

# Indian Institute of Technology Patna

भारतीय प्रौद्योगिकी संस्थान पटना



## Department of Civil and Environmental Engineering

B.Tech Placement Brochure

2019-20

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# MESSAGE FROM HOD

We are a part of modern and growing IIT founded in 2008. Since its inception in 2012, the Department of Civil and Environmental Engineering at IIT Patna has continually upgraded itself in terms of academic programmes and all research infrastructure including state of the art laboratories. The Department attracts the finest young and dynamic faculty members and the best of students for its Bachelors, Masters and Doctoral programmes. We have been imparting quality education since the inception of the Department by focusing on technical advancements and research.

Students are exposed to well-defined academic programmes along with a host of sport, cultural and organizational activities on a vibrant and splashing green campus of IIT Patna at Bihta.

Keeping in mind the infrastructure requirements for improved quality of life in a growing society as well as for industry and economic development, our curricula are designed as per the need of the hour and to meet the challenges of tomorrow. Apart from Institute and programme core courses, our curricula provide flexibility to students to choose elective courses of interdisciplinary nature including humanities, social sciences and management streams. Emphasis is provided on project based learning. Students are encouraged to work for their project or dissertation on topics of industrial and societal needs. The presence of state-of-the-art experimental and computational facilities, active institute-industry interaction, rigorous training – both inside the classrooms and laboratories as well as through immersive industrial/research internships prepare the students of the Department with their innate quality to meet more than adequately any challenge in their competitive professional life and also take on leadership roles in later years in their career. The Department is continuously striving for greater heights in teaching and research that is relevant to the industry and shall help in nation building.

It gives me immense pleasure to mention that IIT Patna is placed at 10th position amongst engineering institutions of the country in the recently released 'India Rankings 2016' by the National Institutional Ranking Framework (NIRF), Ministry of Human Resource Development, Govt. of India. Various national and multinational companies, reputed public sector undertaking, etc. regularly visit our Institute for campus recruitment. The Institute maintains cordial relationship with the recruiters and all possible hospitality is extended to them by our Training and Placement Cell (TPC). I heartily welcome both the recruiters and our graduating students to come to a common platform and get the best out of each other. I am quite sure that students of our Department will prove themselves competent enough to meet the challenges of modern technical world and the society. I wish them all the best for their future.

Dr. Ramakrishna Bag

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# ABOUT US

The Department of Civil and Environmental Engineering at IIT Patna was established in the year 2013. It constitutes five independent disciplines: Structural Engineering, Geotechnical Engineering, Transportation Engineering, Water Resources Engineering and Environmental Engineering.

The Department offers a four-year and a two-year programme leading to Bachelors and Masters Degree in Civil Engineering. The Department has justifiably proved itself on the quality of its academic programmes and is keeping pace with the latest developments in engineering education and is well equipped with state-of-the-art research laboratories to enable the students to carry out research and experimentation. It is committed to provide a holistic and enriching training to the students.

Department has a number of ongoing/approved projects and consultancy works. It makes a continuous effort of setting up and upgrading experimental and computational facilities.

Industrial/research training opportunities are also provided to help the students to excel in their professional life.



# UG PROGRAMME- Civil Engineering


The B.Tech programme in Civil Engineering has been structured to provide a comprehensive exposure to the fundamentals of Civil Engineering as well as introduce them to the most recent and advanced concepts sought for by the industry. The curriculum follows a balanced approach, stressing equally on the theoretical aspects as well as providing the necessary hands-on training and lab exposure to deal with the versatile conditions present in the industry.

The course is a standard four-year eight-semester programme with each year increasingly focusing on the core civil engineering concepts and providing the right learning curve to enable the students to acclimatize and excel in the various aspects of the field. While the first-year concentrates on building the necessary mathematical and basic engineering skills, the second year provides the first glimpses to the basic concepts of civil engineering.

Students are also encouraged to undergo field experience at the end of fourth semester itself. The subsequent year focuses heavily on hard core areas in Civil Engineering viz. structure, geotechnical, transport, water resources and environment. The final year revolves around the application oriented and project-based learning in areas covered in the third year.

Additionally, the students develop expertise in various specializations with the help of widely-diverse departmental elective courses in the fourth year. The students are encouraged to develop an in-depth understanding of a particular subject by performing a twenty-four credit B.tech project.





# Course Curriculum

- Geomatics Engineering
- Structural Mechanics
- Fluid Mechanics
- Structural Analysis
- Soil Mechanics
- Civil Engineering Materials
- Infrastructure Drawing and Estimation
- Foundation Engineering
- Numerical Methods in Civil Engineering
- Design of Reinforced Concrete Structures
- Water Supply and Wastewater Engineering
- Water Resources Engineering
- Transportation Engineering
- Construction Planning and Management
- Design of Steel Structures
- Design Studio



## **Structural Engineering:**

- Seismic response, damage and vulnerability of structures in Patna for future earthquakes
- Structural Design Review of Budha Smriti Stupa and Museum at Vaishali, Bihar.
- Vetting of structural design and drawing of civil structures for Ganga River Front Development

## **Geotechnical Engineering:**

- Liquefaction Assessment of Vaishali Stupa Site
- Review of the Structural and Geotechnical Design for ISBT Patna, Bihar.

## **Environmental Engineering:**

- Development of Ganga Grams under Namami Gange Programme with Support of Technical Institutions.
- Evaluate the fate and transport and implication of engineered nanoparticle retention in porous media.
- Arsenic immobilization by in situ synthesis of iron based absorbent under reducing environment within porous media.
- Varied profiling of bio-macromolecules for energy and byproduct assessment employing electrochemical tools.

# LAB FACILITIES

- Structural Engineering and Concrete Technology Lab
- Geotechnical Engineering Lab
- Surveying Lab
- Soil Dynamics Lab
- Environmental Engineering Lab
- Water Resource Engineering Lab
- Transportation Engineering Lab
- Railway Engineering Lab
- Computer-Aided-Design Lab





# STUDENT'S EXPOSURE

## Internship

The students are encouraged to undergo internship both after second and third year. The present batch as well as pre-final year batch have underwent relevant internships at renowned institutions. Some of the prominent institutions include University of New South Wales, L&T, Gammon India, BPCL, DMRC, NHAI, Indian Railways, RITES, IIT Kanpur, IIT Bombay, IIT Guwahati.

## ACE

- ▶ The Association of Civil Engineers is a student club established to proliferate knowledge & provide industrial exposure by bringing corporates, professors and students on common platform.
- ▶ The various activities include technical seminars, research practices, competitions and quizzes. The students are also encouraged to participate in various fests to enhance their technical skills.



# SAMNIVESHA



- ❖ Samnivesha is the two-day civil technical fest of IIT Patna organized by ACE of DCEE which started this year. The idea behind Samnivesha was to provide people with the glimpse of depth of beauty of the field of Civil Engineering and the idea was certainly fulfilled. The two days provided are certainly something to behold. The maiden edition witnessed a footfall of over 300 people from outside the campus of IIT Patna.
- ❖ The events organized are spectacular and interesting for each and everybody present. Each and every events saw a huge number of participation from students. Workshops and Quiz are also organized for the participants. Other events which caught participants eyes were Richter 9.0, Blueprint, House of Cards, Research Conclave.
- ❖ The first edition of Samnivesha proved to be the spectacle it had promised to become.

# Contact US

## Training & Placement Cell

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