



Centre for Career Development,  
Indian Institute of Technology Guwahati

**Placement  
Brochure-2024**

**Department  
of Civil Engineering**



## About The Institute

# Indian Institute of Technology, Guwahati

Established in **1994**, as an 'Institute of National Importance', IIT Guwahati has grown into being a preferred destination for people passionate about learning and innovation. IIT Guwahati has been ranked among the **Top 100 Young Universities in the world** by the Times Higher Education, one of the two Universities from BRICS nations. IIT Guwahati has several factors contributing to how in a short span of time it has established itself as one of the best institutes of its kind in the country. The programmes and courses that are offered at IIT Guwahati are perpetually evolving to adapt to the **ever changing global requirements** and along with the diversity of the fields of study, this has helped the institute become one of the nation's nerve centres for research and development, and technical education. The faculty ensure that the students of the campus are ready to face the challenges of the professional world by providing them with a sound conceptual understanding of their respective disciplines. The institute also offers a plethora of opportunities to students for their holistic development, through the excellent facilities that it has for sports and general extracurricular activities.

Students of the Civil Engineering Department are exposed to well-defined academic programs along with a host of sports, cultural and organizational activities in the vibrant and beautiful campus of IIT Guwahati. The presence of state-of-the-art experimental and computational facilities, active institute-industry interactions, national and international exchange programs and industrial/research training opportunities help the students in the department to excel in the competitive professional life. Our graduates and postgraduates have not only been selected by leading national and multinational firms, but also by top research and academic institutes. The achievements of our students have really made us proud. We would be happy to receive any valuable suggestions from your side. Feel free to contact us if you have any such questions or comments.

Civil Engineering Department, IIT Guwahati achieved an impressive milestone, with an outstanding rank in the range of **150-200** as per QS World Rankings 2023. IIT Guwahati has also entered the list of top 50 institutes in the world by securing the **41st** rank globally (**Indian Rank - 2**) in the 'Research Citations per Faculty' category of the latest QS World University Rankings 2022. Our faculty members, renowned experts in their fields, have dedicated themselves to imparting cutting-edge knowledge, practical skills, and a deep understanding of the engineering principles that shape the world around us.



**PROF. SHARAD GOKHALE**

**From the Head  
of the  
Department**

# About The Civil Engineering Department

## Vision

- To embark on an endeavor of knowledge through innovation in Civil Engineering education and research for sustainable development of the nation with special emphasis on the Northeastern region.

## Mission

- To create collegial, collaborative and stimulating environment for achieving academic excellence.
- To undertake inter-disciplinary research for sustainable development of the nation.
- To integrate research, innovation and technology in the learning domains of undergraduate and postgraduate education.

The academic program commenced in 1995 and is one of the oldest departments of the institute. The Department of Civil Engineering at IIT Guwahati was established in 1997 and has continually upgraded itself in terms of academic programs and research infrastructure, including state-of-the-art laboratories. The department attracts the finest young and 53 dynamic faculty members and the best of the students for its Bachelors, Masters and Doctoral programs.

The Department is committed to providing excellent in-classroom infrastructure, enrichment of the academic and professional experience of students, outreach to the engineering community and society, and advancement in Civil Engineering.

# Academic Curriculum

## Undergraduate Programs – B.Tech

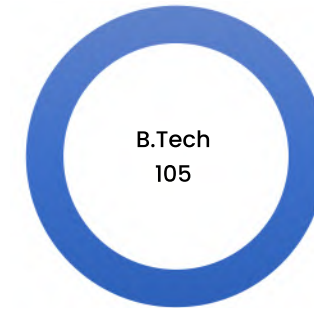
Our B.Tech program in Civil Engineering offers a meticulously crafted curriculum that covers all major disciplines of civil engineering, including structural engineering, geotechnical engineering, transportation engineering, environmental engineering, to remote sensing. We provide our students with a well-rounded education that prepares them for **diverse career paths** within the field. The B.Tech curriculum involves an eight-semester program with the objective of providing a platform for the students to develop skills and knowledge in the field of Civil Engineering. Apart from that, the program also includes courses on humanities and social sciences and many electives. Our students gain hands-on experience and valuable skills by collaborating with industry leaders in the civil engineering sectors.

## Postgraduate Programs – M.Tech

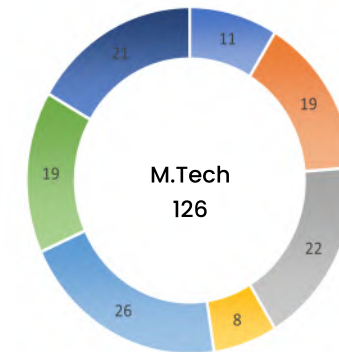
The M.Tech curriculum involves a rigorous four-semester program tailor-made to the area of specialization. The program follows a balanced approach of training in both qualitative/experimental and quantitative aspects of the respective field of specialization.. The students are also required to undertake teaching assistantships, thus grooming them into well-rounded individuals capable of completing challenging assignments. The Department offers degrees in seven different specializations: **Earth System Science and Engineering, Environmental Engineering, Geotechnical Engineering, Infrastructure Engineering and Management, Structural Engineering, Transportation Systems Engineering, Water Resources Engineering and Management.**

## Ph.D

Our Ph.D. program, currently enrolling 203 students, is designed to facilitate comprehensive proficiency in the chosen field. This is accomplished through a structured curriculum comprising coursework and culminating in intensive doctoral research. Our students actively engage in both experimental and theoretical research across **seven specialized areas within Civil Engineering.**



Total No of Students in Graduating Batch



- Earth System Science and Engineering
- Environmental Engineering
- Geotechnical Engineering
- Infrastructure Engineering and Management
- Structural Engineering
- Transportation System Engineering
- Water Resources Engineering and Management

# List of Courses Offered

## B.Tech

- Mathematics III
- Solid Mechanics
- Civil Engineering Materials
- Civil Engineering Materials Lab
- Fluid Mechanics
- Fluid Mechanics Lab
- Structural Analysis I and II
- Surveying
- Surveying Lab
- Geotechnical Engineering I and II
- Geotechnical Lab I and II
- Environmental Engineering I and II
- Environmental Engineering Lab I and II
- Hydraulics and Hydraulic Structures
- Hydraulics and Hydraulic Structures Lab
- Reinforced Concrete Design
- Transportation Engineering I and II
- Transportation Engineering Lab I and II
- Construction Technology & Management
- Engineering Geology
- Design of Steel Structures
- Engineering Hydrology
- Hydrology Lab
- Departmental, Open and HSS Electives

## M.Tech

- Project Management in Construction
- Quality and Safety Management
- Optimization Methods
- Statistical Methods in Civil Engineering
- Urban Transport Systems Planning
- Earth System Dynamics
- Advanced & precision Remote Sensing
- Geo-hazard Science and Engineering
- Infrastructure Planning
- Construction Methods and Equipment Management
- Exploration Geo-science
- Solid and Hazardous Waste Management
- Design of Environmental Engineering Systems
- Air Quality Modeling
- Environmental Management
- Advanced Soil Mechanics
- Dynamics of Soil and Foundations
- Financing Infrastructure Projects
- Advanced Concrete Technology
- Structural Dynamics
- Analysis and Design of Bridges
- Pavement Materials
- Traffic Engineering
- Principles of Water Quality and EIA
- Subsurface Hydrology and more..

# Key Research Areas

## Earth System Science and Engineering

- Remote Sensing and Advanced Image processing
- Applications of Geographic Information System(GIS) and Scientific computing for geospatial Analysis
- Photogrammetry, LIDAR and UAV Applications
- Petrophysical modeling for petroleum exploration
- Hydrocarbon exploration
- Rock Mechanics
- Geophysical Survey and Exploration
- Geodynamics and Natural Resources Management
- Sensor Calibration and Synthetic Simulation
- Isotope Hydrology



## Geotechnical Engineering

- Shallow and deep Foundations
- Stability of slopes
- Unsaturated Soil Mechanics
- Ground improvement Techniques
- Seismic Hazard Analysis and Ground motion simulations
- Soil Stabilization
- Offshore Foundation
- Seismic soil-structure Interaction
- Vegetation soil Interaction
- Geoenvironmental Engineering



## Environmental Engineering

- Wastewater treatment
- Solid waste management
- Biogas
- Pollution modeling
- Air quality modeling
- Sludge treatment
- Heavy metal removal and recovery
- Environmental impact, risk assessment & management



## Infrastructure Engineering and Management

- Sustainability in construction
- Project management in construction
- Quality control and assurance
- Infrastructure planning and procurement
- Quality and risk management
- Geopolymer concrete
- Lightweight foam concrete
- BIM and construction automation
- Construction equipment and materials
- Concessions and project finances



# Key Research Areas

## Structural Engineering

- Seismic control of a structure
- Earthquake engineering
- Continuum damage mechanics
- Seismic strengthening
- Wind-induced vibration and control
- Structural health monitoring
- Fracture mechanics
- Finite Element Analysis
- Durability of structures



## Water Resources and Engineering

- IDF curve development
- River linking projects
- Rainfall clustering and zoning
- Sediment influx management
- Groundwater Quality
- Rainfall modeling
- River Hydraulics
- Hydrodynamic of alluvial channel
- Watershed and Irrigation management
- Dam-break analysis



## Transportation Systems Engineering

- Sustainable transportation planning
- Transportation demand management
- Traffic flow modeling
- Rigid and flexible pavement
- Performance testing and modeling of asphalt concrete
- Geometric design of transportation facilities
- Highway quality control and pavement material
- Accident Analysis and road safety
- Pavement analysis and design



For more information on the research areas and laboratories, please visit [here](#)



# Research Laboratories

- Concrete Technology Laboratory
- Computational Laboratory
- Earth System Science and Engineering Laboratory
- Environmental Engineering Laboratory
- Fluid Mechanics Laboratory
- Geoinformatics Laboratory
- Geotechnical Engineering Laboratory
- Hydraulic Engineering Laboratory
- Infrastructure Engineering and Management Laboratory
- Primavera and MS Project Laboratory
- Pavement Evaluation Laboratory
- Structural Engineering Laboratory
- Transportation Systems Laboratory
- Water Resources Engineering Laboratory
- Water Quality Laboratory



**Structures Lab - 1**



**Water Resources Lab**

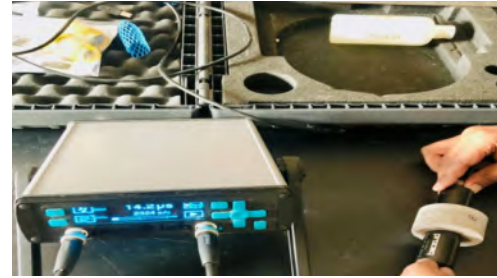
# Research Laboratories



**Geophysical Survey**



**Infrastructure Engg. Lab**



**Spectroscopy Lab**



**Traffic Engineering Lab**



**Transportation Lab**



**Foam Concrete Technology Lab**



**Structural Lab**



**Air pollution Lab**

# Sponsored Research Projects

- Use of industrial waste steel slag in the design of open graded asphalt friction courses
- Review of road safety audit manual
- Enhancing seismic performance of reinforced concrete bridge pier using HyFRC
- Stochastic multi-scale failure analysis of composites
- Combined synchrosqueezing and HMC based Bayesian updating for condition assessment of reinforced concrete road bridge
- Statistical downscaling for hydro-climatic projections with CMIP5 simulations to assess impact of climate change
- Pilot project for integrated land use planning and water resources management
- Safer roads for safer childhood
- Evaluation of bamboo houses for earthquake resistance
- Seismic strengthening of unreinforced masonry buildings using ferrocement bands
- Evaluation of column-to-beam flexural capacity ratio for strong-column weak-beam design in RC buildings
- Road surface quality assessment of selected border roads sections of India through advanced remote sensing technique
- Archiving, modeling and visualization of the eco-cultural heritage of the Majuli River island of Assam
- Study of glacial dynamics and sustainable hydrological resources in Arunachal Himalayas

## Funding Agencies

- Department of Science and Technology, New Delhi
- Ministry of Road Transport and Highways
- D2S Infrastructures Pvt. Ltd.
- Aeronautics Research and Development Board, DRDO
- Guwahati Metropolitan Development Authority, Assam
- IFRC, Geneva, Switzerland
- Council of Scientific and Industrial Research (CSIR)
- Science and Engineering Research Board, DST
- All India Council for Technical Education
- Assam Power Generation Corporation Ltd.
- Defence Terrain Research Laboratory, DRDO
- SPLICE, Climate Change Programme, DST
- Board of Research in Nuclear Sciences (BRNS), DAE
- Pollution Control Board, Assam
- G.B. Pant National Research Institute of Himalayan Environment and Sustainable Development, MoEFCC

For a complete list of sponsored projects, [visit the website](#)

# Year at a Glance

## Achievements

- International Journals Research Papers Published for the year 2022-2023: **216**
- National and International Conference Research Papers Published: **85**
- IIT Guwahati has achieved global recognition by securing the **41st rank worldwide** (2nd in India) in the 'Research Citations per Faculty' category of the esteemed **QS World University Rankings 2022** and **7th** in the Engineering category as per NIRF Rankings 2023.
- QS world ranking 2023: **Civil Engineering Department**, IIT Guwahati achieved an impressive milestone, with an outstanding rank in the range of **150-200**.
- Our Post Graduate Students from Civil Engineering have secured the prestigious **DAAD Scholarship** in Germany for the year 2023.
- Achieved **3rd place** in the **Inter IIT Civil Conclave** 2022.

# Internship

Our students have undergone internships and training in industries and universities around the world. We believe in equipping our students with real-world experiences that prepare them for the challenges of the professional landscape. Through our extensive network of industry partners and esteemed universities, we offer unparalleled internship opportunities that expose our students to diverse cultures, cutting-edge technologies, and innovative practices.



Georg-August University of  
Göttingen, Germany



UNIVERSITY OF LEEDS



IISC, Bangalore



## Project Collaborations:

- SP Singla constructions
- Engineering Consultants Group, Dubai
- Gammon India Ltd, Guwahati
- RITES India Ltd, Kolkata
- Shapoorji Pallonji & Co Ltd
- Maritime Research Centre, Pune
- Central Mine Planning and Research Institute, Ranchi
- Shree Cement
- National hydropower corporation at LSHEP, Assam

# Previous Recruiters

Schlumberger

amazon

Uber



Walmart

TATA PROJECTS  
Simplify.Create



Microsoft

ओएनजीसी  
ONGC

आर ई सी  
REC  
असीमित ऊर्जा, अनन्त संभावनाएँ  
Endless energy. Infinite possibilities.

Adobe

LANCO



Indian Oil Corporation Limited

innovaccer



AXIS BANK

Ansys

WELLS  
FARGO

ATKINS



Degrémont  
Suez

UltraTech  
CEMENT  
The Engineer's Choice

synergy

Reliance  
Industries Limited

## Previous Recruiters



ARKITECHNO



Deloitte.



accenture



... and many more.

## Contact Us



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