



## M.Tech. ENGINEERING EDUCATION



### DEPARTMENT OF EDUCATION

#### NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH

Institution Deemed to be University under Distinct Category, A Centrally Funded Technical Institute  
Ministry of Education, Government of India, Taramani, Chennai - 600 113.  
[www.nitttrc.ac.in](http://www.nitttrc.ac.in)

# NITTTR, CHENNAI

The National Institute of Technical Teachers' Training and Research, Chennai is a premier institution established in 1964 under the Ministry of Education, Government of India, dedicated to enhancing the quality of technical education in the country. It has been granted the "Institution Deemed to be University" status by the Ministry recently. This recognition acknowledges our 60 years of commitment to providing quality education and training, marking a significant milestone in our journey towards excellence in technical education and research.

Established to improve the standards of technical education, NITTTR offers a range of programs and services tailored to the needs of educators and institutions in the technical education sector. At the core of NITTTR's mission is the training and professional development of technical teachers. Through its various training programs, workshops, and courses, NITTTR equips educators with the necessary skills and knowledge to excel in their roles. These programs cover diverse topics such as curriculum development, teaching methodologies, educational technology, and quality assurance, ensuring that educators stay updated with the latest trends and practices in the field.

In addition to training, NITTTR also conducts research and consultancy activities aimed at improving the overall ecosystem of technical education. The institution engages in cutting-edge research to address key challenges and opportunities in the field, contributing to the advancement of knowledge and innovation. Moreover, NITTTR offers consultancy services to technical institutions seeking guidance on various aspects such as infrastructure development, curriculum design, and pedagogical practices.

NITTTR's commitment to excellence in technical education extends beyond its training and research initiatives. The institution actively promotes collaboration and networking among professionals in the technical education sector, fostering a community of practice where ideas and best practices are shared and exchanged. NITTTR plays a pivotal role in shaping the future of technical education in India. By providing high-quality training, conducting impactful research, and offering expert consultancy services, NITTTR continues to make significant contributions towards the enhancement of technical education standards and the development of a skilled workforce for the nation's growth and prosperity.







## **DEPARTMENT OF EDUCATION**

The Department of Education at NITTTR Chennai is dedicated to providing quality education and training to individuals in the field of teaching and learning. With a focus on innovation and excellence, the department offers various programs and resources to support educators in their professional development. Through a collaborative approach, we aim to improve teaching practices and promote lifelong learning. The department serves as a valuable source of information for those looking to enhance their skills and knowledge in teacher education. It showcases a wide range of initiatives, research, and opportunities for individuals to engage with the latest trends in teaching and learning.

The Department of Education has specialized in various crucial areas such as Pedagogical Training, Human Resources Training, Engineering Pedagogy, Educational Psychology, Soft Skills, Training for Persons with Disabilities, Engineering Education Research, Language Enhancement, Artificial Intelligence in Education, and Women Empowerment. The department plays a vital role by offering a range of short-term programs focused on Pedagogy, Psychology, Artificial Intelligence, Outcome-Based Education, English Language Teaching, Digital Literacy Skills for Educators, Soft Skills, Communication, Evaluation, and Language Empowerment. Through these programs, the department aims to enhance the skills and knowledge of individuals in the fields of education and training, ultimately contributing to personal and professional development.

## **M.Tech. ENGINEERING EDUCATION**

The Postgraduate Program in Education stands as a visionary initiative to cultivate educators poised at the intersection of technical expertise and pedagogical excellence. Embodying a learner-centric philosophy, the program seeks to transcend traditional teaching methods, emphasizing experiential learning, hands-on experiences, and real-world applications. With a commitment to adaptability, it equips educators to navigate evolving technological landscapes, fostering a culture of innovation and creative problem-solving. Ethics, diversity, and inclusivity are integral, ensuring educators create learning environments respectful of each student's unique attributes.



Interdisciplinary collaboration is encouraged to broaden perspectives, while mentorship remains pivotal in guiding students towards academic and professional success. The program also prioritizes ongoing professional development, keeping educators abreast of both technical advancements and innovative teaching methodologies. Industry collaboration ensures curriculum relevance, aligning education with current industry needs and preparing students for seamless transitions into the workforce. In essence, this program envisions producing educators who, through a global perspective, industry collaboration, and mentorship, inspire and shape the future of engineering education, contributing significantly to the advancement of the field.

## **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

- To provide students a strong foundation in engineering principles, mathematics, and sciences to solve complex engineering problems in their chosen field of specialization.
- To provide students, the ability to think critically, analyze data, and apply innovative solutions to engineering challenges, fostering a culture of continuous improvement and adaptability.
- To promote student awareness in communicating technical concepts effectively in both written and oral forms, and work collaboratively in multidisciplinary teams, reflecting the importance of interpersonal skills in professional practice.
- To encourage students to integrate ethical considerations and social responsibility into their professional practices, recognizing the broader impact of engineering solutions on society, and adhering to professional codes of conduct.



## **PROGRAMME OUTCOMES (POs)**

- Demonstrate a solid understanding of fundamental principles in mathematics, science, and engineering, applying this knowledge to analyze and solve complex engineering problems.
- Identify, formulate, and solve engineering problems using a systematic and analytical approach, considering relevant constraints and societal impacts.
- Exhibit proficiency in the design of engineering systems, components, or processes to meet specified needs, integrating creativity, sustainability, and economic considerations.
- Effectively communicate engineering concepts through written, oral, and graphical means, facilitating clear and concise interaction with technical and non-technical audiences.
- Function efficiently as part of multidisciplinary teams, demonstrating effective collaboration, leadership, and interpersonal skills to achieve common goals.
- Adhere to professional ethics, responsibilities, and norms, recognizing the societal impact of engineering solutions and incorporating ethical considerations into decision-making processes.

## **CORE COURSES**

- Orientation towards Technical Education and Curriculum Aspects
- Professional Ethics and Sustainability
- Communication Skills, Modes and Knowledge Dissemination
- Instructional Planning and Delivery
- Instructional Design for Engineering Courses
- Technology Enabled Learning and Life-long Self-learning
- Student Assessment and Evaluation
- Creative Problem Solving, Innovation and Meaningful R&D
- Institutional Management and Administrative Procedures
- Online Course Development
- Advanced Pedagogical Principles in Engineering Education

## **ELECTIVE COURSES**

- Global Engineering Education Perspectives
- Learning Sciences and Cognitive Research
- Data Sciences for Learning Analytics



## **AREAS FOR SHORT-TERM TRAINING PROGRAMS**

- Advance Pedagogy
- Aspiring Leaders Training
- Assessment excellence for effective implementation of OBE
- Capacity Building for Teachers
- Career Guidance and Counselling
- Communication Skills
- Communication Skills Laboratory – Best practices
- Critical Pedagogy for Educational Equity
- Digital tools for English language teaching
- Disability and Education
- Effective OBE pedagogy
- Effective Teaching Strategies for English Language Learners
- Employability Skills
- English for Research
- Environmental Humanities
- Gamification Practices in Language Pedagogy
- Generative AI in Pedagogy
- Harnessing AI for Innovate Teaching
- Indian Constitution
- Indian Knowledge Systems
- Induction Program for Newly Recruited Teachers
- Industrial Training Program for English Teachers
- Innovation in Question Paper design and student assessment in OBE Era
- Instructional Design and Delivery Systems
- Life Skills Training
- Mentoring and Counselling Skills for Teachers
- Methodology for Effective Teaching



# FACILITIES OF DEPARTMENT OF EDUCATION







# THE DIRECTOR

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