

Course Code	Course Name	Credits
26RD504	AI in Rural Development	04

Course Objectives

1. To understand the basic concepts of Artificial Intelligence.
2. To provide students a chance to analyse rural development issues using digital technologies.
3. To acquire skill of apply AI tools in agriculture, education and infrastructure

Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

1. Students will be able to explain AI technologies and applications.
2. Students will able to identify rural problems where AI can be applied.
3. Students will able to analyse data related to agriculture and rural economy.

Unit 1 – Introduction to Artificial Intelligence

Meaning, characteristics, importance, goals, types of AI; History and evolution of AI; Basic AI technologies: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision

Unit 2 – AI in Rural Education

AI-powered learning platforms; Personalized education using AI; Smart classrooms in rural schools; AI-based language translation tools; Digital learning for rural youth

Unit 3 - AI in Agriculture and Food Security

Precision agriculture using AI; Crop yield prediction using machine learning; AI-based soil and weather analysis; Smart irrigation systems

Unit 4- AI in Rural Infrastructure and Smart Villages

Smart village concept; AI for rural transportation planning; AI for electricity and renewable energy management; AI-based waste management systems; AI-supported rural housing planning

Unit 5 – Future of AI in Rural Development

Transforming Governance with AI and DPI (Digital Public Infrastructure); India's AI Revolution in Rural Development; Artificial Intelligence (AI) Transforming Rural India; Role of AI in future

Reference

1. Russell & Norvig (2010). Artificial Intelligence: A Modern Approach, Third Edition
2. Kumar, A., Kumar, V., & Kumar, M. (2025). The Intelligent Machine: An Introduction to Artificial Intelligence.
3. Singh, B., Sharma, H., Saryam, M., & Jadia, M. (2025). Smart Agriculture: Merging Innovation, Efficiency and Sustainability
4. Prabhakar. A.C., Yu, P. & Wong, S. K. M. (2024). AI Strategies for Social Entrepreneurship and Sustainable Economic Development

COs and Bloom's Taxonomy Level (BTL) Mapping

COs and Bloom Taxonomy Mapping-26RD504		
Course Outcomes	On successful completion of this course, student will be able to	BTL
CO1	Identify and define the role of AI in rural development, including characteristics, importance, goal, history and fundamental AI technologies	K1, K2
CO2	Apply AI tools and machine in rural education development	K3
CO3	Analyze agricultural and food security rural data sets to optimize resource allocation, predict weather patterns, and monitor infrastructure	K4
CO4	Evaluate the efficiency, societal impact, and implications of AI in rural infrastructure and smart village development	K5
CO5	Design context-specific, people-centric AI solutions to address socioeconomic gaps and decentralize local governance	K6

BTL: K1 and K2- Remembering and Understanding, K3- Applying, K 4- Analyse, K5- Evaluate and K 6 – Create

Relationship Matrix-26RD504													
Course Outcomes	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)						Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	
CO1	3	3	3	2	3	2	3	3	3	2	3	2	2.6
CO2	3	3	3	2	3	3	3	3	3	2	3	3	2.8
CO3	3	3	3	3	3	3	3	3	3	2	3	3	2.9
CO4	2	3	3	2	3	3	3	3	3	2	3	3	2.7
CO5	2	3	3	2	3	3	3	3	3	2	3	3	2.7
Total													2.74

Mean Score: 3- High, 2- Medium/Moderate, 1-Low

