

DSE 3

Artificial Intelligence and Libraries

60 Hours
(45hrs Lect. + 15hrs Tut.)

Course Title & Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-Requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
DSE 3: Artificial Intelligence and Libraries	4	3	1	0	BLISc	-

Course Objectives

This course explores the transformative role of Artificial Intelligence in library environments, covering fundamental branches like Machine Learning and Natural Language Processing. Students will learn to implement AI-powered search, metadata generation, and virtual reference services while critically addressing algorithmic bias, data privacy, and the evolving competencies required for AI-augmented knowledge services.

Learning Outcomes

After completing this course, students will be able to:

- ☞ Explain the fundamental concepts, history, and branches of Artificial Intelligence, and relate their relevance to Libraries.
- ☞ Identify and evaluate AI applications in library services, including cataloguing, reference, search systems, and recommender technologies.
- ☞ Demonstrate practical skills in using AI-based tools for metadata creation, content analysis, plagiarism detection, and bibliometric analysis in library workflows.
- ☞ Critically assess ethical, legal, and policy implications of AI in libraries, and propose strategies for responsible AI adoption.

UNIT I: Fundamentals of Artificial Intelligence **10 Hours**

- ☞ Definition, Scope, and Characteristics of AI
- ☞ Branches of AI: Machine Learning, Natural Language Processing (NLP)
- ☞ AI Trends in Global and Indian Contexts

UNIT II: AI Applications in Library and Information Services **13 Hours**

- ☞ Artificial Intelligence based Integrated Library Management Systems (ILMS)
- ☞ AI in Cataloguing and Metadata Generation
- ☞ AI-Powered Search and Discovery Systems
- ☞ Natural Language Processing for Information Retrieval
- ☞ Chatbots and Virtual Reference Services
- ☞ AI-Based Recommendation Systems

UNIT III: AI Tools for Libraries **12 Hours**

- ☞ AI-Driven Tools for Librarians: Cataloguing & Metadata, Text and Content Analysis, Plagiarism Detection, Image & OCR Tools
- ☞ AI in Digital Preservation and Archive Management
- ☞ AI-Powered Bibliometric and Scientometric Analysis

UNIT IV: Challenges, Ethics, and Future of AI in Libraries **10 Hours**

- ☞ Data Privacy and Security in AI-Powered Systems
- ☞ Bias and Fairness in AI Algorithms
- ☞ Skills and competencies for Library and Information Science Professionals
- ☞ Future trends: Generative AI, Semantic Web, and AI-Augmented Knowledge Services.

Essential Readings

- ☞ ANDERSON (CB) and FISHER (DH). Artificial intelligence for academic libraries. London, Routledge. 2025.
- ☞ IFLA. Artificial intelligence and libraries. The Hague, International Federation of Library Associations and Institutions. 2020.

- ☞ JONES (R). AI and machine learning for librarians. Chicago, ALA Editions. 2022.
- ☞ KHAMIS (I). Applications of artificial intelligence in libraries. Hershey, IGI Global Scientific Publishing. 2024.
- ☞ LUND (BD). Artificial intelligence for libraries. London, Bloomsbury Publishing. 2025.
- ☞ MEESAD (P) and MINGKHWAN (A). Libraries in transformation. Cham, Springer Nature Switzerland. 2024.

Suggested Readings

- ☞ CHOI (Y) and YI (H). Artificial intelligence in libraries: Applications and challenges. Journal of academic librarianship. 2021.
- ☞ NORTON (A), SACCO (K) and ARMS (K). Navigating AI in academic libraries: Implications for academic research. Hershey, IGI Global Scientific Publishing. 2025.
- ☞ ROSS (M). AI libraries. Oslo, Publifys AS. 2025.
- ☞ SAHOO (S). AI-driven information management: Strategies for libraries in the digital era. New Delhi, IIP Iterative International Publishers. 2025.