PLASTINDIA INTERNATIONAL UNIVERSITY

Building Our Future Together

SPONSORED BY PLASTINDIA FOUNDATION

In Technical Partnership with

UMASS University of Massachusetts Lowell

Learning with Purpose

www.plastindia.edu.in

PLASTINDIA INTERNATIONAL UNIVERSITY

Plastindia International University (PIU) is established under Gujarat Private Universities Act, 2009(amendment 2016). PIU is first of its kind initiative which encompasses fundamentals, practical knowledge, hands on training, cutting-edge research, and innovation. The School of Engineering at PIU offers Undergraduate Programme B. Tech. in Plastics and Polymer Engineering. With the curriculum driven by evolving industry requirements, these courses are designed to cater to the sustainable needs of the society. The Postgraduate and Doctoral programme are planned to commence in the subsequent phases

VISION

To provide world class education and well trained, culturally sensitive technical human resource to the Plastics, Polymer and allied industries through technology and management courses.

MISSION

To become a world class research and development centre for imparting education, training, research & innovation in the Plastics and Polymer Industry.

- Set up a multi-faculty Technical University specializing in Plastics Technology.
- Establish World Class Research and Development Centre in Plastics Technology and Polymer Science.
- Promote Process Design, Testing and Innovation in Plastics Technology and Polymer Science.
- Establish a World Class University for Higher and Continuing Education with an emphasis on periodical up gradation of technology and curricula.
- To conduct Continuing Education programs to ensure that the industry is updated about latest practices in technology and production.
- Provide Skilled Human Resources to Plastics and Polymer Industry.
- To collaborate with International Universities with an objective to ensure that academics meet international standards.

GOVERNING BODY

Shri. M. P. Taparia President, PIU, Chairman	**Dr. Raju Desai** Vice President, PIU, Member	**Shri Ravish Kamath** President, Plastindia Foundation, Member
Shri Jigish Doshi Imm. Past President, Plastindia Foundation, Member	**Shri Jayesh Rambhia** Managing Director, Premsons Plastic, Member	**Shri K. K. Seksaria** Managing Director, Uma Plastics Ltd., Member
Shri Kamal Nanavaty President Strategy Development, Reliance Industries Ltd., Member	**Shri Achal Thakkar** Managing Director, Tipco Group, Member	**Shri Mukesh Kumar, IAS** Principal Secretary, Higher & Technical Education, GoG., Member
	Shri Viral Vaishnav Chief Administrative Officer, I/C Registrar, Member Secretary	

INDUSTRY PARTNERS

Supreme — People who know plastics best · Jyoti · Tipco · AUTOTECH SIRMAX · skyi · RAJOO — excellence in extrusion

WHY PIU?

- First university in India dedicated to plastics and sustainability.
- World Class Infrastructure and Facilities.
- International collaboration and service partnership undertaken with UMass Lowell, USA.
- State-of-the-Art-Laboratories
- Seasoned and Experienced Faculties
- Industrial Collaborations
- Assured Placements
- Research and Innovation based international curriculum
- 6-month Internship (Industry Training)
- Industrial projects and entrepreneurship mentoring
- Strong Startup Ecosystem

ADMISSION OPEN 2025-26

B. Tech. in Plastics and Polymer Engineering

ELIGIBILITY AND SELECTION CRITERIA

For First Year Engineering

50% of the seats are filled by ACPC (Admission Committee for Professional Courses), Gujarat. The rest 50% of All India (AI) Seats are filled based on JEE Mains 2024. For seats to be filled by ACPC,

- The student should have cleared 10+2 with science stream with a minimum 45% (40% for SC/ST/SEBC/EWS) of theory (or Th. & Pr.) marks in Physics and Mathematics as compulsory subjects with Chemistry / Biology / any other technical vocational subject.
- The student should have appeared in the JEE (Main) examination and/or State level examination GUJCET

For Diploma to Degree/Direct Second Year Lateral Engineering

- The aspiring candidate shall have passed Diploma Engineering with minimum 45% (40% for SC/ST/ SEBC/EWSs candidates).
- According to the prevailing rules of AICTE, candidates with diploma engineering in any discipline can get admission in any discipline of degree engineering.

AVENUES TO CREATE EXCELLENCE IN EDUCATION & RESEARCH

PLASTINDIA INTERNATIONAL UNIVERSITY

*School of Engineering	**School of Entrepreneurship and Innovation	**School of Sustainability	School of Continuing Education
Plastics and Polymer Engineering	Entrepreneurship & Management	Sustainability Management	Extrusion
Chemical Engineering	Technology, Operations & MIS	Sustainability & Planning	Injection Moulding
Mechanical Engineering	Finance / HR / Marketing	Sustainability Entrepreneurship and Innovation	Material Characterization
			3D Printing
			Product Design
			Compounding Polymer Processing

** M. Tech. and Ph. D. Degree Programme are planned to commence in the subsequent phase.*
***Masters in Business Administration is planned to commence in the subsequent phase.*

PARTNERSHIP WITH UNIVERSITY OF MASSACHUSETTS, LOWELL, USA TO FORM INDIA'S FIRST PREMIER PLASTICS UNIVERSITY

Plastindia International University and University of Massachusetts, Lowell, USA signed a Partnership Service Agreement and comprehensive long-term Engagement MoU with the objective of supporting the establishment of world class engineering programmes at PIU.

UMass Lowell is the world's best university with a very high-ranking plastics programme. UMass Lowell play a key role in advising and counselling on the development of infrastructure, academic curriculum, plans, and quality assurance, including ABET accreditation plans, for the School of Engineering at Plastindia International University.

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RESEARCH, CONSULTANCY AND TRAINING ACTIVITIES

Research and Innovation

We focus on broad future areas in Polymers and Sustainability. Some of the areas that we work in the direction of researchare:

- Sustainable Plastics and Biopolymers
- Recycling and Waste Management
- Advanced Material Science
- Polymer Additives and Compounding

Training & Development

We are committed to progressing the Polymer industries through our comprehensive training programs. Our training programs are regularly updated to incorporate latest trends, technologies, and best practices. We offer:

- Short Term Training Programs (Physical and Virtual-Live)
- Certificate Programs (Short to medium term)
- Corporate Training Masterclass

Testing and Consultancy

Plastindia International University, Vapi offers testing and consultancy solutions in the context of polymers and sustainability to industries/institutions in need. Some of the facilities that we offer include:

- Extrusion
- Continues Mixers
- Injection Molding
- Blow Molding
- Two Roll Mill
- 3D Printing
- Compression Molding
- CNC Machines
- Calendaring Unit
- Workshop machinery
- Universal Testing Machine
- Impact Strength Testing
- Wear Resistance Testing
- DSC
- FTIR
- UV - Visible Spectroscopy
- Nanozeta sizer

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SCHOOL OF ENGINEERING

The School of Engineering (SoE) is dedicated to offering education and research in cutting-edge technologies and imaginative solutions that has the power to transform the global Plastics/Polymer, Chemical, and Mechanical Engineering oriented Industries.

B. Tech.
in Plastics and Polymer Engineering

AN INTERNATIONALLY ACCLAIMED CURRICULUM WAITING FOR YOU

Choosing **B. Tech. in Plastics and Polymer Engineering** at PIU offers you to become a future leader in the domain of plastics and sustainability! The four-year program, partnered with University of Massachusetts Lowell, USA, a world leader in Plastics Engineering Education, offers in-depth knowledge of Polymer Science and hands-on labs in areas like Manufacturing and Product Design.

The curriculum includes core courses, specialized electives for your career goals (employment, research, etc.), open electives for broader interests and Honor/Minor for increasing scope of employment.

Through industry collaborations and internships, you'll be able to bridge the gap between theory and real-world challenges, preparing you for a successful career in the plastics industry.

CAREER AVENUES FOR B.TECH. IN PLASTICS AND POLYMER ENGINEERING

Manufacturing Engineer	Research and Development Scientist	Application Development Professional	Business Development Professional
Technical Services Professional	Technical Sales and Marketing Professional	Quality Assurance/ Control Professional	Sustainability Professional
Product Design Professional	Process Engineer	Material Engineer	Recycling Engineer

INDUSTRY AVENUES FOR B.TECH. IN PLASTICS AND POLYMER ENGINEERING

- Petrochemicals
- Automotive
- Packaging
- Electrical and Electronics
- Biomedical
- Pharmaceutical
- FMCG
- Paints and Coatings
- Adhesive and Sealants
- Rubber
- Textile
- Energy Generation
- Construction
- Furniture
- Agriculture
- Aerospace
- Marine
- Defense

ELIGIBILITY AND SELECTION CRITERIA

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TENTATIVE CURRICULUM STRUCTURE

Semester I

- Engineering Mathematics-I
- Engineering Chemistry
- Materials Science and Engineering
- Engineering Graphics and Design
- Engineering Workshop Practices-I
- Professional Communication (English-I)
- Design Thinking and Innovation-I
- Lab: Engineering Chemistry
- Lab: Engineering Graphics and Design
- Yoga and Meditation

Semester II

- Engineering Mathematics-II
- Engineering Physics
- Introduction to Plastics Engineering
- Introduction to Polymer Science and Technology
- Engineering Workshop Practices-I
- Professional Communication
- Design Thinking and Innovation-II
- Lab: Engineering Physics
- Lab III: Engineering Workshop Practices-I
- Lab: Computer Programming

Semester III

- Engineering Mathematics III
- Polymeric Materials-I
- Introduction to Organic and Polymer Chemistry
- Principles of Processing Equipment and Automation
- Polymer Additives and Compounding
- Environmental Studies
- Lab: Introduction to Organic and Polymer Chemistry
- Lab: Plastics Process Engineering-I
- Soft Skills Development
- Mini Project-I and Industrial Visit

Semester IV

- Engineering Mathematics-IV
- Polymeric Materials-II
- Polymer Testing and Characterization
- Thermodynamics and Heat Transfer
- Plastics Recycling and Sustainability
- Introduction to Economics
- Lab: Plastics Process Engineering -II
- Lab: Polymer Testing and Characterization
- Technical and Scientific Writing
- Mini Project-II and Industrial Visit
- In-plant training

Semester V

- Plastics Process Engineering -I
- Polymer Science- I
- Fluid Flow
- Engineering Ethics
- Methods Exp. Analysis
- Lab: Plastics Process Engineering- III
- Lab: Polymer Science-I
- Lab: Design Lab-I
- Minor Project-I

Semester VI

- Plastics Process Engineering -II
- Polymer Science-II
- Plastics Mold & Die Engineering
- Professional Elective Course-I (Biopolymers & Biocomposites/Packaging Technology/Surface Coating Technology / Plastic Industry 4.0)
- Open Elective-I (Introduction to Nanotechnology)
- Lab: Plastics Process Engineering-IV
- Lab: Polymer Science II
- Lab: Design Lab-II
- Major Project-I
- Environmental Health and Social Responsibility

Semester VII

- Mechanical Behavior of Polymers
- Polymer Structure/Properties
- Process Control
- Product and Process Design
- Professional Elective Course-II (Polymer Blends and Composites / Elastomer Technology / Medical Plastics / Energy from Plastics Waste)
- Open Elective-II (Flexible Electronics)
- Lab: CAE for Plastics (Design Lab-III)
- Lab: 3D Printing Lab
- Major Project-II

Semester VIII

- In-plant Training
  20 week training followed by technical presentation and dissertation regarding projects undertaken in the Industry/Research Laboratory.

Incorporated in our curriculum from the Undergraduate program in Plastics Engineering at UMASS Lowell, USA.

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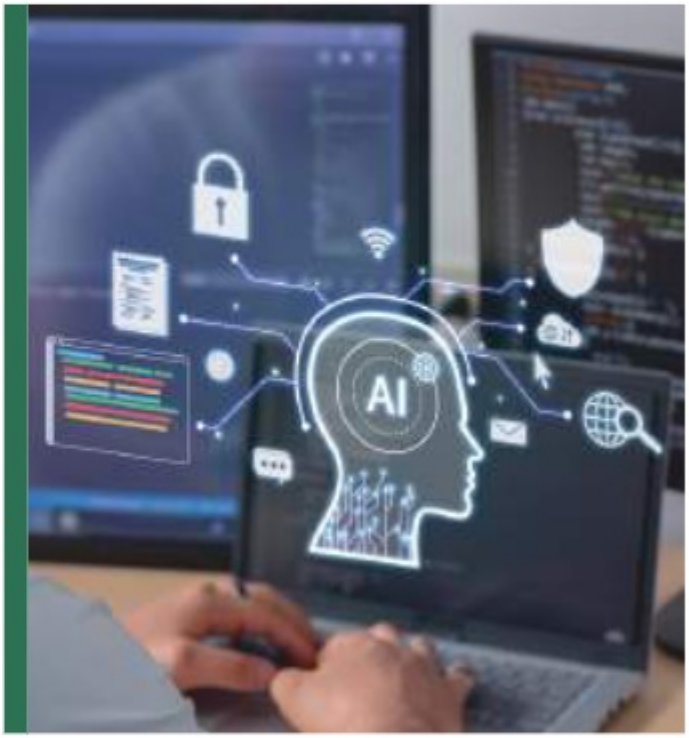
B. Tech. in Computer Science and Engineering

B. Tech. in Plastic and Polymer Engineering

A UNIQUE EXPERIENCE IN COMPUTER SCIENCE AND ENGINEERING EDUCATION

Choosing **Computer Science and Engineering (CSE)** at PIU offers a unique pathway into the evolving field of plastics and sustainability along with conventional careers in the CSE domain. Unlike conventional CSE programme, our specialized program is tailored to meet the specific demands of the IT and Plastics Industry, ensuring that graduates are equipped with cutting-edge technological and industry-specific knowledge. By studying at our university, students gain a deep understanding of how Computer Science/Information Technology crosses path with the challenges and innovations within the plastics sector. This includes:

- Expertise in data analytics for sustainable manufacturing processes
- Predictive analytics for efficient supply chain management
- Computer vision for quality control in plastic manufacturing
- Generative Adversarial Networks (GAN) for tailoring the properties of new materials
- Natural Language Processing (NLP) and Deep Learning (DL) for smart waste management systems and acceleration of research
- AI and ML for helping to tackle complex challenges in plastics manufacturing by process optimization through improving energy usage, reducing waste, predicting failure, among others.
- ML applications for polymer research regarding design of new formulations with specific properties
- Digital Twins (DT) to simulate plastic production for process optimization
- Cloud platforms to connect plastic manufacturing for data sharing and analysis



Graduates emerge not only as proficient computer scientists but also as future ready professionals compelling to contribute meaningfully to the rapidly evolving world of plastics and sustainability. If you're passionate about technology and eager to make a tangible impact in a crucial industry, PIUs CSE program is the ideal choice.

ELIGIBILITY AND SELECTION CRITERIA

Engineering programmes at PIU cover B. Tech. in Plastic and Polymer Engineering and B. Tech. in Computer Science and Engineering with an Honor/Minor degree. Admissions into any of these courses are given if the students meet the below eligibility criteria:

The student should have cleared 10+2 with Science stream with a minimum 45% (40% for SC/ST/SEBC/EWS) of theory (or Th. & Pr.) marks in Physics and Mathematics as compulsory subjects with Chemistry / Biology / any other technical vocational subject.

Students should have appeared in the JEE (Main) examination and/or State level examination GUJCET

For ACPC Seats, please refer to: https://acpc.gujarat.gov.in/be-b-tech
For All India (AI) Seats, please refer to: https://plastindia.edu.in/apply/

TENTATIVE CURRICULUM STRUCTURE

Semester I
- Physics
- Mathematics-1 (Calculus & Linear Algebra)
- Basic Electrical Engineering
- Engineering Graphics & Design

Semester II
- Chemistry-I
- Mathematics-II (Probability and Statistics)
- Programming for Problem Solving
- Workshop /Manufacturing Practices
- English

Semester III
- Analog Electronic Circuits
- Data structure & Algorithms
- Digital Electronics
- IT Workshop (Sci Lab/MATLAB)
- Mathematics-III (Differential Calculus)
- Humanities-I

Semester IV
- Discrete Mathematics
- Computer Organization & Architecture
- Operating Systems
- Design & Analysis of Algorithms
- Management (Organizational Behaviour/Finance & Accounting)
- Environmental Sciences

Semester V
- Signals & Systems
- Database Management Systems
- Formal Language & Automata Theory
- Object Oriented Programming
- Elective-I
- Humanities II

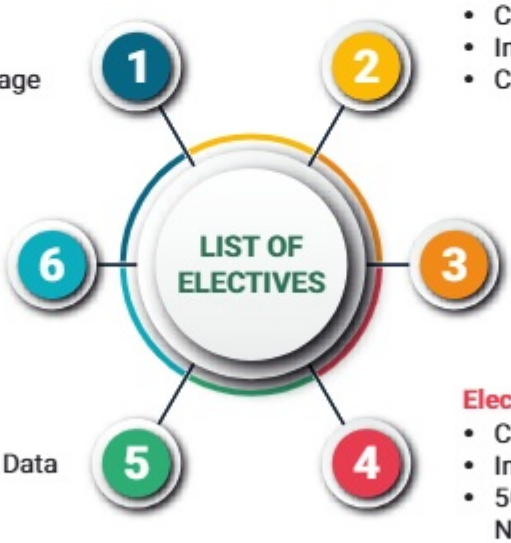
Semester VI
- Complier Design
- Computer Networks
- Elective-II
- Elective-III
- Open Elective-I (Humanities)
- Project-1

Semester VII
- Elective-IV
- Elective-V
- Open Elective-II
- Biology
- Project-II

Semester VIII
- In-plant Training
  20 week training followed by technical presentation and dissertation regarding projects undertaken in the Industry/Research Laboratory.

Elective-I
- Distributed Systems
- Cryptography
- Fuzzy Systems
- Principles of Programming Language

Elective-II
- Parallel Computing
- Cognitive Computing
- Information Security
- Computational Geometry



Open Elective-II
- AI in Healthcare
- Deep Learning for Computer Vision
- Bioinformatics
- Big Data Analytics

Elective-III
- Embedded System
- Coding & Information Theory
- Neural Networks
- Modeling and Simulation

Elective-V
- Advanced Machine Learning
- Web Technologies for Advanced Data Visualization
- Natural Language Processing
- Neural Networks Architectures for Data Analysis

Elective-IV
- Cryptography & Cyber Security
- Internet of Things (IoT)
- 5G Wireless Communication Network
- Computer Graphics

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