CENTRE FOR CAREER DEVELOPMENT
IIT GUWAHATI

# Department Placement Brochure.

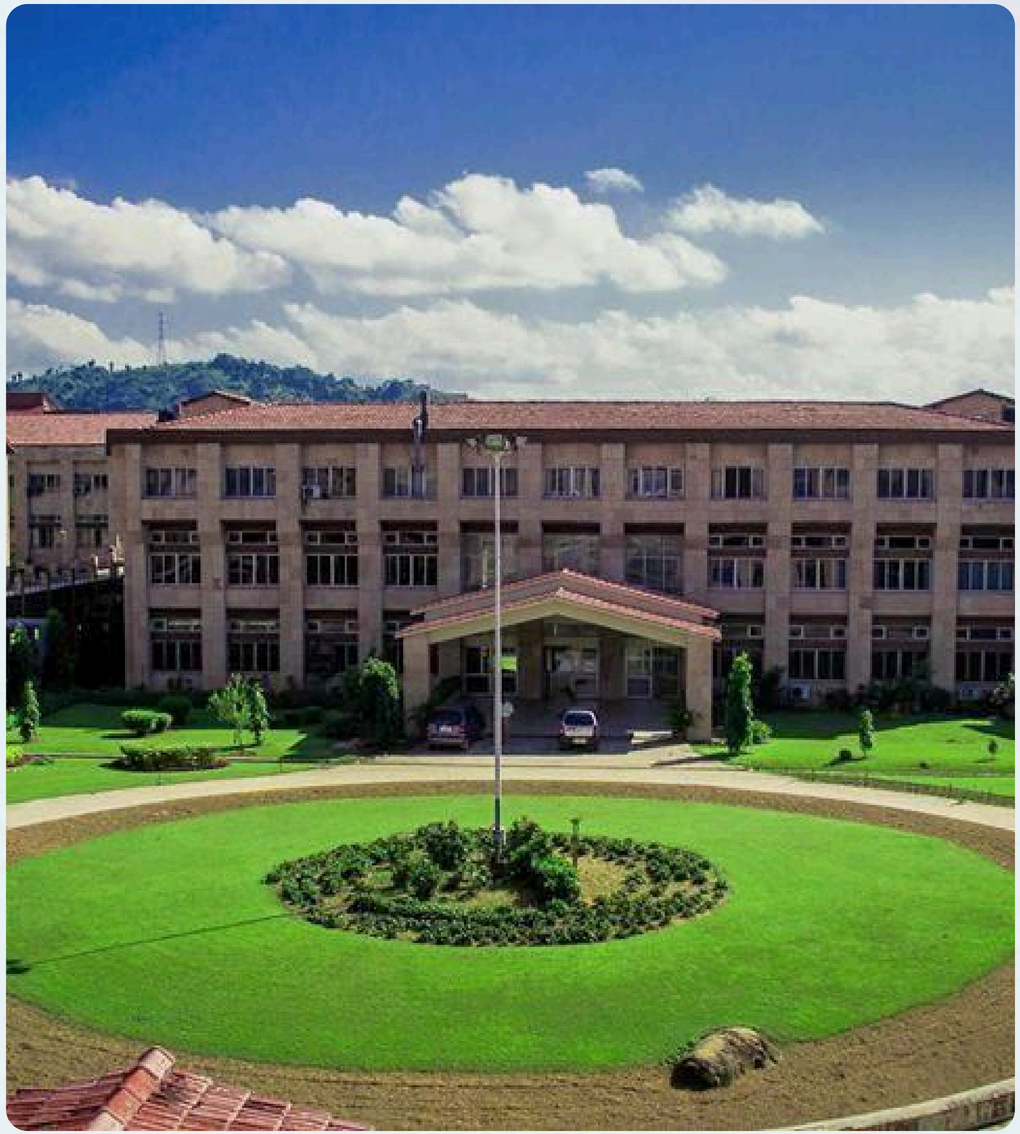
BATCH OF 2026 | Chemical Engineering

# About IIT Guwahati.

Established in 1994, Indian Institute of Technology Guwahati is the sixth member of the IIT fraternity and one of India’s premier institutions for higher education, research, and innovation. Within a short span, the Institute has emerged as a global centre of excellence in science, technology, management, and design. The picturesque campus spans 285 hectares on the northern bank of the Brahmaputra River, approximately 20 km from the heart of Guwahati city. Surrounded by scenic hills and open spaces, it offers a perfect environment for learning, research, and holistic development. IIT Guwahati offers a wide array of academic programmes including B.Tech., B.Des., BSc (Hons), M.Tech., M.Des., M.Sc., MBA, M.A., MS(R) and Ph.D. across 11 departments, 9 interdisciplinary centres, and 5 schools, covering major disciplines in engineering, science, humanities, healthcare, and management.

The Institute has built world-class infrastructure and houses state-of-the-art laboratories and National Centres of Research that support cutting-edge research. Students are encouraged to take up interdisciplinary coursework, pursue minor degrees, and choose from a rich variety of open and interdepartmental electives. IIT Guwahati has signed MoUs with top international universities, facilitating semester exchanges and summer internships, thereby broadening students' global exposure. Our students regularly intern at leading global firms and research institutions, gaining invaluable real-world experience.

Ranked among the top 100 world universities under 50 years by Times Higher Education (THE), IIT Guwahati continues to excel globally. The Institute was ranked 42nd globally in 'Research Citations per Faculty' and 344th overall in QS World University Rankings.



# About the Department .

The Department of Chemical Engineering at IIT Guwahati, established in 2002, offers B.Tech., M.Tech., and Ph.D. programmes in Chemical Engineering. Currently, it has more than 360+ B.Tech. students, 110+ M.Tech. students, and 120+ Ph.D. students. The M.Tech. programme began in 2004 with a specialization in Petroleum Refinery Engineering and, since 2011, offers four specializations: (1) Petroleum Science and Technology, (2) Materials Science and Technology, (3) Computer Aided Process Engineering, and (4) International Joint M.Tech. Degree in Food Science and Technology.

The department hosts undergraduate laboratories for fluid mechanics, mechanical operations, process control, mass transfer, heat transfer, and reaction engineering. Students receive hands-on training using software such as Accelrys, Amber 12.0, ASPEN Plus, Mathematica, ChemCAD, ANSYS Fluent, COMSOL Multiphysics, and Gaussian.

It also houses the Centre for Sustainable Polymers (Sus-Pol), funded by the Ministry of Chemicals and Fertilizers, Government of India. The faculty are experts in traditional and interdisciplinary domains, including petroleum engineering, nanotechnology, bio-engineering, complex fluids, and molecular simulations, and are dedicated to delivering high-quality teaching and research. Alumni hold positions in both academia and industry.

# From the desk of HOD.

Since its inception in 2002, the Department of Chemical Engineering at IIT Guwahati has rapidly evolved into a dynamic centre of innovation, offering B.Tech., M.Tech. (specializations in Petroleum Science & Technology and Materials Science & Technology), and Ph.D. programs, with faculty deeply engaged in catalysis, reaction engineering, adsorption, photocatalysis, biomass valorization, fluid dynamics and micro-fluidics, polymer processing, molecular simulations and advanced separation technologies.

The department benefits from shared, institute-level infrastructure: high-performance computing (PARAM-Kamrupa 838 TF and PARAM-Ishan 250 TF), inter-departmental facilities like XPS, HPCC, and PIV setups—fostering interdisciplinary collaboration.

The department boasts a strong track record of student achievements, including prestigious fellowships (Marie Curie, LBNL/Sandia), top awards in international conferences, IH-level recognitions, and “best oral presentation” and thesis awards across high-profile forums. On the global ranking front, the Chemical Engineering programme, IIT Guwahati is placed in the 201–250 band in QS World University Rankings by Subject 2024. According to ShanghaiRanking (ARWU Subject Rankings) 2025, chemical engineering at IIT Guwahati is within the 301–400 global band, placing it among globally recognized programs. Vibrant student life amplifies learning: departmental scholars actively participate in flagship campus events such as Techniche—a techno-management fest with ~50,000 participants, hosting Technothlon, workshops, marathons, exhibitions—and larger cultural and entrepreneurial fests like Alcheringa, Udgam, Spirit, and Research Conclave, all powered by student governance and interdisciplinary collaboration. Support systems like the Centre for Career Development, Research Park, and incubation centres enhance industry linkage and student entrepreneurship. The faculty and students actively contribute to innovative projects, including the development of eco-friendly materials and technologies that address real-world challenges. The department's dedication to fostering a dynamic academic environment positions it as a leader in chemical engineering education and research. The department maintains a vibrant alumni community, actively involved in networking, mentorship, and volunteering initiatives that enrich both current and former students’ experiences.

In sum, the department combines rigorous academic specialization, impactful research, international visibility, strong student achievements, and immersive campus culture—positioning it as one of India’s trailblazing centres of Chemical Engineering excellence.

With this foundation of academic depth, research rigor, and vibrant student activity, we extend a warm invitation to industry leaders: Visit our campus and collaborate with us—whether for internships, joint projects, placements, or sponsored research. Together, let's harness this synergy and channel it toward nation-building through innovative chemical engineering solutions.

**Prof. Subrata Kumar Majumder**

Head of the Department

# From Department Faculty Representative.

The Department of Chemical Engineering is committed to nurturing well-rounded professionals who are ready to make a meaningful impact in the industry. As the Faculty Placement Representative, it is my pleasure to introduce you to the exceptional talent that our department has to offer. At IIT Guwahati, our Chemical Engineering graduates are equipped with cutting-edge knowledge and hands-on experience, ensuring they are ready to tackle the challenges of the modern industrial landscape. Our students benefit from a rigorous curriculum, state-of-the-art laboratories, and collaborative research opportunities with leading industry partners across diverse domains. In addition to their academic pursuits, our students actively participate in technical seminars, workshops, and industry and academic internships, providing them with valuable exposure to real-world challenges and emerging technologies."

"They are trained to excel in a wide range of fields, including chemical process design, materials science, environmental engineering, hydrogen technologies, water treatment, membrane technology, AI/ML, food science and technology, petroleum technology, polymer technology, computational fluid dynamics and many more.

We invite you to explore the impressive capabilities of our graduates. Their problem-solving skills, innovative mindset, and strong work ethic make them valuable assets to any organization. We are confident that they will exceed your expectations and contribute significantly to your success."

**Dr. Sumit Kumar**

# Demographics.

## Undergraduate Program - B.Tech

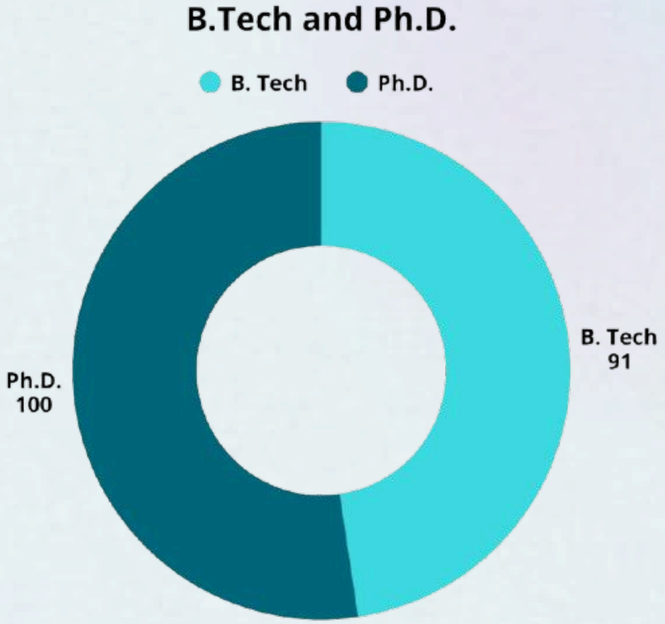
Bachelor of Technology (B.Tech.) degree in Chemical Engineering follows an eight semester system. The curriculum is designed to impart fundamental principles as well as recent advancements in Chemical Engineering. The syllabus include Humanities, Computer, Mechanical, and Chemical engineering sciences.

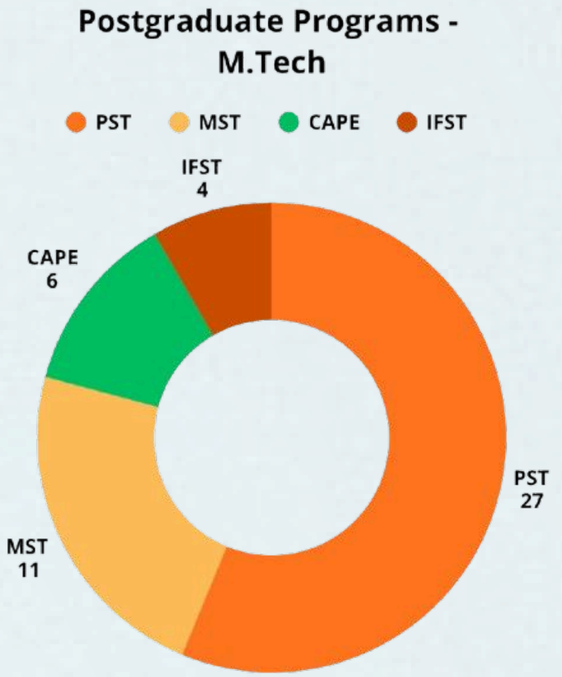
## Postgraduate Programs - M.Tech

The Master of Technology (M.Tech.) degree course with specialisation in "Petroleum Refinery Engineering" was started in 2004. Currently, the department offers four specialisations in the M.Tech. degree course (since 2011), viz. (1) Petroleum Science and Technology (2) Materials Science and Technology (3) Computer Aided Process Engineering and (4) International Joint M.Tech Degree in Food Science and Technology to the candidates selected through GATE (Graduate Aptitude Test in Engineering). The master degree courses follow a four-semester system. In the first two semesters, the postgraduate students are exposed to advanced common courses of Chemical Engineering as well as specialisation related courses. The curriculum involves one year of thesis work (semesters III and IV) which includes fundamental and applied research.

## Doctoral Degree Programme

The doctoral programme requires a minimum necessity of taking four course work for master (M. Tech.) degree holder and six course work for bachelor (B. Tech.) degree holder in the first two semesters. After the completion of course work, the doctoral students have to appear for the Ph.D. comprehensive examination.The research scholar is further allowed to carry out his/ her research work after successful completion of the Ph.D. comprehensive examination. The maximum duration for the doctoral programme is about six years.



# Courses Offered.

## B.Tech Core Courses:

- Chemical Process Calculations
- Fluid Mechanics
- Heat Transfer
- Chemical Engineering Thermodynamics
- Mass Transfer – I
- Mass Transfer – II
- Solid Fluid Operations
- Chemical Reaction Engineering – I
- Chemical Reaction Engineering – II
- Process Control and Instrumentation
- Process Equipment Design
- Transport Phenomena
- Process Engineering and Economics
- Chemical Process Technology
- Computer Aided Numerical Methods
- Computer Aided Process Equipment Design
- Laboratory – Heat Transfer
- Laboratory – Fluid Mechanics
- Laboratory – Process Control
- Laboratory – Reaction Engineering

## M.Tech Core Courses:

- **Material Science & Technology:** Characterization of Materials, Smart Materials, Fundamentals of Material Science, Composite Materials, Fundamentals of Micro-nano Fluidics & micro fabrications, Computer Aided Numerical Methods, Advanced Reaction Engineering, Optimization Techniques.

- **Petroleum Science & Technology:** Petroleum Refinery Engineering, Petroleum Reservoir Engineering, Refinery Process Design, Petroleum Production Engineering, Petroleum Reservoir Simulation, Enhance Oil Recovery, Computer Aided Numerical Methods, Advanced Reaction Engineering, Optimization Techniques.

- **Computer Aided Process Engineering:** Applied Statistics for Chemical Engineers, Process Modelling & Simulation, Multiscale Modelling & Simulation, Applications of Artificial Intelligence and Machine Learning in Chemical Engineering, Computer Aided Numerical Methods, Advanced Reaction Engineering, Optimization Techniques.

- **Food Science & Technology:** Advanced Food Processing, Advanced Topics in Food Engineering, Food Preserving and Processing Technology, Food Chemistry, Food and Nutritional Biochemistry, Food Microbiology, Food Biochemistry, Molecular Life Science Biological Aspects.

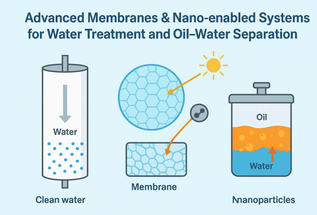
# Department Electives.

- Advanced Process Control
- Colloid and Interface Science
- Computational Fluid Dynamics
- Fluidization Engineering
- Optimization Techniques
- Petrochemicals
- Natural Gas Engineering
- Refinery Process Design
- Non-linear Bifurcation Analysis
- Fuel Cell Technology
- Molecular Simulation: Principles and Application
- Polymer Science and Technology
- Computing in Chemical and Petroleum Engineering
- Fundamentals of micro-nano fluidics & microfabrication
- Energy Resources
- Multiphase Flow

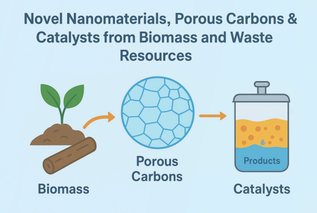
- Catalysts and Adsorbents
- Membranes
- Composite Materials
- Smart Materials
- Integration of Refinery and Petrochemical Operations
- Applied Statistical Thermodynamics
- Applied Rheology
- Advanced Clean Fuel Technologies
- Microelectronic Fabrication
- Multicomponent Mass Transfer (MMT)
- Biofluid Mechanics
- Process Intensification and Integration
- Advanced Flow Measurement Techniques
- Computer Aided Applied Optimization
- Petroleum Reservoir Simulation
- Applied Statistics for Chemical Engineers

# Key Research Areas.

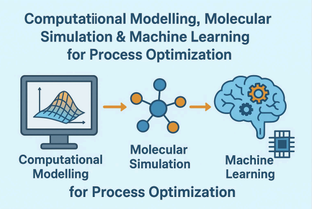
Advanced Membranes & Nano-enabled Systems for Water Treatment and Oil–Water Separation




Novel Nanomaterials, Porous Carbons & Catalysts from Biomass and Waste Resources

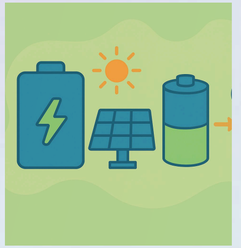



Computational Modelling, Molecular Simulation & Machine Learning for Process Optimization

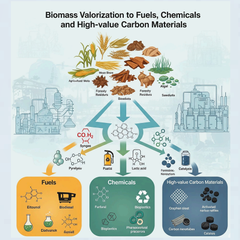



Integrated Polymer Based Materials for Food Packaging, Coating and Substituting Plastic utility application

Green Synthesized Advanced Materials for Sustainable Approach of Developing Supercapacitors Batteries and Fuel Cells



Biomass Valorization to Fuels, Chemicals and High-value Carbon Materials for Catalysis , Water Purification and Energy Storage Application

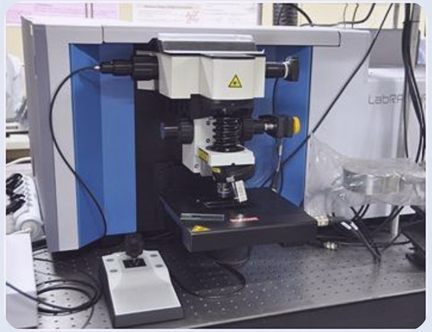



Fluid Dynamics, Multiphase Flow & Micro channels for Advanced Separation Systems, Thin Film Coatings and Drug Delivery


Automated & Green Analytical Platforms for Environmental & Food Safety Monitoring

# Instrument Facilities.

- Fourier Transform Infra-Red Spectroscopy (FTIR)
- Differential Scanning Calorimetry (DSC)
- Thermo Gravimetric Analyzer (TGA)
- High Performance Liquid Chromatograph (HPLC)
- Rheometer, Tensiometer
- X-Ray Diffraction
- BET Surface Area Analyzer
- Raman Spectroscopy
- Scanning Electron Microscope
- Transmission Electron Microscope


# Past Recruiters.



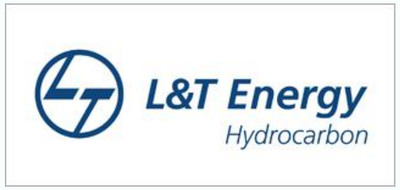



















# Department Achievements.

> IIT Guwahati and Danfoss Industries Private Limited Sign MoU to Drive Innovation in Sustainable Technologies at InvenTiv 2025


> Dr. Dipankar Bandyopadhyay, IIT Guwahati, received the ‘Best Innovation (Extramural)’ award for Mobilab - a multi-diagnostic device enabling early detection of Kidney, Liver, Heart, and Pancreas disorders.


> IIT Guwahati researchers developed a low-cost water treatment system removing 94% iron and 89% fluoride, delivering 20,000 L/day at just ₹20 per 1000 L, with a pilot running in Assam.

# Contact Details.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**Department Website**

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## Location

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