GAIKWAD-PATIL
GROUP OF INSTITUTIONS

DTE Code: 4151 www.tgpcet.com

# TULSIRAMJI GAIKWAD-PATIL
College of Engineering & Technology

AN AUTONOMOUS INSTITUTE

## ABOUT US

Tulsiramji Gaikwad-Patil College of Engineering and Technology (TGPCET) was established in the year 2007 by Vidarbha Bahu-uddeshiya Shikshan Sanstha (VBSS), a registered society. TGPCET is approved by All India Council for Technical Education (AICTE), New Delhi and the Directorate of Technical Education (DTE), Mumbai, Maharashtra State. The Institute is Accredited with A+ grade (3.32 CGPA) by NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL, (NAAC) Bengaluru. It is an AUTONOMOUS INSTITUTE affiliated to RTM Nagpur University, Nagpur. The B.Tech programs in Mechanical Engineering, Electrical Engineering, Civil Engineering, and Electronics & Communication Engineering have all been accredited by National Board of Accreditation (NBA).

## VISION

To emerge as a learning Center of Excellence in the National Ethos in domains of Science, Technology and Management.

## MISSION

- To strive for rearing standard and stature of the students by practicing high standards of professional ethics , transparency and accountability.
- To provide facilities and services to meet the challenges of Industry and Society.
- To facilitate socially responsive research, innovation and entrepreneurship.
- To ascertain holistic development of the students and staff members by inculcating knowledge and profession as work practices.

## PROGRAMS @ TGPCET

### B.TECH

| | |
|---|---|
| Computer Science and Engineering | 180 |
| Artificial Intelligence & Machine Learning | 150 |
| Electrical Engineering (NBA Accredited) | 150 |
| Information Technology | 150 |
| Data Science | 150 |
| Electronics & Comm. Engineering (NBA Accredited) | 150 |
| Mechanical Engineering (NBA Accredited) | 120 |
| Civil Engineering (NBA Accredited) | 90 |
| Aeronautical Engineering | 90 |
| Biotechnology | 90 |

### M.TECH

| | |
|---|---|
| Aeronautical Engineering | 12 |
| Artificial Intelligence & Machine Learning | 30 |
| Computer Science & Engineering | 30 |
| Electronics & Comm. Engineering | 18 |
| Electric Vehicle Technology | 18 |
| Mechanical Engineering Design | 24 |
| Structural Engineering | 30 |
| Integrated Power System | 24 |

### MBA / MCA

| | |
|---|---|
| Master of Business Administration | 300 |
| Master of Computer Application | 300 |

### BBA / BCA

| | |
|---|---|
| Bachelor of Business Administration | 120 |
| Bachelor of Computer Application | 120 |

### DIPLOMA

| | |
|---|---|
| Electronics & Comm. Engineering | 30 |
| Information Technology | 60 |
| Electrical Engineering | 60 |
| Civil Engineering | 60 |
| Mechanical Engineering | 90 |
| Computer Science & Engineering | 120 |

## PATRONS

**Dr. Mohan Gaikwad-Patil**
Chairman, GPG

**Mr. Akash Gaikwad-Patil**
Vice Chairman, GPG

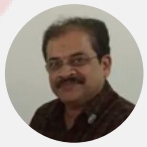
**Dr. Anjali Gaikwad-Patil**
President, GPGI

**Shri. Vinod Gaikwad**
Member, GPGI

## GOVERNING BODY

**Dr. S. R. Wate**
Former Director, CSIR-NEERI and Former Chairman, RAB, CSIR, New Delhi

**Dr. Rajendra Kakde**
Former Advisor, pro Vice- Chancellor, RTMNU, Nagpur



**Er. Manish Sangavi**
Executive Director at Sanghavi Industries Pvt. Ltd. Nagpur

**Mr. Shrikant Dube**
VP and Plant Head, Mahindra and Mahindra Ltd (Vehicle Division), Chakan, Pune

## IDEA LAB INCUBATORS

**Dr. Premanand Naktode**
Chief Mentor, Principal, TGPCET

**Dr. Sandeep Gaikwad**
Faculty Coordinator

**Dr. Pragati Patil**
Vice-Principal
Faculty Co-Coordinator

**Prof. Ritesh Banpurkar**
Dean, IQAC

# AICTE IDEALAB TGPCET

***A Hub for Innovation & Research***

***"Transforming Ideas into Reality"***

# IDEA LAB

**"Idea Lab: Where Ideas Come to Life"** Idea Lab is a state-of-the-art innovation hub designed to nurture creativity, research, and technological advancements among engineering students. It provides a collaborative space where students can experiment, prototype, and develop cutting-edge projects with expert guidance and advanced resources.

## OBJECTIVES OF AICTE IDEALAB

- To Provide an environment that nurtures new ideas, experimentation, and creative problem-solving.
- To Facilitate teamwork among students, researchers, and professionals from various disciplines.
- To Facilitate Hands-on Learning – Provide tools, equipment, and mentorship for students and innovators to gain practical experience.
- To Bridge the Gap Between Academia & Industry – Connect students and researchers with industry experts to develop market-ready solutions.
- To Encourage Entrepreneurship & Startups – Support entrepreneurial ventures by providing mentorship, funding guidance, and incubation facilities.

AICTE IDEALab

## OUTCOME OF AICTE IDEALAB

- IoT-based Industrial Automation Solutions
- Design and manufacturing of custom PCBs for various applications
- Rapid prototyping services for startups and entrepreneurs
- Development of novel robotics algorithms and control systems
- Research on advanced materials and manufacturing techniques for PCBs
- Investigation of cybersecurity threats and mitigation strategies for IoT devices
- Incubation of innovative ideas and prototypes into viable businesses
- Hands-on training programs for students and professionals in IoT, robotics, and PCB design
- Workshops and seminars on emerging technologies and trends
- Collaboration with educational institutions to integrate Idea Lab's expertise into curricula

## INFRASTRUCTURE OF IDEALAB

The Idea Lab is a state-of-the-art innovation space designed to foster creativity, hands-on learning, and rapid prototyping. Equipped with cutting-edge tools and technologies, the lab serves as a dynamic environment for students, researchers, and entrepreneurs to develop and test their ideas in Robotics, IoT, PCB Design, and Rapid Manufacturing.

## CHANAKYA ROBOTICS LAB (चाणक्य-यन्त्रमण्डलम्)

The lab is equipped with robotics kits, robotic arms, sensors, and controllers to help design, prototype, and test advanced robotic systems. From automation to AI-powered machines, users can develop solutions for diverse industries.

## BAUDHAYANA IOT LAB (बौधायन-आयोटि)

A fully integrated IoT workstation features microcontrollers, sensors, and wireless communication modules that allow for the creation of smart devices and interconnected systems. Users can experiment with smart home technologies, environmental monitoring, and industrial IoT applications.

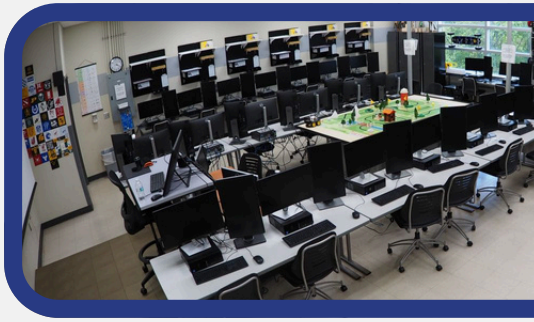
- Advanced microcontrollers and embedded development boards (Arduino, Raspberry Pi, ESP32, etc.)
- Sensor modules for automation and smart applications
- Actuators, motors, and robotic arms for real-world simulations
- Wireless communication modules (LoRa, Zigbee, Wi-Fi, Bluetooth)

## VIRASENA PCB DESIGN LAB (वीरसेन-पीसीबी)

The lab provides both hardware and software tools for PCB design and fabrication, enabling users to design custom circuit boards, simulate them, and even produce prototype boards with precision.

- High-end PCB design software (Altium, Eagle, KiCAD)
- PCB milling and etching machines for rapid circuit board prototyping
- SMD soldering stations and reflow ovens for surface-mount technology (SMT)
- Multimeters, oscilloscopes, and logic analyzers for circuit testing

## KANADA RAPID MANUFACTURING AND PROTOTYPING LAB (कणाद-शीघ्र-निर्माणम् तथा प्रतिरूपणम्)



The lab is equipped with 3D printers, laser cutters, CNC machines, and additive manufacturing tools, allowing for rapid prototyping, iterative design, and real-world testing of hardware solutions.

- 3D printers for rapid product development.
- Laser cutting and CNC machining for precision fabrication.
- High-speed PCB shearing machines for quick board processing.

# CONTACT US


9763711372 / 88050 00935

www.tgpcet.com

principal@tgpcet.com

Tulsiramji Gaikwad-Patil College of Engineering and Technology, Mohagaon, Wardha Road, Nagpur - 441108, Maharashtra


*"Transforming Ideas into Reality"*


## WHY IDEA LAB?

- Hands-on learning with industry-grade equipment
- Collaborative space for interdisciplinary innovation
- Rapid prototyping to accelerate project development
- Support for startups, research projects, and academic experiments

Whether you are a student eager to explore electronics and automation, a researcher pushing the boundaries of innovation, or an entrepreneur looking to prototype your next big idea, the Idea Lab provides the perfect platform to bring your concepts to life.

## KEY FACILITIES

- Advanced Prototyping Lab – Equipped with 3D printers, laser cutters, and CNC machines.
- Electronics & IoT Lab – Microcontrollers, sensors, and development boards for hardware projects.
- AI & Robotics Studio – Hands-on experience with machine learning, automation, and robotics.
- Fabrication & Design Zone – Access to CAD software, simulation tools, and mechanical workstations.
- Co-Working & Brainstorming Space – A dynamic environment for idea-sharing and teamwork.
- Mentorship & Expert Guidance – Support from industry experts, faculty, and alumni.