



MAHATMA GANDHI UNIVERSITY
PURBA MEDINIPUR-721628, WEST BENGAL

Syllabus

ARTIFICIAL INTELLIGENCE
IN DIGITAL LEARNING

SYLLABUS FOR POST-GRADUATE PROGRAMME

Based on NEP 2020

MAHATMA GANDHI UNIVERSITY
Purba Medinipur, 721628
West Bengal, India

[w.e.f. Academic Session 2026-2027]

1st Year of PG Curriculum Structure for 2 Year PG Programmes (3+2)

Semester	Course Type	Course Code & Level	Name of the Course	Credits (L-T-P)	IA	End Sem. Exam	Full Marks
I	Minor Course	PG2 AIDL 1021 (300-399)	Artificial Intelligence in Basic Digital Learning**	4 (3-1-0)	10	40	50

Semester	Course Type	Course Code & Level	Name of the Course	Credits (L-T-P)	IA	End Sem. Exam	Full Marks
II	Minor Course	PG2 AIDL 2021 (300-399)	Artificial Intelligence in Advanced Digital Learning**	4 (3-1-0)	10	40	50

** Students from other disciplines may choose this course as a minor course.

Details of the Courses

Semester-I

PG2 AIDL 1021: Artificial Intelligence in Basic Digital Learning

Full Marks: 50

COURSE OBJECTIVES:

1. Acquire an understanding of what AI is and its functioning.
2. Understand how AI technology is implemented in education.
3. Give students the skills they need to use generative AI in the classroom.
4. Examine the ethical issues and social implications of AI use in classrooms.

COURSE OUTCOMES:

At the conclusion of the course, the students should be able to:

CO1: Understand the basic principles of AI and ML.

CO2: Get to know the ways AI can be implemented in education, such as personalized learning and advanced tutoring systems.

CO3: Generate working prompts for lessons and assessments.

CO4: Analyse an AI system with respect to its accuracy, bias, privacy, and educational value.

CO5: Develop a proposal for the proper use of AI tools in schools and classrooms.

SYLLABUS:

Unit I: Foundations of AI

Overview of Artificial intelligence (AI) - Problems of AI, AI techniques. How machines learn: supervised, unsupervised, and reinforcement learning (conceptual). Data, training, and models. Why quality of data matters. PEAS (Performance measure, Environment, Actuators, Sensors) Representation, Examples of PEAS with Educational Contexts. Overview of machine learning techniques commonly used in education applications. (10 L)

Unit II: AI in Modern Education System

Why AI in Education? Transforming Teaching Patterns: Personalized Learning, Smart Content Creation, Automated Administrative Operations, AI in Classroom for Adaptable Access, Curriculum Planning and Development, Self Directed Learning, Closing the skill gap. Examples of AI-based tools currently used in education to illustrate these transformations (e.g., adaptive learning platforms, AI teaching assistants), Intelligent Tutoring System, Assessment Automation, adaptive assessments and their role in personalized learning, teacher–student collaboration, Role of AI in teacher professional development and skill-building, Automated grading, feedback, and plagiarism/AI-text detection (and its limits). (15 L)

Unit III: Applications

AI is natural language processing (NLP), Scope of NLP applications (e.g., essay grading, language translation for global classrooms), ChatGPT, Gemini, Claude and other conversational AI's role in providing 24/7 student support and assistance, creating lesson plans using AI, Generating study materials, AI-assisted presentation creation, AI-based coding assistance. (10 L)

Unit IV: EMIS and LMS

Data analytics in Education Management Information Systems (EMIS) and the evolution to Learning Management Systems (LMS), Case studies of colleges/universities using EMIS and LMS with AI

integration for data-driven decision making, AI-powered LMS that provide real-time insights and automation. (10 L)

Unit V: Ethics, Policy, and Equity

Bias and fairness in algorithms, Student data privacy and consent, Digital divide and access inequality, Teacher and student agency and the risk of over-reliance, Legal implications and data protection regulations (e.g., GDPR compliance in educational AI systems), AI transparency and explain ability to ensure ethical usage in educational systems, Case studies of AI failures and successes in education. (5 L)

References/ Suggested Readings:

1. Miao, F.; Holmes, W.; Huang, R.; Zhang, H. *AI and Education: A Guidance for Policymakers*; UNESCO Publishing: Paris, France, 2021.
2. Luckin, R., Holmes, W., Griffiths, M. & Forcier, L.B. *Intelligence Unleashed: an argument for AI in Education*. London: Pearson, 2016
3. Montebello, M. (2017). *AI injected e-learning: the future of Online Education*. Berlin, Germany: Springer.
4. Dr. R. D. Padmavathy, Dr. Raju Talreja *AI IN EDUCATION: TRANSFORMING LEARNING AND TEACHING*, Redshine Publication, 2024

Semester-II

PG2 AIDL 2021: Artificial Intelligence in Advanced Digital Learning Full Marks: 50

To be Updated Soon