

Course Code	Course Name	Credits
26ED509	EMERGING TECHNOLOGIES: AI, VR, AND THE FUTURE OF EDUCATION	04

Course Objectives

The course aims to,

- ✓ Develop conceptual understanding of emerging technologies in education.
- ✓ Familiarize learners with AI, VR, and AR applications in teaching-learning processes.
- ✓ Enhance skills in integrating digital tools for effective pedagogy.
- ✓ Promote critical evaluation of technology-enabled education systems.
- ✓ Encourage innovation, creativity, and ethical use of technology.
- ✓ Prepare learners for future educational transformations and digital leadership.

Learning Outcomes

After the completion of the course, the Learner will be able to,

- ❖ Explain key concepts of AI, VR, AR, and digital learning ecosystems.
- ❖ Apply emerging technologies in instructional design and pedagogy.
- ❖ Analyze the impact of technology on learners, teachers, and institutions.
- ❖ Evaluate ethical, social, and policy implications of educational technologies.
- ❖ Design innovative technology-integrated learning environments.
- ❖ Demonstrate digital competence and lifelong learning skills.

Unit 1 - Foundations of Emerging Technologies in Education (12 hours)

Concept of Educational Technology in the digital era-Evolution of technology in education (ICT → AI-based learning) -NEP 2020 and digital transformation in education-Role of technology in personalized and inclusive learning

Unit 2 – Artificial Intelligence in Education (12 hours)

Fundamentals of AI and Machine Learning-Overview of AI, VR, AR, Machine Learning, and Big Data-AI applications in education: Intelligent tutoring systems, Chatbots and virtual assistants, Learning analytics and adaptive learning- Opportunities and challenges of AI in education

Unit 3 - Virtual Reality (VR), Augmented Reality (AR), and Immersive Learning (12 hours)

Concepts of VR, AR and Mixed Reality-Immersive learning environments-Applications in classrooms (simulations, virtual labs, field experiences)-Benefits and limitations of immersive technologies

Unit 4 – Digital Pedagogy and Technology Integration (12 hours)

Technology-integrated teaching models (TPACK, SAMR)-Instructional design for digital learning-Blended learning, flipped classroom, MOOCs-Assessment in digital environments.

Unit 5 - Ethics, Policy, and Future of Education (12 hours)

Ethical issues in AI: bias, privacy, data security-Digital divide and inclusive education-Policy perspectives: NEP 2020, global trends-Future of education: smart classrooms, metaverse learning

Reference Books:

1. Artificial Intelligence in Education: The Intersection of Technology and Pedagogy – Peter Ilic, Imogen Casebourne & Rupert Wegerif
2. Artificial Intelligence Technologies for Education: Advancements, Challenges and Impacts – Yu Liang, Wenjun Wu & Ying Li
3. Creative Applications of Artificial Intelligence in Education – Alex Urmeneta & Margarida Romero
4. Computational Intelligence in Digital Pedagogy – Arpan Deyasi et al.
5. Teaching in a Digital Age – Tony Bates
6. Learning with AI: The Future of Education – Wayne Holmes, Maya Bialik & Charles Fadel
7. Virtual Reality in Education: Breakthroughs in Research and Practice – Management Association, Information Resources

Alignment with NEP – 2020

The proposed course **Emerging Technologies: AI, VR, and the Future of Education (26ED509)** is designed in alignment with the transformative vision of the National Education Policy 2020, emphasizing digital innovation, future readiness, and technology-integrated learning. The course reflects a progressive, skill-oriented, and outcome-based framework suitable for contemporary education systems.

1. Promotes the use of AI, VR, AR, and emerging technologies in teaching-learning processes
2. Encourages creativity, innovation, and preparedness for future educational ecosystems
3. Develops digital, analytical, and problem-solving competencies
4. Enhances learning through simulations, virtual environments, and interactive platforms
5. Promotes awareness of AI ethics, data privacy, and responsible digital citizenship
6. Prepares learners for global digital environments and continuous professional development

COs and Bloom's Taxonomy Level (BTL) Mapping for 26ED509

Course Outcomes	On successful completion of the course, the students will be able to	BTL
CO1	Explain concepts, types, and applications of AI, VR, and emerging technologies in education	K1 & K 2
CO2	Apply digital tools and AI-based platforms for teaching-learning processes	K 3
CO3	Analyze the impact of emerging technologies on educational practices and stakeholders	K 4
CO4	Evaluate ethical, policy, and societal implications of AI and digital education	K 5
CO5	Design innovative, technology-integrated learning environments and solutions	K 6

Bloom's Taxonomy Level (BTL):- K1 and K2 – remembering and understanding, K3 - Applying, K4 – Analyse, K5 - Evaluate and K6- Create

Relationship Matrix

Course Outcomes	Programme Outcomes (POs)								Programme Specific Outcomes (PSOs)							Mean Score of COs
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	
CO1	3	2	1	1	1	1	2	1	3	2	1	1	2	1	1	1.7
CO2	3	3	2	1	2	1	3	2	3	3	2	2	3	2	1	2.4
CO3	2	3	3	1	2	1	3	2	2	3	2	2	3	2	1	2.3
CO4	2	3	2	3	2	2	2	1	2	3	2	3	2	2	3	2.5
CO5	3	3	3	2	2	2	3	3	3	3	3	3	3	3	2	3.0
Total																2.4

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