

Futuristic Curriculum Design for Diploma in Engineering and Technology: An Indian Perspective

Jagannath Prasad Tegar

*National Institute of Technical Teachers Training and Research
Deemed university- Distinct category, Govt of India, Bhopal*

Abstract

India's diploma-level engineering and technology programs stand at a crossroads—driven by technological revolutions like AI, IoT, and Industry 4.0, as well as the transformative vision of the National Education Policy (NEP-2020). However, curriculum design is largely academic and remains industrially disconnected, which is ill-suited to global and local future industry skills demands. This paper proposes a futuristic curriculum framework for diploma programs that integrates emerging technologies, multi- and interdisciplinary learning, and outcome-based education (OBE), while emphasising flexibility, sustainability, and deep alignment with Indian ethos, IKS, and industry needs perspectives, as envisioned by NEP-2020. It is proposed to adopt a flexible Entry & Multi Exit Credit System with advanced pedagogy, and Centres of Excellence for technology domains. Case insights from current implementations—ranging from AI-infused polytechnic curriculum in Maharashtra to flexible NEP-inspired models that underscore the feasibility and benefits of reform. The resulting vision: a diploma curriculum that produces future-ready technologists—skilled, adaptable, and deeply connected to both industry and Indian societal imperatives.

Keywords: Futuristic Curriculum, Diploma Engineering Education, Outcome-Based Education (OBE), National Education Policy (NEP-2020), Indian Technical Education