DEPARTMENT OF CIVIL ENGINEERING
IIT KANPUR

PLACEMENT BROCHURE 2019-20
ABOUT US

The Department of Civil Engineering at IIT Kanpur is producing since 1961, high quality technical manpower needed by industry, R&D organizations, and academic institutions. The Department offers B.Tech., B.Tech-M.Tech Dual degree in Civil Engineering, and M.Tech. degree in Civil Engineering with six specializations, i.e., Structural Engineering, Geotechnical Engineering, Hydraulics and Water Resources Engineering, Transportation Engineering, Geoinformatics, and Infrastructure Engineering and Management. An interdisciplinary M.Tech program in Environmental Engineering and Management, offered by the Department is an unique program across the country. The Department also has a vibrant Ph.D. program in all the above mentioned specializations, including Environmental Engineering. The academic activities of the Department emphasizes deep understanding of fundamental principles, development of creative ability to handle the challenges of Civil Engineering, and the analytical ability to solve problems which are interdisciplinary in nature. The Department also encourages its students to engage in extra-curricular and co-curricular activities, essential for development, nurturing of team spirit, and developing organizational skills. The faculty members of the department are involved in high quality research and consultancy activities, and they continue to enjoy academic leadership role in the country.

The department has 36 faculty members to nurture about 180 students passing this year.

STUDENT DEMOGRAPHICS
RESEARCH FACILITIES

- **STRUCTURAL ENGINEERING LABORATORY**
  - Structural Strong Floor and Reaction Frames: Model 600RD Load Frame
  - Loading Devices and Servo-Controller: MTS 407 Controller, MTS 458.10 Controller, Closed Loop Servo Hydraulic Actuator
  - Electronically controlled sensors: LVDTs/DCDTs, strain gauges, Velocity Meters (induction type) and Accelerometers (both force balance and capacitive types), IMPACT - ECHO Instrument
  - Concrete Handling Facilities and Measurement of Concrete / Masonry Properties
  - Ambient Vibration Survey System (AVSS), Forced Vibration Survey System (FVSS)
  - Electro Dynamic Shaking Table, Servo-Hydraulic Shake Table, Starterkit "Wireless Accelerometer & BeanGateway Outdoor & BeanScape Multi-WSN"
  - Fiber Optic Based Temperature and Strain Measurement system
  - Pseudo-Dynamic Testing Facility

- **GEOTECHNICAL ENGINEERING LABORATORY**
  - Advanced Cyclic Triaxial Testing Facility, In-situ Testing, SCPT Plate Load Test Facility
  - Spectrum Analyzer for Surface Waves, Seismic Down-Hole Testing Facility
  - Geotechnical Digital System (GDS), Geosynthetics Testing Facility for Geogrids and Geonets
  - Study of Seismic behavior of soil, Model testing on footings

- **HWRE LABORATORY**
- TRANSPORTATION ENGINEERING LABORATORY
  - Centrifuge Bitumen Extractor, Marshall Test, Fatigue Test for Bituminous Mixes, Profilograph
  - Rotational Viscometer, British Pendulum Tester, Driver Testing Equipment, Traffic Speed Measurement Radar
  - Stone Polishing Machine, Thin Film Oven Test, Asphalt Content Tester by Ignition Method
  - 91 GPS Set-up, Vehicle Detection and Classification System

- ENVIRONMENTAL ENGINEERING LABORATORY
  - Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and Atomic Emission Spectrometry (ICP-OES), Microwave Plasma Atomic Emission Spectrometry (MP-AES), Ion Chromatograph (IC), High Performance Liquid Chromatograph, AAS, TOC, CHNOS Analyzer, GC-ECD-FID
  - Weather Monitoring Station, UV Visible Spectrometer, HDTLC, GC-MS, Optical Particle Counter, Scanning Mobility Particle Sizer
  - Aerosol Mass Spectrometer, Micro-Orifice Uniform Deposition Impactors, Aerodynamic Particle Sizer, Cloud Condensation Nuclear Counter
  - Particle Soot Absorption Photometer, Particle Absorption Soot Photometer, Cloud Combination Probe, Condensation Particle Counter, Fog Chamber, Optical Particle Sizer, Micro Pulse Lidar
  - Sun photometer, Gas Analyzers (Ozone, Sulfur Dioxide, Carbon Mono Oxide, Nitrogen Oxides), Scanning Mobility Particle Sizer, High Performance Computing Clusters

- GEOINFORMATICS LABORATORY
  - Robotic and Motorized Total Stations, Digital and Auto Levels, Digital Theodolites, Single and Dual Frequency Geodetic Quality Differential GPS Receivers, Navigational GPS Receivers,
  - Permanent GPS Reference Station for Engineering and Scientific Applications, Terrestrial Laser Scanner, Range Camera, Integrated GPS and INS system, Digital Photogrammetric Workstation,
  - Software for Geospatial Applications: ERDAS Imagine, ERMapper, ArcInfo and ArcView,
  - AutoDesk and Bentley Microstation Suites, Terrascan, Terramodeller, Polyworks, Leica
  - Photogrammetry Suite.
RELEVANT COURSES

• **Structural Engineering**
  - Earthquake Analysis and Design
  - Durability of Concrete Structures
  - Engineering Mechanics
  - Stability of Structures
  - Structural health Monitoring
  - Finite Element Methods

• **Geotechnical Engineering**
  - Foundation Dynamics
  - Foundation Engineering
  - Advanced Geotech. Engineering
  - Geotechnical Measurements and Exploration
  - Ground Improvement Techniques

• **Hydraulics Engineering**
  - Advanced hydraulics
  - Advanced hydrology
  - Introduction to AI
  - Eco hydrology
  - River Science
  - Computation techniques in hydraulics

• **Transportation Engineering**
  - Characterisation of Pavement Materials
  - Pavement analysis and Design
  - Analysis and Design of transportation infrastructure
  - Airport systems planning and design
  - Traffic Engineering
  - Urban Transportation System Planning
• **Infrastructure Engineering & Management**
  - Infrastructure Asset Management
  - Special Concretes
  - Construction Management
  - Basic Quality & Safety in Construction
  - Infrastructure Financing
  - Construction Methods
  - Principles of Environmental Management

• **Environmental Engineering & Management**
  - Physio-Chemical Treatment of Water
  - Water supply & wastewater disposal systems
  - Environmental quality & pollution monitoring
  - Air pollution & its control
  - Solid waste management

• **Geoinformatics**
  - Introduction to remote sensing
  - Introduction to Geodesy
  - Introduction to GIS
  - Laser scanning technologies & application
  - Satellite data processing & its application
  - Geospatial data processing
  - Global Navigation Satellite System (GNSS)

• **Inter – Disciplinary Courses* **
  - C Programming Language
  - Data Structures and Algorithms
  - Machine Learning
  - Microeconomics

*Open Electives

Students also have learning edge through courses in various software like SAP, QGis, ArcMap, Matlab.

Along with courses, students had also completed Survey Camp held at Chitrakoot. Many talks and seminars are also organized by Industries, tie-up institutes( like Utokyo, Nihong University, University of Buffolo, etc).
FACULTIES
Structural Engineering

• Vinay K Gupta, Ph.D. (Arizona, Tucson)
  Area of Interest: Random vibrations, Earthquake engineering.

• Sudhir Mishra, Ph.D. (UTokyo)
  Area of Interest: Durability and deterioration of concrete structures, Non-destructive testing, Concrete materials.

• Sudhir K Jain, Ph.D. (CalTech)
  Area of Interest: Earthquake Engineering, Structural Dynamics

• Sudib K Mishra, Ph.D. (Arizona, Tucson)
  Area of Interest: Multiscale, Multiphysics in Mechanics and Materials, Stochastic, Robust Optimization of Structures, Uncertainty, Reliability of Structures, Structural Damage and Health Assessment.

• Suparno Mukhopadhyay, Ph.D. (Columbia)
  Area of Interest: Structural Identification and Health Monitoring, Structural Dynamics, Earthquake Engineering

• Durgesh C Rai, Ph.D. (Michigan, Ann Arbor)
  Area of Interest: Experimental seismic behavior of structures, Seismic evaluation and strengthening, Energy dissipation devices, Masonry and Steel-RC composite members

• Samit Rai Chaudhuri, Ph.D. (California, Irvine)
  Area of Interest: Structural dynamics and earthquake engineering, Performance evaluation of structural and nonstructural components and systems, Performance-based design and structural rehabilitation, Seismic soil-structure interaction, Structural health monitoring, Structural testing.

• Harish K Venkatnarayanan, Ph.D. (Clemenson)
  Area of Interest: Microstructure of cement based material, Material characterization techniques, Advanced cementitious materials, Sustainable construction materials, Repair and rehabilitation of concrete structures.

• Chinmoy Kolay, PhD (Lehigh University, USA)
  Area of Interest: Behaviour of structures under extreme load events, Real-time hybrid (pseudodynamic) simulation, Structural dynamics and control, Nonlinear structural analysis, Numerical techniques, Soil-structure interaction, Renewable building material
**Geotechnical Engineering**

- **Rajesh Sathiyamoorthy, Ph.D. (IITB)**

- **Prishati Raychowdhury, Ph.D. (California, San Diego)**
  Area of Interest: Soil dynamics, Geotechnical earthquake engineering, Seismic soil-structure interaction.

- **Nihar R Patra, Ph.D. (IITKGP)**

- **Priyanka Ghosh, Ph.D. (IISc, Bangalore)**
  Area of Interest: Bearing capacity of foundations and Stability of slopes under both static and seismic cases, Method of characteristics, Upper bound limit analysis and Finite element analysis, Liquefaction analysis.

- **Arghya Das, Ph.D. (University of Sydney)**
  Area of Interest: Constitutive modeling of geomaterials, Micromechanics of granular materials, Bifurcation & instability, analysis in geomaterials, Numerical & physical modeling in geotechnical engineering.

**Hydraulics and Water Resource Engineering**

- **Saumyen Guha, Ph.D. (Princeton)**
  Area of Interest: Anaerobic Wastewater Treatment, Bioremediation, Microbial Ecology, Fate and Transport of Heavy Metals in the subsurface, Nutrient uptake in plants.

- **Ashu Jain, Ph.D. (Kentucky)**
  Area of Interest: Rainfall-Runoff Modelling, Surface Hydrology, Stochastic Hydrology, Neural Networks and Genetic Algorithms.

- **Richa Ojha, Ph.D. (Purdue)**
  Area of Interest: Flow and transport in porous media, Scaling of hydrological processes, Hydrologic extremes.

- **Rajesh Srivastava, Ph.D (Arizona, Tuscon)**
  Area of Interest: Flow and transport through variably saturated porous media.

- **Shivam Tripathi, Ph.D. (Purdue)**
  Area of Interest: Statistical hydrology, Sediment transport, Eco-hydrology.
Transportation Engineering

• Partha Chakraborty, Ph.D. (Delaware)

• Animesh Das, Ph.D. (IITKGP)
  Area of Interest: Pavement materials, Pavement design, Pavement evaluation and maintenance.

• Priyanka Ghosh, Ph.D. (IISc, Bangalore)
  Area of Interest: Bearing capacity of foundations and Stability of slopes under both static and seismic cases, Method of characteristics, Upper bound limit analysis and Finite element analysis, Liquefaction analysis

• Arghya Das, Ph.D. (University of Sydney)
  Area of Interest: Constitutive modeling of geomaterials, Micromechanics of granular materials, Bifurcation & instability, analysis in geomaterials, Numerical & physical modeling in geotechnical engineering.

Infrastructure Engineering & Management

• Sudhir Mishra

• Harish K Venkatnarayanan

• Vinod Vasudevan, Ph.D. (Nevada, Las Vegas)
  Area of Interest: Traffic safety, Sustainable transportation, Highway financing, Policy analyses.

• Syam Nair, Ph.D (Texas A&M)
  Area of Interest: Pavement materials, Pavement maintenance and rehabilitation, Recycling of infrastructure materials, Chemical stabilization of soils/aggregate, Utilization of industrial by-products

• Purnendu Bose, Ph.D. (Massachusetts, Amherst)
  Area of Interest: Physico-chemical processes for water and waste water treatment, Advanced oxidation processes for water and wastewater treatment, Abiotic remediation of groundwater resources.

• Mukesh Sharma, Ph.D. (Waterloo)
  Area of Interest: Air quality modelling and management, Fate processes of organic pollutants and parameter estimation.
- Onkar Dixit, Ph.D. (Cambridge)

- Nihar R Patra

Environmental Engineering & Management

- Purnendu Bose
- Mukesh Sharma

- Anubha Goel, Ph.D. (Maryland)
  Area of Interest: Characterization of emissions from vehicular exhaust, Size segregated distribution of particulates and organic pollutants on aerosols, Environmental modeling, Fate and transport of pollutants, Solid Waste Management

  Area of Interest: Development of instruments for aerosol measurement, engineering control of particles in ambient and indoor settings, physico-chemical characterization of atmospheric pollutants, personal exposure assessment and health effects of inhaled particles.

- Abhas Singh, Ph.D. (Washington, St.Louis)
  Area of Interest: Environmental geochemistry of heavy metals and inorganic contaminants, Predict inorganic contaminant fate and transport through surface complexation and flow-through reactor modeling, Develop tools to target contaminant remediation in natural as well as engineered environments.

- Vinod Tare, Ph.D. (IITK)
  Area of Interest: Water and wastewater treatment, modelling and simulation of environmental systems.

- Sacchida N Tripathi, Ph.D. (Purdue)

Geoinformatics

- Onkar Dixit

- B. Nagarajan Ph.D (Ohio)

- Bharat Lohani, Ph.D. (Reading)
  Area of Interest: 3D laser imaging and LCS measurement, Propagation modelling using high resolution LiDAR data (flood, sound, GPS signal), LiDAR simulator-airborne and spaceborne

- Salil Goel, Ph.D. (Melbourne & IIT Kanpur)
  Area of Interest: Unmanned Aerial Vehicles (UAVs), LiDAR, Photogrammetry, GNSS/INS Integration, Filtering and estimation, Sensor fusion

- Balaji Devaraju
PAST RECRUITERS:-

- L&T
- Exxon Mobil
- ASC Infratech
- Autodesk
- Schlumberger
- and more Core Industry

IIT Kanpur is also involved in various projects sponsored by many PSUs, Government, private sector.
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