

INDIAN INSTITUTE OF TECHNOLOGY, PATNA

Department of Civil & Environmental Engineering

PLACEMENT BROCHURE

M.Tech(2021-2023)





ABOUT US

Keeping in mind the infrastructure requirements for improved quality of life in a growing society as well as for industry and economic development, the need of the hour is to focus on Civil Engineering with interdisciplinary approach.

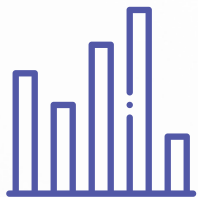
In order to satisfy the current societal needs and growing industry demands, the M. Tech in Civil Engineering program started in 2014 under the aegis of Department of Civil and Environmental Engineering at Indian Institute of Technology Patna intends to be at the forefront of imparting engineering education by amalgamating traditional Civil Engineering with modern techniques.

The program is designed to provide in-depth knowledge in the fundamentals, design, analysis and implementation of solutions for modern-days Civil Infrastructure problems. Moreover, the program intends to emphasize application-oriented and thesis/project-based learning.

CURRENT BATCH STRENGTH

B. TECH - 166
M. TECH - 29
PH. D. - 53

TOTAL NO. OF PH. D. AWARDED :- 4



MESSAGE FROM HOD

DR. VAIBHAV SINGHAL
HEAD, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
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We are a part of modern and growing IIT founded in 2008. Presently department provides MTech degree in Civil Engineering. I am happy to inform that from this academic year (2022-23) department is starting two specialized MTech program in Structural & Geotechnical Engineering.

The Department of Civil and Environmental Engineering (DCEE) at IIT Patna has continually upgraded itself in terms of academic programs and all research infrastructure including state of the art laboratories.

The post-graduate syllabus of the Department and its research activities are focused on five specialized areas of Civil Engineering such as Structural, Geotechnical, Transportation, Water resources and Environmental Engineering. Apart from core courses, our curriculum provides flexibility to students to choose elective courses of interdisciplinary nature.

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 industry-academia 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.

I heartily welcome both the recruiters and our post-graduate 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.

FACULTY MEMEBERS



Dr. Amarnath Hegde
(Geotechnical)



Dr. Arvind Kumar Jha
(Geotechnical)



Dr. Avik Samanta
(Structural)



Dr. Bachu Anil Kumar
(Transpotation)



Dr. Kausik Roy
(Structural)



Dr. Om Prakash
(Water Resources)



Dr. Subrata Hait
(Environmental)



Dr. Pradipta Chakraborty
(Geotechnical)



Dr. Sudhir Verma
(Transpotation)



Dr. Vishal Deshpande
(Water Resources)



Dr. Sourav Gur
(Structural)



Dr. Vaibhav Singhal
(Structural)



Dr. Ram Krishna Bag
(Geotechnical)



Dr. Syed K .K Hussaini
(Transpotation)



COURSES OFFERED

CORE COURSES

ELECTIVE COURSES

**ADVANCED
ENGINEERING
MATHEMATICS**

**CIVIL ENGINEERING
DESIGN I&II**

**FINITE ELEMENT
METHODS**

**TECHNICAL
COMMUNICATION**

**CIVIL ENGINEERING
LAB I&II**

**ADVANCED STRUCTURAL ANALYSIS
STRUCTURAL DYNAMICS
ADVANCED FOUNDATION ENGINEERING
PAVEMENT MATERIALS
FUNDAMENTALS OF SOIL BEHAVIOR
TRAFFIC ENGINEERING AND HIGHWAY SAFETY
INDUSTRIAL POLLUTION CONTROL AND PREVENTION
RAILWAY ENGINEERING
OPEN CHANNEL HYDRAULICS
GEOTECHNICAL EARTHQUAKE ENGINEERING
ECONOMETRICS
TIME SERIES ANALYSIS
EARTHQUAKE-RESISTANT DESIGN OF STRUCTURE
GROUNDWATER HYDROLOGY
ADVANCED FLEXIBLE PAVEMENT ANALYSIS AND DESIGN
GEOENVIRONMENTAL ENGINEERING
AIR POLLUTION AND CONTROL
SOIL EXPLORATION
HIGHWAY GEOMETRIC DESIGN
GROUND IMPROVEMENT TECHNIQUES & REINFORCED EARTH
SITE REMEDIATION
ROCK ENGINEERING**











BROAD AREA OF RESEARCH (LAST 3 YEARS)

- Analyzing driver behavior under naturalistic driving conditions.
- Mechanically stabilized Earth Retaining Walls.
- Ground Water Surface Water Interactions.
- Geothermal Energy (Energy Piles).
- Use of Shape Memory Alloy (SMA) in Shear Link Damper.
- Evaluation of FWD IRC115
- Protection of buried pipeline using EPS Geof foam.
- Seismic response of adjacent building structure connected with super- elastic damper: comparison with yield damper.
- Land feasibility analysis using geo spatial tools for water harvesting planning.
- Travel Time Reliability Analysis of Public Transit Buses using GPS Data.
- Volume change behavior and hydraulic conductivity of sand- and slag- bentonite mixes modified using Nano-clay particles.
- Prediction of Dynamic responses of MSE wall using artificial neural modelling









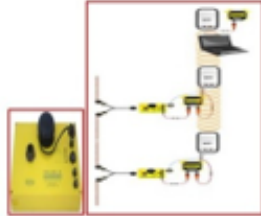
RESEARCH LABS

STRUCTURAL ENGINEERING & CONCRETE TECHNOLOGY LAB

		
Reaction Frame	Seismic Accelerometer and Data Acquisition System (large scale)	Base Shaker
		
Experimental setup to find bending moment in portal frame	Universal Testing Machine	Ultrasonic Concrete Testing Machine
		
Seismic Accelerometer and Data Acquisition System (small scale)	Experimental setup of continuous and indeterminate beam	Rebound Hammer



GEOTECHNICAL ENGINEERING LABORATORY

		
Mercury Intrusion Porosimetry (MIP)	Temperature controlled oedometer (In-house developed)	Electrical Resistivity Meter
		
Cyclic Plate Load Test	Fredlund SWCC Device	Water potential measurement apparatus
		
Automatic compactor	Pile Integrity Test Apparatus	MASW Test Apparatus








TRANSPORTATION AND RAILWAY ENGINEERING LABORATORY

		
Bitumen Extractor	Trazer suite	5 C Signal Conditioner
		
Stabinger Visco 3000	DMS Apparatus	AB Penetrometer
		
Automatic compactor	P.I Test Apparatus	LWD 6000 BLE
		
Large-scale direct shear apparatus	Large-scale pullout apparatus	Rail Track Testing Facility
		
LSRB Permeability Apparatus	Deval Abrasion Test	Ductility Test Apparatus









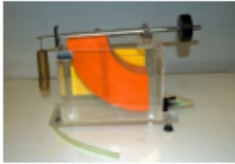


ENVIRONMENT ENGINEERING LABORATORY

		
DLS Particle size analyzer (Anton paar- Litesizer 500)	Malvern-Zeta sizer (ZS-90)	UV Visible Spectrophotometer, Thermo Scientific – Evolution 220
		
Ion Chromatography, Metrohm -882 Compact IC Plus	Total Organic Carbon (TOC) Analyzer, IO Analytical –Aurora 1030	Atomic Absorption Spectroscopy (Flame &Furnace) Thermo Scientific -iCE3500
		
Inductively coupled plasma mass spectrometry (ICP-MS) Agilent -7800	Malvern - Nanoparticle Tracking Analyzer (NS300)	Carbon hydrogen nitrogen sulfur (CHNS) analyzer, LECO-Truespec micro


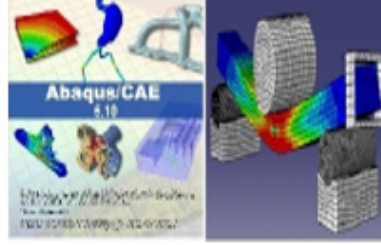
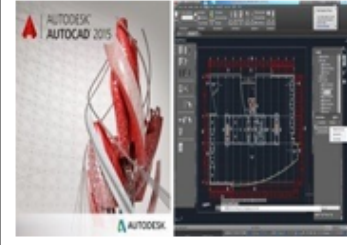


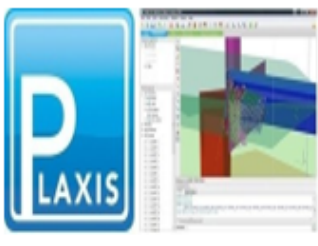
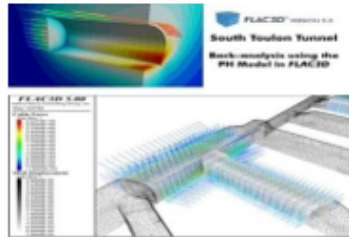

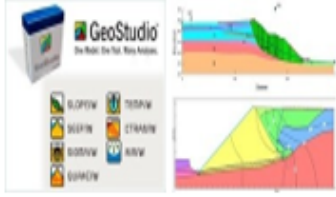


WATER RESOURCES ENGINEERING LABORATORY

		
Floating body apparatus	Bernoulli apparatus	Seepage Flow Apparatus
		
Hydrograph after precipitation with speed sensor	Centrifugal Pump and Speed Sensor	Hydraulic Flume
		
Base Module Apparatus	Orifice meter Apparatus	Hydrostatic pressure measuring apparatus



CAD LABORATORY

		
STAAD-Pro & STAAD-Foundation	ABAQUS 6.12	AutoCAD 2015
		
Matlab R2016a	SAP2000 v16	Plaxis 2D & 3D
		
FLAC 3D & 2D	LISCAD	GeoStudio



GEOMATICS ENGINEERING LABORATORY

	
Total Station	Electronic Theodolite
	
Global positioning system	Differential Global positioning system

WORKSHOP





Student's Activities

Association of Civil Engineers (ACE)

ACE is a student and faculty body at IIT PATNA. It consists of UG and PG chapter. The PG chapter focuses on multiple events ranges from seminar, workshop, presentation, talks, guest lecture, recent developments in civil engineering, sports activities and many more. It gives platform to students and facilities to interact with each other which helps them to know the ongoing research in the institute. The organization also looks after students physical and mental health.

Samnivesha

Samnivesha is the two-day civil technical fest of IIT Patna organized by ACE of DCEE. 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. 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.





UNIQUENESS OF M. TECH IN CE AT IITP

In Bihar, IIT Patna is one of the few institutes those provide master's degree in Civil Engineering.

The courses offered here, are not bound to be from a particular discipline. Students get freedom to opt for the field of study, based on their interests.

The design courses provide holistic idea of various design which include Buildings, Water tanks, Highways, Railways, Retaining walls, Foundations, Water resources, etc.

Design courses include the use of many software's which often are used in industry practices.

The program is designed to provide in-depth knowledge in the fundamentals, design, analysis, and implementation of solutions for modern- days Civil Infrastructure problems.

Moreover, the program intends to emphasize application-oriented and thesis/project-based learning.

SPONSORED PROJECTS

Title	Sponsoring Agency	Budget	Duration
Robust and reliability-based design optimization and performance assessment of super elastic shape memory alloy (SMA) damper for seismic vibration control of structures	SERB	16.73 Lakhs	24 months
Performance based bituminous mix and road design	SERB	28.38 Lakhs	24 months
Experimental and Numerical Investigation of Interlocking Details for Stone Masonry under Quasi-Static Cyclic Loading	Building Construction Department, Govt. of Bihar	9.58 Lakhs	9 months
In-situ remediation of arsenic by ferrous sulfide under heterogeneous porous media Up-scaling effect and evaluation of long-term fate	DST-WTI	47 Lakhs	36 months
Experimental evaluation of THM processes in smectite clay and their key barrier functions	BRNS, Dept. of Atomic Energy	35.48 Lakhs	36 months
Study of variation in the flow hydrodynamics around a circular bridge pier in a sand mined stream channel	SERB	27.27 Lakhs	24 months
Performance Assessment of Roads Constructed using waste plastics	NRIDA	20.50 Lakhs	18 months
Seismic strengthening of unreinforced masonry building using ferrocement bands	CSIR	28.9 Lakhs	36 months
Seismic design and performance verification of confined masonry walls for medium rise buildings	SERB	26.4 Lakhs	36 months
Analysis and Modelling of Driver Behavior using Naturalistic Driving Data under Indian Traffic Conditions	SERB	28.42 Lakhs	24 months
Performance Evaluation of Cement Concrete Pavements in Rural Roads	NRIDA	22.16 Lakhs	12 months

PAST RECRUITERS



OUR ESTEEMED ALUMNI

Purushottam k
Chaudhary
CD,
Govt. of Bihar

Shailendra Kumar Singh,
JTS,
IIT Patna

Abhishek Anand
Engineering wing
Govt. of Bihar

Kumar Nishant Ujjawal,
RCD
Govt. of Bihar

Pintu Kumar
Asst. Prof,
Cambridge Inst. of
Tech

Nishant Niloy
Assoc. Eng,
COWI India Ltd.

Dr. Vishal Puri
Asst. Prof,
J C Bose University,
YMCA

Ravishek Kumar
Assistant Executive
Engineer
MoRTH

Shubham Kashyap
Software developer
Bridge i2i

Pranaw Ambastha
PGET
L&T Constructions

Pushpraj Mandloi
PGET
L&T Constructions

Avinash Mishra
Software Researcher
HCL

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