

their role in knowledge sharing.

**CLO4:** Apply intellectual property rights (IPR), licensing, and ethical practices in the use and

dissemination of OER.

**CLO5:** Design and implement strategies for integrating OER and developing institutional digital

repositories.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<b>Introduction to Open Educational Resources:</b> <ul style="list-style-type: none"> <li>• Concept and Philosophy of OER</li> <li>• Definitions and Core Characteristics of OER</li> <li>• Historical Development and Evolution of OER Movement</li> <li>• Importance and Role of OER in Education Systems</li> <li>• Benefits and Pedagogical Advantages of OER</li> <li>• Challenges and Issues in OER Adoption</li> </ul>	Classroom Lecture  Seminar,  Inquiry based Learning	CLO1
II	<b>Types and Components of OER:</b> <ul style="list-style-type: none"> <li>• Classification of OER by Format and Media</li> <li>• Subject-wise and Disciplinary Distribution of OER</li> <li>• Educational Level-wise Categorization of OER</li> <li>• Core Components of OER Ecosystem</li> <li>• Technological Infrastructure Supporting OER</li> </ul>	Classroom Lecture  Seminar	CLO2



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**Masters of Library & Information Science [MLISc] Semester-II**

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSE	<b>PB02NELIB02</b>	Open Educational Resources	4-0-1	120	04

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO1:** Explain the concept, philosophy, evolution, and significance of Open Educational

Resources (OER) in education systems.

**CLO2:** Classify and interpret types, components, standards, and technological frameworks of OER ecosystems.

**CLO3:** Analyse national and international OER initiatives, policies, and platforms and evaluate their role in knowledge sharing.

**CLO4:** Apply intellectual property rights (IPR), licensing, and ethical practices in the use and dissemination of OER.

**CLO5:** Design and implement strategies for integrating OER and developing institutional digital repositories.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<b>Introduction to Open Educational Resources:</b> <ul style="list-style-type: none"> <li>• Concept and Philosophy of OER</li> <li>• Definitions and Core Characteristics of OER</li> <li>• Historical Development and Evolution of OER Movement</li> <li>• Importance and Role of OER in Education Systems</li> <li>• Benefits and Pedagogical Advantages of OER</li> <li>• Challenges and Issues in OER Adoption</li> </ul>	Classroom Lecture Seminar, Inquiry based Learning	CLO1
II	<b>Types and Components of OER:</b> <ul style="list-style-type: none"> <li>• Classification of OER by Format and Media</li> <li>• Subject-wise and Disciplinary Distribution of OER</li> <li>• Educational Level-wise Categorization of OER</li> <li>• Core Components of OER Ecosystem</li> <li>• Technological Infrastructure Supporting OER</li> <li>• Standards, Metadata, and Interoperability in OER</li> </ul>	Classroom Lecture Seminar Collaborative Learning Inquiry based Learning Self-Directed Learning	CLO2



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### Masters of Library & Information Science [MLISc] Semester-II

III	<b>OER in India and Worldwide:</b> <ul style="list-style-type: none"> <li>• Overview of OER Initiatives in India</li> <li>• Government Policies and Institutional Support for OER in India</li> <li>• Global OER Initiatives and Platforms</li> <li>• Comparative Study of OER Practices</li> <li>• Role of International Organizations in Promoting OER</li> <li>• Impact of OER on Global Knowledge Sharing and Education</li> </ul>	Classroom Lecture Seminar Collaborative Learning Inquiry based Learning	CLO3
IV	<b>Application and Implementation of OER:</b> <ul style="list-style-type: none"> <li>• Intellectual Property Rights (IPR) in OER</li> <li>• Plagiarism, Academic Integrity, and Ethical Practices in OER Use</li> <li>• Integration of OER in Teaching-Learning Processes</li> <li>• Use of OER in E-learning and Digital Education</li> <li>• Strategies for Implementation of OER in Institutions</li> <li>• Development and Management of Digital Repositories for OER</li> </ul>	Classroom Lecture Seminar Inquiry based Learning	CLO4, CLO5

**(A) Internal Assessment**

**a. Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment
- (c) Seminar/Presentation

**a. Internal Summative Assessment (25 Marks)**

- (a) Mid-Term Examination

**(B) Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage (Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/ Analyse & above (A)	
I	CLO1	30	1	3	10	14
II	CLO2	32	1	3	08	12
III	CLO3	28	1	3	08	12
IV	CLO4, CLO5	30	1	3	08	12
		120	04	12	34	50

**• Assessment and Evaluation**

Sr.No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Seminars, Assignments, Attendance, Mid-Term examination	50
2	End-Semester Examination	Written Exam	50



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**Masters of Library & Information Science [MLISc] Semester-II**

**(C) CLOs – PLOs Matrix**

CLO	PLO											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CLO1	3	-	2	-	-	-	-	-	-	-	1	-
CLO2	2	3	-	2	-	2	-	-	-	1	-	-
CLO3	2	-	3	-	2	-	1	2	-	2	-	-
CLO4	-	-	-	2	-	-	-	-	-	2	3	1
CLO5	1	-	2	3	2	3	-	-	2	-	2	2

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

• **Suggested Learning Materials Books:**

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	Open Source Databases Driven Web Development	Dunlap, Isaac, H.	2006	Oxford
2	Open Sources Library Solutions	Tripathi, Aditya	2010	Ess.Ess Publication
3	Freedom Of Information Open Access, Empty Archives?	Flinn, Andrew	2009	Routledge Publishing
4	Open Educational Resources: Policy, Costs, and Transformation	Rory McGreal et al.	2013	Commonwealth of Learning
5	Open: The Philosophy and Practices that are Revolutionizing Education and Science	Jhangiani & Biswas-Diener	2017	Ubiquity Press
6	The UNESCO Guide to Open Educational Resources	UNESCO	2015	UNESCO
7	Open Educational Resources in Higher Education: A Global Perspective	Jako Olivier & Andreas Rambow (Eds.)	2023	Springer
8	Intersections of Open Educational Resources and Information Literacy	Cullen & Dill	2022	ACRL
9	Contextualised Open Educational Practices: Towards Student Agency and Self-Directed Learning	Jako Olivier	2022	African Minds
10	Best Practices in Designing Courses with OER	Zhadko & Ko	2020	Routledge



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### Masters of Library & Information Science [MLISc] Semester-II

- **Online Resources (Open Source)**

Sr. No.	Description of Resource(s)	Weblink
1	OER Commons – Digital library of open educational resources	<a href="https://www.oercommons.org">https://www.oercommons.org</a>
2	MERLOT – Peer-reviewed teaching and learning materials	<a href="https://www.merlot.org">https://www.merlot.org</a>
3	MIT OpenCourseWare – Free course materials from MIT	<a href="https://ocw.mit.edu">https://ocw.mit.edu</a>
4	OpenStax – Open textbooks for higher education	<a href="https://openstax.org">https://openstax.org</a>
5	SWAYAM – Government of India MOOC platform	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
6	NPTEL – Engineering and technical courses by IITs	<a href="https://nptel.ac.in">https://nptel.ac.in</a>
7	NDLI – National Digital Library of India	<a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>
8	DOAJ – Directory of Open Access Journals	<a href="https://doaj.org">https://doaj.org</a>



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## Master of Library and Information Science [MLISc] Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSE	<b>PB02NELIB03</b>	Information Technology (Practical)	0-8-0	<b>120</b>	04

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

CLO1: Design and develop basic library web pages using HTML, CSS, and web editing tools.

CLO2: Create and manage dynamic library websites using CMS platforms such as WordPress or Google Sites.

CLO3: Develop and manage digital libraries or institutional repositories using open-source software.

CLO4: Perform library automation tasks using ILMs tools like Koha/SOUL and manage routine library operations.

CLO5: Apply ICT tools and digital platforms to deliver modern library services, including cloud-based services and digital content creation.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<b>Web Designing Basics for Libraries</b> <ul style="list-style-type: none"> <li>Designing basic web pages using HTML and CSS (structure, links, tables, forms)</li> <li>Use of web editing tools (VS Code / Notepad++) for creating library pages</li> <li>Development of simple static library website pages (Home, Services, Contact)</li> </ul>	Problem-Based Learning ICT-Enabled Learning Self-Directed Learning	CLO1 CLO5
II	<b>Library Website Development using CMS</b> <ul style="list-style-type: none"> <li>Creating library website using WordPress / Google Sites</li> <li>Customizing themes, pages, and navigation structure</li> <li>Adding features: blog, contact forms, OPAC links, and user services</li> </ul>	Micro-Projects/Mini Research Tasks Collaborative Learning ICT-Enabled Learning	CLO2 CLO5
III	<b>Digital Library and Institutional Repository</b> <ul style="list-style-type: none"> <li>Installation and basic operation of DSpace / Greenstone / E-Prints</li> <li>Creating collections and uploading digital documents with metadata</li> <li>Searching, browsing, and managing digital library content</li> </ul>	Research-Oriented Learning Experiential Learning Industrial Visit/Field Visit/Institutional Visit	CLO3 CLO5



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## Master of Library and Information Science [MLISc] Semester-II

IV	<b>Library Automation and Digital Services</b> <ul style="list-style-type: none"> <li>Hands-on practice with Koha / SOUL (cataloguing, circulation, OPAC)</li> <li>Use of cloud tools (Google Drive, Forms) for library services (CAS/SDI)</li> <li>Creation of digital content (posters, notices, basic videos using Canva/tools)</li> </ul>	Experiential Learning	CLO4 CLO5
		ICT-Enabled Learning	
		Reflective Practices	

• **Assessment Methodologies**

**(A) Internal Assessment**

**a. Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment

**b. Internal Summative Assessment (25 Marks)**

- (a) Viva-voce

**(B) Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage (Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/Analyse & above (A)	
I	CLO1 CLO5	30	1	1	12	14
II	CLO2 CLO5	32	1	1	10	12
III	CLO3 CLO5	28	1	1	10	12
IV	CLO4 CLO5	30	1	1	10	12
		<b>120</b>	<b>04</b>	<b>04</b>	<b>42</b>	<b>50</b>

• **Assessment and Evaluation**

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Attendance, Assignment, Viva-voce	50
2	End-Semester Examination	Practical Exam	50



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## Master of Library and Information Science [MLISc] Semester-II (C) CLOs – PLOs Matrix

CLO	PLO											
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
CLO 1	2	-	1	3	1	2	-	-	-	-	-	1
CLO 2	2	-	2	3	2	3	-	-	1	-	-	2
CLO 3	2	2	2	3	3	3	-	-	1	2	-	1
CLO 4	2	2	2	3	2	2	-	-	-	-	-	2
CLO 5	2	-	3	3	3	2	1	-	2	2	2	3

Values to CLO-PLO matrix are assigned by judging the importance of the particular CLO in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

- Suggested Learning Materials Books:**

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	HTML and CSS: Design and Build Websites	Jon Duckett	2011	John Wiley & Sons
2	Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics	Jennifer Niederst Robbins	5th Edition, 2018	O'Reilly Media
3	WordPress for Beginners 2020: A Visual Step-by-Step Guide to Mastering WordPress	Dr. Andy Williams	2020	Independently Published
4	Using Drupal in Libraries	Kenneth J. Varnum	2012	American Library Association
5	Digital Libraries: Principles and Practice in a Global Environment	Lucy A. Tedd & Andrew Large	2005	K.G. Saur
6	Koha 3 Library Management System	Dinesh K. Gupta	2010	Ess Ess Publications



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## Master of Library and Information Science [MLISc] Semester-II

7	Library Technology Companion: A Basic Guide for Library Staff	John J. Burke	4th Edition, 2016	ALA Neal-Schuman
8	Data Communications and Networking	Behrouz A. Forouzan	5th Edition/2012	McGraw-Hill
9	Information Storage and Retrieval Systems: Theory and Implementation	Gerald Kowalski, Mark T. Maybury	2nd Edition/2005	Springer
10	Cloud Computing: Concepts, Technology & Architecture	Thomas Erl, Ricardo Puttini, Zaigham Mahmood	1st Edition/2013	Prentice Hall
11	Information Technology and Library Science ( <b>Hindi Book</b> )	R. K. Mishra	First Edition / 2019	Pearson India
12	Information Technology in Library and Information Science ( <b>Hindi Book</b> )	M. K. Singh	First Edition / 2018	S. S. Publication

### • Online Resources (Open Source)

Sr. No.	Description of Resource(s)	Weblink
1	EPGPathshala INFLIBNET Study Material	<a href="https://epgp.inflibnet.ac.in/">https://epgp.inflibnet.ac.in/</a>
2	EGyanKosh Indira Gandhi National Open University Study Material	<a href="http://egyankosh.ac.in/">http://egyankosh.ac.in/</a>
3	National Digital Library Study Material	<a href="https://ndl.iitkgp.ac.in/">https://ndl.iitkgp.ac.in/</a>
4	Vardhman Mahavir Open University Kota Study Material	<a href="https://www.vmou.ac.in/slm">https://www.vmou.ac.in/slm</a>
5	Dr. Babasaheb Ambedkar Open University Study Material	<a href="https://baou.edu.in/syllabus-slm-e-books">https://baou.edu.in/syllabus-slm-e-books</a>
6	National Institute of Open Schooling (NIOS) Study Material	<a href="https://nios.ac.in/online-course-material/sr-secondary-courses/library-and-information-science.aspx">https://nios.ac.in/online-course-material/sr-secondary-courses/library-and-information-science.aspx</a>
7	NPTEL SWAYAM Platform	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>
8	YouTube Channel	LIS Academy
9	YouTube Channel	UGC NET LIS Tutorials

# SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar

NAAC 'A' Grade (10-01-2023 To 09-01-2028)

NEP-2020 aligned Curriculum with effect from Academic Year 2026-27

## Master of Library and Information Science [MLISc] Semester-II

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
DSE	<b>PB02NELIB04</b>	Research Data Management	4-0-1	<b>120</b>	04

- **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO1:** Critically explain the concepts, types, and lifecycle of research data, and develop comprehensive Data Management Plans (DMPs) incorporating data curation and citation practices.

**CLO2:** Evaluate open data publishing models, repositories, licensing frameworks, and apply FAIR principles while ensuring data privacy and ethical compliance.

**CLO3:** Design and implement metadata standards and management strategies to enhance data organization, discovery, interoperability, and long-term preservation.

**CLO4:** Apply best practices in research data management to address challenges in data quality, documentation, storage, and access across the data lifecycle.

**CLO5:** Demonstrate the use of data management and repository tools (e.g., OpenRefine, Talend, CKAN, Dataverse, Figshare, Zenodo) for data cleaning, transformation, storage, and sharing.



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Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<p><b>Concept of Research Data Management</b></p> <ul style="list-style-type: none"> <li>• Concept and definition of Data</li> <li>• Types of Data</li> <li>• Research Data</li> <li>• Data Management Cycle</li> <li>• Data Management Plan (DMP)</li> <li>• RDM Steps</li> <li>• Data Curation</li> <li>• Data Citation</li> </ul>	Classroom Lecture Seminars (Student-led and Faculty-moderated) Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises)	CLO1



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		ICT-Enabled Learning (LMS-based Tasks, Digital Resources, Virtual Labs/Webinars)	
II	<b>Publishing and Licensing:</b> <ul style="list-style-type: none"> <li>• Open Data Publishing</li> <li>• Data Repositories</li> <li>• Licenses</li> <li>• FAIR Principles</li> <li>• Data Privacy and Ethics</li> </ul>	Classroom Lecture Seminars (Student-led and Faculty-moderated) Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) ICT-Enabled Learning (LMS-based Tasks, Digital Resources, Virtual Labs/Webinars)	CLO2
III	<b>Metadata Standards:</b> <ul style="list-style-type: none"> <li>• Metadata</li> <li>• Metadata Management Tools</li> <li>• Metadata Management Issue and Challenges.</li> </ul> Best Practices in Data Management	Classroom Lecture Seminars (Student-led and Faculty-moderated) Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) ICT-Enabled Learning (LMS-based Tasks, Digital Resources, Virtual Labs/Webinars)	CLO3 CLO4



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**Master of Library and Information Science (MLISc) Semester-II**

IV	<p><b>Software Packages:</b></p> <ul style="list-style-type: none"> <li>• Software for Cleaning Messy Data: OpenRefine Extract Transform Load (ETL) software - Talend</li> <li>• Software for Data Repositories: CKAN Dataverse</li> <li>• Research Data Repository: Figshare Zonedo</li> </ul>	<p>Classroom Lecture Seminars (Student-led and Faculty-moderated) Research-Oriented Learning (Literature Review, Tool Construction, Data Analysis Exercises) ICT-Enabled Learning (LMS-based Tasks, Digital Resources, Virtual Labs/ Webinars)</p>	CLO5
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• **Assessment Methodologies**

**(A) Internal Assessment**

**a. Internal Formative assessment (25 Marks)**

- (a) Attendance
- (b) Assignment
- (c) Seminar

**a. Internal Summative Assessment (25 Marks)**

- (a) Mid-term Exam

**(B) Weightage of Learning Efforts for External Assessment**

Unit	Aligned COs	Total Learning Hours	Approximate weightage(Marks) to Learning levels (BT)			Total Marks
			Remember (R)	Understanding (U)	Application/ Analyse & above (A)	
I	CLO1	30	1	4	09	14
II	CLO2	32	1	4	07	12
III	CLO3 CLO4	28	1	4	07	12
IV	CLO5	30	1	4	07	12
		<b>120</b>	<b>04</b>	<b>16</b>	<b>30</b>	<b>50</b>



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• **Assessment and Evaluation**

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	Seminars, Assignments, Attendance, Mid-Term Examination	50
2	End-Semester Examination	Written Exam	50

**(C) CLOs – PLOs Matrix**

CLO	PLO									
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CLO1	3	2	1	1	1	2	2	1	-	2
CLO2	2	1	-	1	3	2	1	1	-	3
CLO3	2	3	-	2	1	3	-	1	1	2
CLO4	2	2	2	2	1	1	2	1	1	2
CLO5	1	1	-	3	2	3	1	-	1	1

Values to CLO-PLO matrix are assigned by **judging the importance of the particular CLO** in relation to the PLOs.

CLO – PLO correlation	Value
Strong	3
Moderate	2
Low	1
No correlation	-

• **Suggested Learning Materials Books:**

Sr. No.	Title	Author(s)	Edition/Year	Publisher
1	Teaching research data management. ALA Editions	Bouder, J.	2022	ALA
2	Managing your research data and documentation: Concise guides to conducting behavioral, health, and social science research	Berenson, K. R.	2018	American Psychological Association
3	Engaging researchers with data management: The cookbook.	Clare, C., et al	2019	OpenBook Publishers
4	Exploring research data management.	Cox, A. M., & Verbaan, E	2018	Facet publishing
5	Data science for librarians.	Du, Y., Khan, H. R.	2020	Bloomsbury Academic
6	Theories and methods in data science librarianship	Ekstrom, J., & Wildgaard, L. (Eds.).	2019	Facet Publishing.



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7	Cases on research support services in academic libraries.	Fernandez-Marcial, V., & Gonzalez-Solar, L. (Eds.).	2020	IGI Global
8	Open scientific data: Why choosing and reusing the right data matters	Lipton, V. J	2020	. IntechOpen
9	Data driven decisions: A practical toolkit for librarians and information professionals	Stubbing, A.	2022	Facet Publishing
10	Research data management and data literacies	Tibor, K.	2021	Elsevier Science
11	Data management for social scientists: From files to databases	Weidmann, N. B.	2023	Cambridge University Press
12	The data book: Collection and management of research data.	Zozus, M.	2017	CRC Press.
13	Practical Data Science for Information Professionals	Stuart, David	2019	Facet Publishing

#### • Online Resources (Open Source)

Sr. No.	Description of Resource(s)	Weblink
1	Module 02: Data, Information, and Knowledge. In Paper No. 01. Knowledge Society	<a href="https://epgp.inflibnet.ac.in/">https://epgp.inflibnet.ac.in/</a>
2	Registry of Research Data Repositories (Re3data)	<a href="https://www.re3data.org/">https://www.re3data.org/</a>



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**Masters of Library & Information Science [MLISc] Semester-II**

Course Type	Course Code	Course Title	Teaching-Learning Scheme	Total Notional Hours	Course credits
			L-P-T		
Internship	<b>PB02NSLIB01</b>	Library Internship (Advanced)	0-4-0	60	02

• **Course Learning Outcomes (CLOs)**

On completion of this course, students will be able to:

**CLO1:** Analyse advanced library operations including automation, digital library systems, and ICT-based workflows.

**CLO2:** Evaluate library management practices, user services, and decision-making processes.

**CLO3:** Apply professional communication and user engagement strategies in real library settings.

**CLO4:** Critically examine digital library systems, web content management, and institutional repository workflows and suggest improvements.

**CLO5:** Design and present a comprehensive internship report integrating theory, ICT applications, and practical exposure.

Unit	Course Content	Learning Pedagogies*	CLO(s)
I	<p><b>Advanced Internship Training, Digital Systems &amp; Job Diary</b></p> <ul style="list-style-type: none"> <li>Advanced exposure to Library Automation Systems (Koha/SOUL)</li> <li>Participation in cataloguing, metadata standards (MARC21, Dublin Core)</li> <li>Hands-on training in Digital Library &amp; Institutional Repository (DSpace):</li> <li>Introduction to Web Content Management in Libraries:</li> <li>Study of collection development, digital resources, and user services</li> <li>Maintenance of detailed job diary with analytical observations</li> </ul>	<p>Supervised Advanced Training</p> <p>Hands-on ICT Practice (Koha/DSpace/CMS)</p> <p>Reflective Journaling</p> <p>Field Analysis &amp; System Observation</p>	CLO1, CLO4



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II	<b>Internship Report, System Analysis &amp; Digital Evaluation</b> <ul style="list-style-type: none"> <li>• Preparation of analytical internship report (print + digital services)</li> </ul> Evaluation of: Library automation systems, Digital library platforms, Institutional repository (DSpace) performance <ul style="list-style-type: none"> <li>• Analysis of web content management practices in libraries</li> <li>• Interaction with LIS professionals and ICT staff</li> <li>• Identification of problems in Digital workflows, User services, Content organization</li> <li>• Suggesting technology-based improvements and innovations</li> </ul>	Case Study Analysis  (Digital Libraries & IRs)  Report Writing,  Professional Interaction	CLO2, CLO3, CLO5
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• **Description:**

Students shall undergo an internship in a library for two weeks under the supervision of the concerned Librarian. During the internship, hands-on training shall be provided in all sections of the library. Submission of an Internship Report is mandatory after completion of the internship. Students must also submit an Internship Completion Certificate issued by the concerned Librarian.

• **Assessment and Evaluation**

Sr. No.	Assessment/Evaluation	Component	Weightage (%)
1	Continuous Internal Evaluation	-	0
2	End-Semester Examination	Internship Report with internship completion certificate (30%) Presentation and Viva Voce (20%)	50%

• **CLOs – PLOs Matrix**

CLO	PLO											
	1	2	3	4	5	6	7	8	9	10	11	12
CLO1	3	2	2	3	2	1	-	-	-	-	-	1
CLO2	2	-	3	2	3	-	1	2	-	2	2	2
CLO3	-	-	2	2	-	-	-	-	1	2	2	3
CLO4	2	2	3	3	3	2	-	2	2	3	2	1
CLO5	2	-	2	2	2	2	3	2	3	2	2	2

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