

**CENTRAL UNIVERSITY OF PUNJAB**



**Ph.D. (Library and Information Sciences)**

**Batch 2024**

**Department of Library and Information  
Sciences**

## Graduate Attributes

Graduates shall have enhanced skills in varied aspects of conducting research in different cultural settings. Graduates shall be competent in analysing problems related to library and information science and finding gaps in the existing body of literature. Graduates shall have a scientific attitude in examining research problems and conducting research for their solutions at local and global level. Graduates shall contribute significantly in the knowledge economy of the nation.

## Course Structure

Course Code	Course Title	Course Type	L	T	P	CR
LIS.706	Research Methodology	Core Course	4	0	0	4
LIS.708	Research Competencies (Practical)	Skill Based	0	0	4	2
LIS.709	E-Research Tools and Techniques (practical)	Skill Based	0	0	2	1
LIS.751	Research and Publication Ethics	Discipline	2	0	0	2
LIS.752	Teaching Assistantship	Core Course	0	0	2	2
UNI.753	Curriculum, Pedagogy and Evaluation	Core Course	1	0	0	1
LIS###	Choose one Elective from Course-list	Elective	-	-	-	4
	<b>TOTAL</b>	-	-	-	-	<b>16</b>

### List of Electives (Scholars to choose a course from these electives)

LIS.701	R & Python programming for Data Science Applications in Research	Elective	3	0	2	4
LIS.702	Research Trends in Information Sources, Services and Systems		4	0	0	
LIS.703	Scholarly Communication and Research Evaluation		4	0	0	
LIS.704	Information Communication and Management of Library and Information Centres		4	0	0	
LIS.705	Knowledge Management		4	0	0	
LIS.711	Information Literacy and User Studies		4	0	0	

**Course Code: LIS.706**  
**Course Title: Research Methodology**  
**Course type: Core Course**  
**Total Hours: 60**

L	T	P	Credit
4	0	0	4

**Course Learning outcomes (CLO):**

After completion of the course the students will be able to  
 CLO1: Develop a skill set to understand different approaches to research.  
 CLO2: Understand practical aspects of research design.  
 CLO3: Select appropriate sampling techniques in research.  
 CLO4: Understand aspects of data analyses and IPR issues.

Units/Hours	Contents	Mapping with CLOs
I 16 Hours	<p><b>Research Approaches and Types</b>            Research approaches: Logical positivism, phenomenology, ethnography, and triangulation, quantitative, qualitative; types of research and their applications: according to purpose and method.            Historical Research: Primary and secondary sources of information, external and internal criticism of the source.            Descriptive Research: Assessment studies, evaluation studies, ex-post facto studies, replication and meta-analysis.            Experimental research: Types of experimental research designs; designing and developing appropriate experimental designs for research problems.            Applied Research in LIS: Applied research in Information Science and Knowledge Management.</p>	<b>CLO1</b>
	<p><b>Reflection:</b> Scholars will learn various research approaches and its rationale.</p>	

<b>II</b> <b>14 Hours</b>	<b>Quantitative and Qualitative Research methods and Tools</b> Quantitative research methods and tools: Selection, types and application. Qualitative research methods and tools: Selection, types and application. Mixed Method: Meaning and characteristics, designs and their application.	<b>CLO2</b>
	<b>Reflection:</b> Scholars will understand practical aspects of research design.	
<b>III</b> <b>14 Hours</b>	<b>Sampling Techniques</b> Sampling design: Selecting appropriate probability and non-probability sampling techniques for qualitative and quantitative research problems	<b>CLO3</b>
	<b>Reflection:</b> Scholars will learn about selection of Sampling Techniques in research design according to needs and circumstances	
<b>IV</b> <b>16 Hours</b>	<b>Data Analysis and Intellectual Property Rights</b> Data analysis in quantitative & qualitative research. Content analysis, inductive, logical, Intellectual Property, intellectual property protection (IPP) and intellectual property rights (IPR), WIPO (World Intellectual Property Organisation) Research Data Management Tools and Methods. IPR Policy of Central University of Punjab.	<b>CLO4</b>
	<b>Reflection:</b> Scholars will gain proficiency in Data Analysis and Intellectual Property Rights	

**Transaction Mode:** Lectures, PPT, Collective thinking, YouTube, Discussion.

### **Suggested Readings**

1. Best J.W. (1999). *Research in Education*. New Delhi: Prentice Hall of India Pvt. Ltd.
2. Bogdon, R., & Biklen, S. K. (2008). *Qualitative Research for Education: An Introduction to Theories and Practice*. New Delhi: PHI learning
3. Borg, W.R., & Gall, M.D. (1983). *Educational Research – An Introduction*. New York: Longman, Inc.
4. Chandra, S. S., & Sharma, R.K. (2010). *Research in education*. New Delhi: Atlantic Publishers and Distributers (P) LTD.
5. Christensen, L. (2007). *Experimental Methodology*. Boston: Allyn & Bacon.
6. Creswell, J. W. (2015). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. Boston: Pearson Publications.
7. Curtis, W., Murphy, M., & Shields, S. (2013). *Research and Education*. New York & London: Routledge
8. EfratEfron, S., & Ravid, R. (2013). *Action Research in Education: A Practical Guide*, New York: Routledge
9. Egbert, J., & Sanden, S. (2013). *Foundations of Education Research: Understanding Theoretical Components*. New York: Routledge.
10. Fraenkel, J.R., & Wallen, N.E. (1996). *How to Design and Evaluate Research in Education*. New York: McGraw Hill.
11. Gordon, P. (1996). *A Guide to Educational Research*. New York: Routledge
12. Kaul, L. (1984). *Methodology of Educational Research*. New Delhi: Vikas Publications.
13. Kilkpatrick, D.L. (2005). *Evaluating training Programmes: The four Levels*. San Francisco: Brrett-Kochler.
14. Kress, T. (2013). *Using Critical Research for Educational and Social Change*. New York & London: Routledge.
15. Lauren, B., Little, T. D., & Card, N. A. (2012). *Developmental Research Methods*. New York: The Guilford Press.
16. Martella, R. C., Nelson, J. R., Morgan, R. L., & Martella, N. E. (2013). *Understanding and Interpreting Educational Research*, New York: Routledge Guilford Press
17. Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research- A Philosophic and Practical Guide*. London: The Falmer Press.
18. Miller, S. A. (2007). *Developmental Research Methods*. New Delhi: Sage Publications.
19. Opie, C. (2004). *Doing Educational Research: A Guide for First time researchers*. New Delhi: Vistar Publications.
20. Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods*. C.A: Sage Publications.

21. Petscher, Y., Schatschneider, C., & Compton, D. L. (2013). Applied Quantitative Analysis in Education and the Social Sciences. New York & London: Routledge
22. Reason, P., & Bradbury, H. (Eds) (2006). Handbook of action research: Concise paperback edition. CA: Sage Publications.
23. Scott, D., & Usher, R. (1996). Understanding Educational Research. New York: Routledge.
24. Tolmie, A., McAteer, E., & Muijs, D. (2012). Quantitative Methods in Educational and Social Research Using SPSS. Maidenhead:Open University Press
25. Wellington, J. (2015). Educational Research. New Delhi: Bloomsbury Academic.
26. Weirisma. W., & Stephen G. (2009). Research methods in Education. New York: Pearson Education

**Web-resources**

<https://epgp.inflibnet.ac.in/>

**Course Code: LIS.708**

**Course Title: Research Competencies (Practical)**

**Course type: Skill Based**

**Total Hours: 30**

L	T	P	Credit
0	0	4	2

**Course Learning outcomes (CLO):**

After completion of the course the students will be able to:

CLO1: Develop skills set for identifying research gaps and articulating research problems.

CLO2: Understand practical aspects of research design.

CLO3: Select tools and methods in research design according to needs and circumstances.

CLO4: Design action and applied research.

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>6 Hours</b>	<b>Methods of Literature review in Research</b> Review of Literature: Concept and need, Methods, Structure of review of literature	<b>CLO1</b>
	<b>Reflection:</b> Scholars will learn identifying research gaps and articulating research problems.	
<b>II</b> <b>8 Hours</b>	<b>Practical aspects of Research Design</b> Formulate research questions, objectives and hypotheses. Select appropriate approach and design for different research topics. Design a research proposal	<b>CLO2</b>
	<b>Reflection:</b> Scholars will understand practical aspects of research design.	
<b>III</b> <b>8 Hours</b>	<b>Selection of Tools and Method in Research Design</b> Develop tools for research and standardise them. Ascertain the methods involved in data collection.	<b>CLO3</b>

	<b>Reflection:</b> Scholars will learn about selection of tools and methods in research design according to needs and circumstances.	
<b>IV</b> <b>8 Hours</b>	<b>Data Analysis</b> Analyse qualitative and quantitative data using appropriate techniques Conduct action research	<b>CLO4</b>
	<b>Reflection:</b> Scholars will gain proficiency in design of Action and Applied Research.	

### Transaction Mode

Lecture, Hand-On Lab, Recorded Lectures, You-tube, Invited Lectures.

### Evaluation criteria

Continuous Assessment: -50 Marks

- Attendance: 10
- Research Proposal: 15
- Skill Assessment (Review of Literature, Hypothesis, Data analysis skills.):25

End Term Assessment: -50 Marks

- Written Test: 30
- Viva Voce: 20

Evaluation will be done by course coordinator and two members from the department, nominated by HOD

### Suggested Readings

1. Geoffrey, M. (2019). Essential of Research design and methodology.
2. Harris, D. (2019). *Literature review and research design: A guide to effective research practice*. Routledge.
3. Kayı-Aydar, H. (2019). *Positioning theory in applied linguistics: Research design and applications*. Cham, Switzerland: Palgrave Macmillan.
4. Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health promotion practice*, 16(4), 473-475.
5. De Vaus, D. (2001). *Research design in social research*. Sage.
6. Hedrick, T. E., Bickman, L., & Rog, D. J. (1993). *Applied research design: A practical guide*. Sage Publications.
7. Miller, D. C., & Salkind, N. J. (2002). *Handbook of research design and social measurement*. Sage.
8. Schwartz-Shea, P., & Yanow, D. (2013). *Interpretive research design: Concepts and processes*. Routledge.



9. Leavy, P. (2017). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.
10. Hedrick, T. E., Bickman, L., & Rog, D. J. (1993). *Applied research design: A practical guide*. Sage Publications.
11. Sovacool, B. K., Axsen, J., & Sorrell, S. (2018). Promoting novelty, rigor, and style in energy social science: Towards codes of practice for appropriate methods and research design. *Energy Research & Social Science*, 45, 12-42.

2024 CDDC AACDLIS

**Course Code: LIS.709**

**Course Title: E-Research Tools and Techniques  
(practical)**

**Course type: Skill Based**

**Total Hours: 30**

L	T	P	Credit
0	0	2	1

**Course Learning outcomes (CLO):**

After completion of the course the students will be able to CLO1:

Develop skills set E-research and electronic resources.

CLO2: Utilise of various E-research tools.

CLO3: Understand various research metrics and its importance.

CLO4: Use Academic Social Networking Sites (SNSs) and Reference Management Systems.

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>6 Hours</b>	<b>E-research and electronic resources</b> E-research–concept, advantages, limitations Trends in E-research E-reference sources: Indexing and Abstracting databases, Shodhganga, NDLTD, E-encyclopaedias, citation databases etc.	<b>CLO1</b>
	<b>Reflection:</b> Scholars will learn about various aspects of E-Research and Electronic resources.	
<b>II</b> <b>8 Hours</b>	<b>E-research Tools</b> Online survey tools, Data Visualisation tools Search engines- Academic search engines, general search engines, metasearch engine Search strategies- search operators, alerting tools, RSS feeds etc.	<b>CLO2</b>
	<b>Reflection:</b> Scholars will understand practical aspects of E-tools for research.	
<b>III</b> <b>8 Hours</b>	<b>Metric Studies and Statistical Tools</b> Calculation of Impact Factor for journals, h-index and g-index for authors and institutions, SCImago Journal Rank (SJR) indicator. Analysing parametric and non-parametric data using SPSS, Statistical Tests.	<b>CLO3</b>

	<b>Reflection:</b> Scholars will learn about various research metrics, statistical tests and its importance.	
<b>IV 8 Hours</b>	<b>Academic SNSs and Reference Management Systems</b> Creating Google Scholar Profile, ORCID ID, ResearchGate and Microsoft Academic Search. Creating citation styles using Mendeley and Zotero reference management systems.	<b>CLO4</b>
	<b>Reflection:</b> Scholars will gain proficiency in creating SNS profiles and using it for research.	

**Transaction Mode:** Lecture, Hand-On Lab, Recorded Lectures, Youtube, Discussion following GitHub & Stackoverflow, Invited Lectures.

#### **Evaluation criteria**

Continuous Assessment: -50 Marks

- Attendance: 10
- Research Proposal: 15
- Skill Assessment (Review of Literature, Hypothesis, Data analysis skills.):25

End Term Assessment: -50 Marks

- Written Test: 30
- Viva Voce: 20

#### **Suggested Readings**

1. Anandarajan, M. (Ed.). (2010). E-research collaboration: Theory, techniques and challenges. Springer Science & Business Media.
2. Anderson, T. & Kanuka, H. (2003). E-research: methods, strategies, and issues, Allyn and Bacon
3. Jankowski, N. W. (Ed.). (2010). E-Research: Transformation in scholarly practice. Routledge.
4. Bryman, A. (2018). Social Research Methods. Oxford Publication, London
5. Glänzel, W., Moed, H. F., Schmoch, U., & Thelwall, M. (Eds.). (2019). Springer Handbook of Science and Technology Indicators. Springer Nature.
6. Neuman, W.L. (2010). Social Research Methods: Qualitative and Quantitative Approaches. 7. Pears, R., & Shields, G. J. (2019). Cite them right: the essential referencing guide. Macmillan International Higher Education.

**Course Code: LIS.751**

**Course Title: Research and Publication Ethics**

**Course type: Discipline**

**Total Hours: 30**

L	T	P	Credit
2	0	0	2

**Course Learning outcomes (CLO):**

After completion of the course the students will be able to CLO1:

Demonstrate Intellectual honesty and research integrity.

CLO2: Judge publication ethics, authorship and contributorship.

CLO3: Identify thrust areas of global research and Open access publications and initiatives.

CLO4: Analyse Research Metrics from an ethical point of view.

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>8 Hours</b>	<b>Philosophy and Ethics along with Scientific Conduct</b> Introduction to Philosophy: definition, nature and scope, content, branches Ethics: definition, moral philosophy, nature of moral judgements and reactions Ethics with respect to science and research Intellectual honesty and research integrity Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP) Redundant publications : duplicate and overlapping publications, salami slicing Selective reporting and misrepresentation of data	<b>CLO1</b>
	<b>Reflection:</b> Demonstration of Intellectual honesty and research integrity.	
<b>II</b> <b>7 Hours</b>	<b>Publication ethics</b> Publication ethics: definition, introduction and importance Best practices/ standards setting initiatives and guidelines: COPE, WAME, etc. Conflicts of interest	<b>CLO2</b>

	<p>Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types</p> <p>Violation of publication ethics, authorship and contributorship</p> <p>Identification of publication misconduct, complaints and appeals, Predatory publishers and journals</p>	
	<p><b>Reflection:</b> Scholars will understand practical aspects of E-tools for research.</p>	
<p><b>III</b></p> <p><b>8 Hours</b></p>	<p><b>Open Access Publishing &amp; Publication Misconduct</b></p> <p>Open access publications and initiatives</p> <p>SHERPA/RoMEO online resource to check publisher copyright &amp; self-archiving policies</p> <p>Software tool to identify predatory publication developed by SPPU</p> <p>Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.</p> <p>Group Discussions: Subject specific ethical issues, FFP, authorship; conflicts of interest; complaints and appeals: examples and fraud from India and abroad</p> <p>Software tools: Use of plagiarism software like Turnitin Urkund and other open source software tools</p>	<p><b>CLO3</b></p>
	<p><b>Reflection:</b> Ability to identify thrust areas of global research and Open access publications and initiatives along with misconduct.</p>	
<p><b>IV 7 Hours</b></p>	<p><b>Databases and Research Metrics</b></p> <p>Databases: Indexing databases; Citation database: Web of Science, Scopus etc.</p> <p>Research Metrics: Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score; Metrics: h-index, g-index, i10 index, altmetrics</p>	<p><b>CLO4</b></p>

	<b>Reflection:</b> Scholars will be able to analyse various research Databases' metrics from an ethical point of view.	
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### **Transaction Mode**

Lecture, Hand-On Lab, Recorded Lectures, Youtube, Discussion following Online Forums or Communities, Invited Lectures.

### **Suggested Readings**

1. Best J.W. (1999). Research in Education. New Delhi: Prentice Hall of India Pvt. Ltd.
2. Bogdon, R., & Biklen, S. K. (2008). Qualitative Research for Education: An Introduction to Theories and Practice. New Delhi: PHI learning
3. Borg, W.R., & Gall, M.D. (1983). Educational Research – An Introduction. New York: Longman, Inc.
4. Chandra, S. S., & Sharma, R.K. (2010). Research in education. New Delhi: Atlantic Publishers and Distributors (P) LTD..
5. Creswell, J. W. (2015). Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research. Boston: Pearson Publications.
6. Curtis, W., Murphy, M., N Shields, S. (2013). Research and Education. New York & London: Routledge
7. Gordon, P. (1996). A Guide to Educational Research. New York: Routledge
8. Kaul, L. (1984). Methodology of Educational Research. New Delhi: Vikas Publications.
9. Kilpatrick, D.L. (2005). Evaluating training Programmes: The four Levels. San Francisco: Brrett-Kochler.
10. Kress, T. (2013). Using Critical Research for Educational and Social Change. New York & London: Routledge.
11. Lauren, B., Little, T. D., & Card, N. A. (2012). Developmental Research Methods. New York: The Guilford Press.
12. Martella, R. C., Nelson, J. R., Morgan, R. L., & Martella, N. E. (2013). Understanding
13. Patton, M.Q. (2002). Qualitative Research and Evaluation Methods. C.A: Sage Publications.
14. Tolmie, A., McAteer, E., Muijs, D. (2012). Quantitative Methods in Educational and Social Research Using SPSS. Maidenhead:Open University Press
15. Wellington, J. (2015). Educational Research. New Delhi: Bloomsbury Academic.
16. Weirisma. W., & Stephen G. (2009). Research methods in Education. New York: Pearson Education

## PhD ELECTIVES

**Course Code: LIS.701**

**Course Title: R & Python programming for Data Science Applications in Research**

**Course type: Elective**

**Total Hours: 75**

**Course Learning outcomes (CLO):**

After completion of the course, scholars shall be able to:

CLO1: Learn the Various Concepts of Computer Programming

CLO2: Understand the Use of various Programming Languages and Its Syntaxes

CLO3: Learn about Various R and Python Packages for Data Science Applications in Research

CLO4: Writing Programs for Data Science Applications in Research

L	T	P	Credit
3	0	2	4

Units/Hours	Contents	Mapping with CLOs
<b>I</b>  <b>15 Hours</b>	<b>Introduction to Programming Languages and Its Use</b> Programming Languages: R, Python, C#, Kotlin etc. Applications of Programming Languages: Backend of SPSS. Programming Languages for Mobile, Web App Development.	<b>CLO1</b>
	<b>Reflection:</b> Scholars will learn various Concepts of Computer Programming.	
<b>II</b>  <b>25 Hours</b>	<b>Concepts and Syntaxes in R &amp; Python Programming</b> Installation of R, R-Studio, Syntaxes and Libraries in R. Installation of Python, IDEs for Python, Syntaxes of Python. Basic Concepts of Data Structures (DS), DS in R & Python. Basic Concepts of Simple Algorithms, Implementation in R & Python.	<b>CLO2</b>

	<b>Reflection:</b> Scholars will understand practical aspects of E-tools for research.	
<b>III 20 Hours</b>	<b>Data Science Applications in Various Disciplines</b> Arts & Humanities: Exploring Various Libraries, Packages & Projects, Research Papers, Case Studies. Sciences: Exploring Various Libraries, Packages & Projects, Research Papers, Case Studies. Social Sciences: Exploring Various Libraries, Packages & Projects, Research Papers, Case Studies. Data Visualisation: Exploring Various Libraries, Packages & Projects, Research Papers, Case Studies.	<b>CLO3</b>
	<b>Reflection:</b> Scholars will learn about Various R and Python Packages for Data Science Applications in research.	
<b>IV 15 Hours</b>	<b>Developing Programs for Data Analysis in Research</b> Version Control and IDEs Program Development for Research Data Analysis Developing R-Packages as Research Outcome Developing Python Projects in Research	<b>CLO4</b>
	<b>Reflection:</b> Scholars will gain proficiency in developing programs/packages for Data Science Applications in research.	

**Transaction Mode**

Lecture, Hand-On Lab, Recorded Lectures, Youtube, Discussion following GitHub & Stackoverflow, Invited Lectures.

**Evaluation criteria**

There shall be an end term evaluation of the course for 50 marks for a duration of 2 hours. Which will be a Development of a Program with Open Book/internet. The course coordinator shall conduct the evaluation.

**Suggested Readings**

- Peng, R. D. (2016). *R programming for data science* (pp. 86-181). Victoria, BC, Canada: Leanpub.



- Tippmann, S. (2015). Programming tools: Adventures with R. *Nature*, 517(7532), 109-110.
- Matloff, N. (2011). *The art of R programming: A tour of statistical software design*. No Starch Press.
- Brooker, P. D. (2019). *Programming with Python for Social Scientists*. Sage.
- Grus, J. (2019). *Data science from scratch: first principles with python*. O'Reilly Media.
- Chambers, J. M. (2008). *Software for data analysis: programming with R* (Vol. 2). New York: Springer.
- Kaya, E., Agca, M., Adiguzel, F., & Cetin, M. (2019). Spatial data analysis with R programming for the environment. *Human and ecological risk assessment: An International Journal*, 25(6), 1521-1530.
- Braun, W. J., & Murdoch, D. J. (2021). *A first course in statistical programming with R*. Cambridge University Press.
- Singh, A. K., & Allen, D. E. (2017). *R in Finance and Economics: A Beginner's Guide*.
- Fox, J., & Andersen, R. (2005). Using the R statistical computing environment to teach social statistics courses. *Department of Sociology, McMaster University*, 2-4.
- Edelman, A., Wolff, T., Montagne, D., & Bail, C. A. (2020). Computational Social Science. *Annual Review of Sociology*, 46.
- Igual, L., & Seguí, S. (2017). Introduction to data science. In *Introduction to Data Science* (pp. 1-4). Springer, Cham.

#### **Web Resources**

- <https://cran.r-project.org/>
- <https://www.rstudio.com/>
- <https://pypi.org/>
- <https://www.anaconda.com/>
- <https://github.com/>
- <https://datascience.stackexchange.com>
- <https://stackoverflow.com/questions/tagged/data-science>

**Course Code: LIS.702**

**Course Title: Research Trends in Information Sources, Services and Systems**

**Course type: Elective**

**Total Hours: 60**

L	T	P	Credit
4	0	0	4

**Learning Outcomes:**

After the Completion of course, the students will be able to:

CLO1: Learn about various types of information sources and its Management in the New Age.

CLO2: Conceptualise reference service, referral service and reference interview.

CLO3: Examine the different information services and products along with their recent trends and Challenges.

CLO4: Explore and Identify Problems and Research Question related to Information Sources, Services and Systems

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>14 Hours</b>	<b>Reference and Information Sources</b> Information Sources - Nature, Characteristics, Types and Formats. Documentary and Non-Documentary sources of information. Categories: Primary, Secondary and Tertiary information sources. Electronic Information Resources - Subject Gateways, Web Portals. Databases: Bibliographic, Numeric, Full text, Abstracting, Indexing and Citations Databases. Evaluation of Reference sources and Web resources.	<b>CLO1</b>
	<b>Reflection:</b> Compare different types of information sources.	

<p style="text-align: center;"><b>II</b></p> <p><b>16 Hours</b></p>	<p><b>Reference Services</b>  Reference Service: Concept, types, theories and trends.  Referral Service: Concept, types Reference interview.  Information Users and their Information Needs: Categories of information users, Ascertaining Users' Information need.  <b>Reflection:</b> Compare the different types of information needs of users.</p>	<p style="text-align: center;"><b>CLO2</b></p>
	<p><b>Reflection:</b> Compare the different types of information needs of users.</p>	
<p style="text-align: center;"><b>III</b></p> <p><b>14 Hours</b></p>	<p><b>Information Services and Products</b>  Information Services and products.: Concepts, definition, need and trends. Community Information Services.  Alerting Services: need, techniques and evaluation (CAS and SDI).  Bibliographic, referral, Inter Library Loan, document delivery and translation services.</p>	<p style="text-align: center;"><b>CLO3</b></p>
	<p><b>Reflection:</b> Discuss the practical aspects of different information services.</p>	
<p style="text-align: center;"><b>IV</b></p> <p><b>16 Hours</b></p>	<p><b>Information Systems and Services</b>  Study and explore National Information Systems.  Study and explore International Information Systems.  Study and explore Commercial Information Systems and Services.  Current Issues with various Information Systems' Services and products.</p>	<p style="text-align: center;"><b>CLO4</b></p>
	<p><b>Reflection:</b> Students will explore current Research trends, methods applied for building and assessing new/old services of Special Libraries, Information &amp; Knowledge Resource centres.</p>	

**Transaction Mode:** Lectures, PPT, Collective thinking, YouTube, <sup>1</sup>  
Discussion

### **Suggested Readings**

- Garson, G. D. (Ed.). (1999). *Information technology and computer applications in public administration: issues and trends*. IGI Global.
- Sweetland, J. H., & Cheney, F. N. (2001). *Fundamental reference sources*. American Library Association.
- Crawford, J. (2010). *Evaluation of library and information services*. Routledge.
- Farmer, L. (Ed.). (2007). *The human side of reference and information services in academic libraries: adding value in the digital world*. Elsevier.
- Foskett, D. J. (1967). *Information service in libraries*. Archon Book Hamden, Connecticut.
- Dowell, D. R., & Fourie, D. K. (2009). *Libraries in The Information Age: An Introduction And Career Exploration (Library And Information Science Text)*. Libraries Unlimited, New York.
- Singh, G. (2013). *Information sources, services and systems*. PHI Learning Pvt. Ltd..
- Katz, W. A. (2002). *Introduction to Reference Work: Reference services and reference practices*. McGraw Hill.
- Krishan, K. (2009). *Reference service*. Vikas Publishing House.
- Ranganathan, S. R. (1990). *Reference service*. Sarada Ranganathan Endowment for Library Science, Bangalore.
- Walford, A.J. (1996). *Guide to reference books*. Library Association, London.
- Woodsworth, A., & Williams II, J. F. (2018). *Managing the economics of owning, leasing and contracting out information services*. Routledge.

**Course Code: LIS.703**

**Course Title: Scholarly Communication and Research Evaluation**

**Course type: Elective**

**Total Hours: 60**

L	T	P	Credit
4	0	0	4

**Course Learning outcomes (CLO):**

After completion of the course, scholars shall be able to:

CLO1: Understand the concept of peer-review and scholarly communication.

CLO2: Understand the concept of Informetrics and related metrics.

CLO3: Understand and apply the Classical Laws of Bibliometrics.

CLO4: Understand the foundations of research evaluation.

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>15 Hours</b>	<b>Scholarly Communication</b> Concept of peer review process, Migration of peer reviewed journals from print to Web-based. Digital publishing -- different models. Creative Commons. Open Access Publishing and its impact.	<b>CLO1</b>
	<b>Reflection:</b> Discuss publishing models and impact of open access publishing.	
<b>II</b> <b>15 Hours</b>	<b>Informetrics and Scientometrics</b> Informetrics: Genesis, Scope and Definition. Bibliometrics: Tools and Techniques. Concept of Cybermetrics and Webometrics. Librametry: Introduction, Scope and Definition.	<b>CLO2</b>
	<b>Reflection:</b> Compare the different types of information needs of users.	
<b>III</b> <b>15 Hours</b>	<b>Classical Laws of Bibliometrics</b> Price's Theory: Genesis and concept. Zipf's Law: Theory and Applications. Lotka's Law: Theory and Applications. Bradford's Law of Scattering and its applications.	<b>CLO3</b>
	<b>Reflection:</b> Application of Classical Laws of Bibliometrics.	

<b>IV 15 Hours</b>	<b>Research Evaluation</b> Foundation of Research evaluation: Concept and Methods. Journal Level Metrics and Author Level Metrics. Citation Analysis World University Rankings: Introduction and Concept.	<b>CLO4</b>
	<b>Reflection:</b> Contemplate upon research evaluation and the use of various metrics.	

### Transaction Mode

Lectures, PPT, Collective thinking, YouTube, Discussion

### Evaluation criteria

There shall be an end term evaluation of the course for 50 marks for a duration of 2 hours. The course coordinator shall conduct the evaluation.

### Suggested readings

- Cronin, B. (2005). *The hand of science: Academic writing and its rewards*. Scarecrow Press.
- Leydesdorff, L. (2001). *The challenge of scientometrics: The development, measurement, and self-organisation of scientific communications*. Universal-Publishers.
- Rao, I. K. R. (2010). *Growth of literature and measures of scientific productivity: Scientometric models*. Ess Ess Publications.
- Smith, K. L., & Dickson, K. A. (2016). *Open access and the future of scholarly communication: policy and infrastructure* (Vol. 9). Rowman & Littlefield.
- Sooryamoorthy, R. (2020). *Scientometrics for the Humanities and Social Sciences*. Routledge.
- Sugimoto, C. (2016). *Theories of informetrics and scholarly communication*. De Gruyter.
- Thelwall, M. (2009). Introduction to webometrics: Quantitative web research for the social sciences. *Synthesis lectures on information concepts, retrieval, and services*, 1(1), 1-116.

### Web-based resources

- DORA Website (n.d). <https://sfdora.org/>
- Web of Science Websites (n.d). <https://clarivate.com/webofsciencegroup/solutions/web-of-science/>
- Lib Guides of JCU (n.d). <https://libguides.jcu.edu.au/researchindicators/snip-and-sjr>
- NIRF Website (n.d.). <https://www.nirfindia.org/Home>

2024 BOS (S) Security Operations

**Course Code: LIS.704**

**Course Title: Information Communication and Management of Library and Information Centres**

**Course type: Elective**

**Total Hours: 60**

L	T	P	Credit
4	0	0	4

**Course Learning outcomes (CLO):**

After completion of the course, scholars shall be able to:

CLO1: Understand the concept of information communication.

CLO2: Understand the process of information transfer

CLO3: Apply various library management approaches

CLO4: Understand the role of human resources management in libraries and information centres

Units/Hours	Contents	Mapping with CLOs
<b>I</b> <b>15 Hours</b>	<b>Information Communication</b> Information: Concept and Generation. Information Media and Diffusion. Communication: Concept and Process. Communication Cycle, Types and Models of Communication.	<b>CLO1</b>
	<b>Reflection:</b> Compare the models of information communication.	
<b>II</b> <b>15 Hours</b>	<b>Transfer of Information and Information seeking behaviour</b> Information Transfer: Concept and Models; Impact on Library and Information Science Professionals/Users; Information Seeking Behaviour: Concept and Methods Models and Methods of Evaluation.	<b>CLO2</b>
	<b>Reflection:</b> Discuss the modalities in information transfer.	
<b>III</b> <b>15 Hours</b>	<b>Foundations of Library Management</b> Management: Concept Approaches in Library and Information Centres- Classical, Scientific, Behavioural, Modern Systems Approach; Marketing of Library and Information Products and Services	<b>CLO3</b>



	<b>Reflection:</b> Compare various approaches in library management.	
<b>IV 15 Hours</b>	<b>Human Resources Management in Libraries</b> Human Resource Management in Libraries in Information Centres- Concepts, and Application, Interpersonal Relationship, Leadership and Personality Development	<b>CLO4</b>
	<b>Reflection:</b> Application of HRM in various aspects of library management.	

**Transaction Mode**

Lectures, PPT, Collective thinking, YouTube, Discussion

**Evaluation criteria**

There shall be an end term evaluation of the course for 50 marks for a duration of 2 hours. The course coordinator shall conduct the evaluation.

2024BCDDCSAACBLS

**Course Code: LIS.704**  
**Course Title: Knowledge Management**  
**Total Hours: 60 Hours**  
**Course Learning Outcomes**

L	T	P	Cr
4	0	0	4

After Successful Completion of the course, the students will be able to:

- CLO1: Conceptualise knowledge management and knowledge economy
- CLO2: Determine the various strategies deployed in knowledge management
- CLO3: Examine the tools used in knowledge management systems.
- CLO4: Justify the importance of Knowledge management in libraries and information centres

Unit/ Hours	Content	Mapping with CLOs
<b>Unit I/ 15 Hours</b>	<b>Knowledge Management: Basics:</b> KM Meaning, Types of knowledge, Principles, Knowledge Economy: Characteristics features, Need Difference between Information Management and Knowledge Management. <b>Reflection:</b> Understand the relationship between different concepts of Knowledge Management.	<b>CLO 1</b>
<b>Unit II/ 15 Hours</b>	<b>Knowledge Management:</b> Capturing tacit knowledge – methods. Knowledge codification – tools and procedures. Knowledge Mapping; Knowledge testing; Knowledge transfer. <b>Reflection:</b> Comprehend the tasks associated with knowledge management.	<b>CLO 2</b>
<b>Unit III/ 15 Hours</b>	<b>Knowledge Management System and Tools:</b> Knowledge management tools, Data mining. Managing knowledge workers. <b>Reflection:</b> Understand the tools of knowledge management.	<b>CLO 3</b>
<b>Unit IV/ 15 Hours</b>	<b>Knowledge Management Portals:</b> Knowledge Management in Library and Information Centres. Knowledge creation and knowledge architecture – Nonaka’s model, KM Systems <b>Reflection:</b> Understand the application of knowledge management in libraries and information centres.	<b>CLO 4</b>

**Transaction Mode:** Lectures, PPT, Collective thinking, YouTube, Discussion

### **Suggested Readings**

1. Anderson, Paul. (2012). *Web 2.0 and Beyond: Principles and Technologies*. CRC Press
2. Awad, Elias M (2011). *Knowledge Management*. Prentice Hall India.
3. Cappelli, Peter. (2010). *The performance effects of it-enabled knowledge management practices*. Cambridge.
4. Christee Gabour Atwood. (2009). *Knowledge Management Basics*. ASTD Pess.
5. Dalkir, Kimiz & Liebowitz, Jay (2011). *Knowledge Management Theory & Practice*. MIT Press
6. Easterby-Smith, Mark & Lyles, Marjorie A. (2011). *Handbook of organizational learning and knowledge management*. Wiley.
7. Hislop, Donald. Ed. 3<sup>rd</sup> (2013). *Knowledge Management in organization*. Oxford.
8. Holsapple, Clyde. (2013). *Handbook on Knowledge Management 1: Knowledge*
9. Jennex, Murray E. (2008). *Knowledge Management: Concepts, Methodologies, Tools and Applications*. Information Science Reference.
10. Liebowitz, Jay (2012). *Knowledge Management Handbook: Collaboration and Social Matters*. Springer.
11. Mohiuddin, M., Halilem, N., Kobir, A., & Yuliang, C. (Eds.). (2017). *Knowledge Management Strategies and Applications*.
12. Nazim, M., & Mukherjee, B. (2016). *Knowledge management in libraries: concepts, tools and approaches*. Chandos Publishing.
13. Rao, M. (2012). *Knowledge management tools and techniques*. Routledge.

**Course Code: LIS.711**

**Course Title: Information Literacy and User Studies**

**Total Hours: 60 Hours**

**Course Learning Outcomes**

L	T	P	Cr
4	0	0	4

After Successful Completion of the course, the students will be able to:

CLO 1: Develop skills in understanding Information Literacy

CLO 2: Understand and conduct User Studies in Information Research

CLO 3: Learn about Information Seeking Behavior and factors influencing Information Seeking Behaviour

CLO 4: Understand and address National Programmes in Information Literacy, information needs of diverse communities and contribute to social development.

Unit/Hour	Content	Mapping with CLOs
<b>I/ 17 Hours</b>	Information Literacy: Concepts and models of information literacy; Information literacy assessment methods; Information literacy programmes and initiatives. Overview of communication channels (Traditional and Digital); Selecting appropriate communication channels for different contexts; Evaluating the effectiveness of communication channels.	<b>CLO 1</b>
	<b>Reflection:</b> Learning concepts and models of Information literacy and various communication channels.	
<b>II/ 15 Hours</b>	User Studies in Information Research: Methods for conducting User Studies (surveys, interviews, focus groups, etc.); Overview of research paradigms and approaches; Importance of research methodologies; Analyzing and interpreting user study data.	<b>CLO 2</b>
	<b>Reflection:</b> Understand User Studies concept and methods for conducting User Studies research	
<b>III 14 Hours</b>	Information Seeking Behaviour: Theories of information seeking behavior; Factors influencing information seeking behavior; Ethnographic methods in studying information behaviour.	<b>CLO 3</b>

	<b>Reflection:</b> Understand various theories of Information seeking behaviour of information users and the factors influencing them	
<b>IV 14 Hours</b>	National Programmes in Information Literacy: Role of Information in rural development; Participatory approaches in rural development research; Case studies on successful rural development initiatives; Empowering marginalized groups through Information and Communication Technology (ICT)	<b>CLO 4</b>
	<b>Reflection:</b> Understand and address information needs of diverse communities and contribute to social development.	

**Transaction Mode:** Lectures, PPT, YouTube, Discussion

**Suggested Readings:**

Andal, N. (2005). *Communication theories and models*. Mumbai: Himalaya Publishing House.

Bilawar & Pujar (2011). *Information Literacy Models: Correlation and Conceptual Model for Higher Education*. In *Towards Building a knowledge Society: Library as Catalyst for Knowledge Discovery and Management* (pp. 388-396). Ahmedabad: International Caliber INFLIBNET Center.

Creswell, / . W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Debus, M. (1990). *Methodological Review: A Handbook for Excellence in Focus Group Research*. Washington D.C.: Academy for Educational Development

Devika, R. (2017). CONCEPT AND VIEWS ON USER STUDY. *Shanlax International Journal of Arts, Science & Humanities*, 252-259.

Driscoll, D. L. (2011). *Introduction to Primary Research: Observations, Surveys, and Interviews*. In L. C. (Ed.), *Writing spaces : readings on writing* (pp. 153-174). Anderson, South Carolina: Parlor Press.

Bauer, M. (2018). *Ethnographic study of business students' information-seeking behavior: Implications for improved library practices*. *Journal of Business & Finance Librarianship*, 1-10.  
10.1080/08963568.2018.1449557

- Case, D. O. (2006). *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior (Library and Information Science Series)*. Academic Press Inc;.
- Edith D. de Leeuw, J. H. (2008). *International Handbook of Survey Methodology*.
- Igwenagu, C. (2016). *Fundamentals of research methodology and data collection*. LAP Lambert Academic Publishing.
- Forest Woody Horton, J. (2007). *Understanding Information Literacy: A Primer*. Paris: UNESCO.
- GHOSH, S. B. and Kumar Das, Anup (2009). *Information Literacy and Emerging Knowledge Economy in India*.
- Goodman, V. D. (2011). *Applying Ethnographic Research Methods in Library and Information Settings*. De Gruyter Saur.
- Hjørland, B. (2000). Information seeking behaviour: What should a general theory look like? *New Review of Information Behaviour Research*.
- Information Literacy Competency Standards for Higher Education*. (2000). Chicago, Illinois: American Library Association
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kumar, R. (2011). *RESEARCH METHODOLOGY: a step-by-step guide for beginners*. SAGE Publications.
- Kundu, D. K. (2020). Models of Information Seeking Behaviour: A Comparative Study. *Journal of Critical Library and Information Studies*, 393-405.
- Lynn, P. (2008). The Problem of Nonresponse. In J. J. Edith D. de Leeuw, *International Handbook of Survey Methodology* (pp. 35-55). Routledge
- Mohammed Nasser, A.-S. (2015). *Information Seeking Behavior and Technology Adoption: Theories and Trends*.
- MUKHRJEE, D. B. (n.d.). *Models of Information Seeking Behavior*.
- Punch, K. F. (2014 ). *Introduction to Social Research - Quantitative and Qualitative Approaches*. SAGE Publications Ltd.
- Sarman & Aggarwal, D. (2017). Promotion of information literacy instruction: With special reference to government of India. *International Journal of Academic Research and Development*, 89-92.

Omerovic, S. & Milan Milutinovic, S. S. (2010). Methodology for Written and Oral Presentation of Research Results. *Journal of Professional Issues in Engineering Education and Practice*, 112-117

Shantadevi, T. (n.d.). *Information Needs And Seeking Behavior - A Practical Approach*

Thomas, S. & Mullaney, C. R. (2022). *Where Research Begins*

Wilson, T. (2006). On user studies and information needs. *Journal of Documentation*, 658-670. 10.1108/00220410610714895

2024 CDDC AACDLIS

L	T	P	Credit
0	0	4	2

**Course Code: LIS.752**

**Course Title: TEACHING ASSISTANTSHIP**

**Course type: Core Course**

**Total Hours: 30**

**Course Learning Outcome (CLO):**

At the end of this skill development course, the scholars shall be able to

- (1) familiarise themselves with the pedagogical practices of effective classroom delivery and knowledge evaluation system
- (2) manage large and small classes using appropriate pedagogical techniques for different types of content

**Activities and Evaluation:**

- The scholars shall attend Master degree classes of his/her supervisor to observe the various transaction modes that the supervisor follows in the classroom delivery or transaction process one period per week.
- The scholars shall be assigned one period per week under the direct supervision of his/her supervisor to teach the Master degree students adopting appropriate teaching strategy(s).
- The scholars shall be involved in the examination and evaluation system of the Master degree students such as preparation of questions, conduct of examination and preparation of results under the direction of the supervisor.
- At the end of the semester, the supervisor shall conduct an examination of teaching skills learned by the scholar as per the following **evaluation criteria:**
- The scholars shall be given a topic relevant to the Master degree course of the current semester as his/her specialization to prepare lessons and deliver in the classroom before the master degree students for one hour (45 minutes teaching + 15 minutes interaction).



- The scholars shall be evaluated for a total of 50 marks comprising *content knowledge* (10 marks), *explanation and demonstration skills* (10 marks), *communication skills* (10 marks), *teaching techniques employed* (10 marks), and classroom interactions (10).

**Course Code: UNI.753**

**Course Title: Curriculum, Pedagogy and Evaluation**

**Course type: Core Course**

**Total Hours: 15**

L	T	P	Credit
1	0	0	1

**Course Learning outcomes (CLO):**

After completion of the course, scholars shall be able to:

CLO1: analyse the principles and bases of curriculum design and development

CLO2: examine the processes involved in curriculum development

CLO3: develop the skills of adopting innovative pedagogies and conducting students' assessment

CLO4: develop curriculum of a specific course/programme

Units/Hours	Contents	Mapping with CLOs
I 4 Hours	<b>Bases and Principles of Curriculum</b> Curriculum: Concept and Principles of curriculum development, Foundations of Curriculum Development. Types of Curriculum Designs- Subject centred, learner centred, experience centred and core curriculum. Designing local, national, regional and global specific curriculum. Choice Based Credit System and its implementation.	CLO1
II 4 Hours	<b>Curriculum Development</b> Conceptual understanding of Pedagogy. Pedagogies: Peeragogy, Cybergogy and Heutagogy with special emphasis on Blended learning, flipped learning, Dialogue, cooperative and collaborative learning Three e- techniques: Moodle, Edmodo, Google classroom	CLO2

<p style="text-align: center;"><b>III</b> <b>3 Hours</b></p>	<p><b>Curriculum and Pedagogy</b> Assessment Preparation: Concept, purpose, and principles of preparing objective and subjective questions.</p>	<p style="text-align: center;"><b>CLO3</b></p>
	<p>Conducting Assessment: Modes of conducting assessment – offline and online; use of ICT in conducting assessments. Evaluation: Formative and Summative assessments, Outcome based assessment, and scoring criteria.</p>	
<p style="text-align: center;"><b>IV 4 Hours</b></p>	<p><b>Learners' Assessment</b> Assessment Preparation: Concept, purpose, and principles of preparing objective and subjective questions. Conducting Assessment: Modes of conducting assessment – offline and online; use of ICT in conducting assessments. Evaluation: Formative and Summative assessments, Outcome based assessment, and scoring criteria.</p>	<p style="text-align: center;"><b>CLO4</b></p>

**Transaction Mode**

Lecture, dialogue, peer group discussion, workshop

**Evaluation criteria**

There shall be an end term evaluation of the course for 50 marks for a duration of 2 hours. The course coordinator shall conduct the evaluation.

**Suggested Readings**

- Allyn, B., Beane, J. A., Conrad, E. P., & Samuel J. A., (1986). *Curriculum Planning and Development*. Boston: Allyn & Bacon.
- Brady, L. (1995). *Curriculum Development*. Prentice Hall: Delhi. National Council of Educational Research and Training.
- Deng, Z. (2007). Knowing the subject matter of science curriculum, *Journal of Curriculum Studies*, 39(5), 503-535. <https://doi.org/10.1080/00220270701305362>
- Gronlund, N. E. & Linn, R. L. (2003). *Measurement and Assessment in teaching*. Singapore: Pearson Education
- McNeil, J. D. (1990). *Curriculum: A Comprehensive Introduction*, London: Scott, Foreman/Little

- Nehru, R. S. S. (2015). *Principles of Curriculum*. New Delhi: APH Publishing Corporation.
- Oliva, P. F. (2001). *Developing the curriculum* (Fifth Ed.). New York, NY: Longman
- Stein, J. and Graham, C. (2014). *Essentials for Blended Learning: A Standards-Based Guide*. New York, NY: Routledge.

#### **Web Resources**

- [https://www.westernsydney.edu.au/\\_data/assets/pdf\\_file/0004/467095/Fundamentals\\_of\\_Blended\\_Learning.pdf](https://www.westernsydney.edu.au/_data/assets/pdf_file/0004/467095/Fundamentals_of_Blended_Learning.pdf)
- <https://www.uhd.edu/academics/university-college/centersoffices/teaching-learning-excellence/Pages/Principles-of-a-FlippedClassroom.aspx>
- <http://leerwegdialoog.nl/wp-content/uploads/2018/06/180621-Article-The-Basic-Principles-of-Dialogue-by-Renate-van-der-Veen-andOlga-Plokhooij.pdf>

2024 CDDC AAGDLS