



# DEPARTMENT OF CIVIL ENGINEERING

**CONCRETE  
TECHNOLOGY**



**ENVIRONMENTAL  
ENGINEERING**



**HIGHWAY  
ENGINEERING**



**NON DESTRUCTIVE  
TECHNIQUES**



**GEOTECHNICAL  
ENGINEERING**



**ENGINEERING  
MATERIALS**



## **PROFILE**

### **ABOUT THE INSTITUTE**

National Institute of Technical Teachers' Training and Research, Chandigarh has been established by Ministry of Human Resource Development, Government of India for the development of Technical Education. The institute has excellent laboratories, library, computer centre and modern reprographic and other production facilities. The institute offers short term courses in the areas of Civil, Mechanical, Electrical and Electronics Engineering, Educational Management, Entrepreneurship Development, Rural Development, Applied Science and Computer Science. Other prime areas include: R&D activities, Curriculum Development, Rural Development, Entrepreneurship Development, Educational film production, extension services to MHRD etc.

### **ABOUT THE DEPARTMENT**

Civil Engineering Department was established in the year 1967 along with the inception of the institute. Over the years the department has grown and at present is equipped with full fledged laboratories to provide on-the job training for technical institutes and also cater to the demands of industry. Department is having a team of experienced faculty and backup of supporting staff who are actively engaged in offering research based consultancy and testing to various state and central government organizations.

#### ***Broad Areas of Activities :***

- Academic and Research Programme
- Conferences and Training Programme
- Instructional Material Development
- Consultancy and extension Services

### **ACADEMIC AND RESEARCH PROGRAMME**

- M.E in Construction Technology and Management (Regular & Modular)
- Ph.D programmes under QIP and Off-Campus scheme

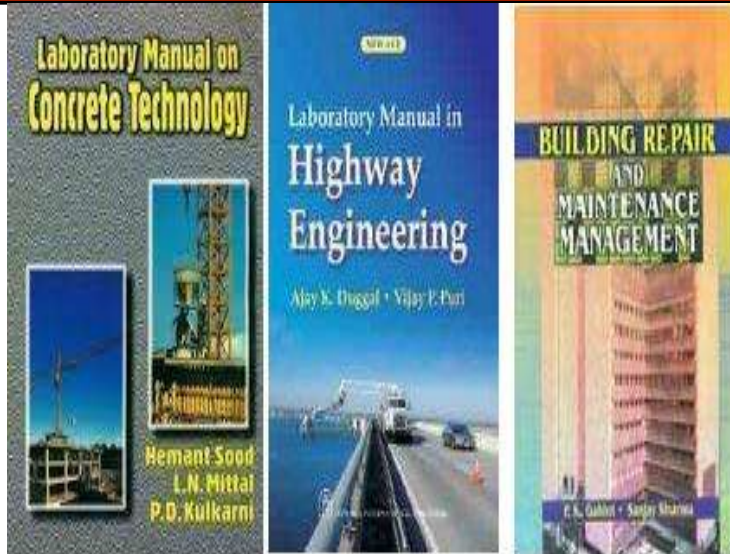
### **CONFERENCES, WORKSHOPS AND SHORT TERM COURSES – BROAD TOPICS**

- Cleaner Production Technologies
- Monitoring, Repair and Rehabilitation of Structures
- Software Applications in Civil Engineering
- Ecology, Environmental Awareness and Management
- Application of water proofing material and techniques
- Earthquake retrofitting solution and strengthening for structures
- Advanced Surveying instruments including Total Station

- Application of Remote Sensing, Digital Mapping and GPS in Civil Engineering
- Advances in Cement and Concrete including Mix Design
- Modern Building Materials and Construction Practice
- Transportation, Planning, Design and Management in Urban Area
- Soil Investigation techniques
- Disaster Management
- Project planning and Management
- Laboratory practices in Soil Engineering, Environmental Engineering, Highway Engineering
- Pavement Evaluation & Design : Construction & Maintenance of Highways

## INSTRUCTIONAL MATERIAL RESOURCES AND RESEARCH PUBLICATIONS

- Text Books -**05**
- Laboratory Manuals -**10**
- Modules, Monographs, Data Books, Work Books, Readers etc -**40**
- Educational Video films/CDs -**73**
- Educational Software Tools
- Research Publications



## LABORATORY AND TESTING FACILITIES (MAJOR EQUIPMENTS)

### CONCRETE TECHNOLOGY LABORATORY

- Automatic Compression Testing Machine (3000 KN)
- Flexural Testing Attachment
- Slump Cone Apparatus
- Electronic Universal Testing Machine (UTM) -600 kN)
- Tile Abrasion Testing Machine
- Air permeability apparatus
- Concrete Permeability Testing Equipment
- Concrete Mixer (Pan Type)
- Apparatus for self compacting concrete
- CTM (Electrically operated)



## SOIL ENGINEERING LABORATORY

- Direct Shear Apparatus
- Consolidation Apparatus (Electronic)
- SPT equipment
- Relative Density Apparatus
- Brazilian Test Apparatus
- Unconfined Compression test Apparatus
- Vane Shear Apparatus
- Grouting Machine
- Hydrometer Analysis Kit



## HIGHWAY ENGINEERING LABORATORY

- Pavement Dynamic cone Penetrometer
- Modified Marshall stability test apparatus
- CBR Apparatus (Field Type)
- Hardness Number Apparatus
- Bump Integrator (Tow away)
- Pressure Ageing Vessel with Degassing Oven
- Benkelman Beam Apparatus



## ENVIRONMENTAL ENGINEERING LABORATORY

- PC Double Beam Spectrophotometer
- Flame Photometer
- Microprocessor based Colorimeters
- BOD Track Apparatus
- COD Digestion Apparatus
- Rapid Total Coliform Apparatus
- Kits for Arsenic, Nitrate, Fluoride, Phosphate
- Multigas Analyser
- Sound Level Meter
- Oil and Grease Analyser
- High Volume Sampler



## NON DESTRUCTIVE TESTING LABORATORY

- Ultrasonic Pulse Velocity Tester
- Core Cutting Equipment
- Rapid Chloride Test Kit
- Ferrocanner
- Concrete Test Hammer NR type
- Concrete Test Hammer pendulum type
- Concrete Surface Resistivity Meter
- Concrete Pull Out Test Apparatus



## SURVEYING/REMOTE SENSING LAB

- Total Station
- Terramodel Software
- Zeiss Seconds Theodolite -010B
- Micro Optic Theodolite
- Universal Automatic Level
- GPS Hand Sets
- Map Info Professional Software



## COMPUTER APPLICATION LABORATORY

- AutoCAD 2023
- STAAD Pro Connection Client
- Primavera
- Open Roads
- Storm CAD
- Sewer Gems
- Water Gems



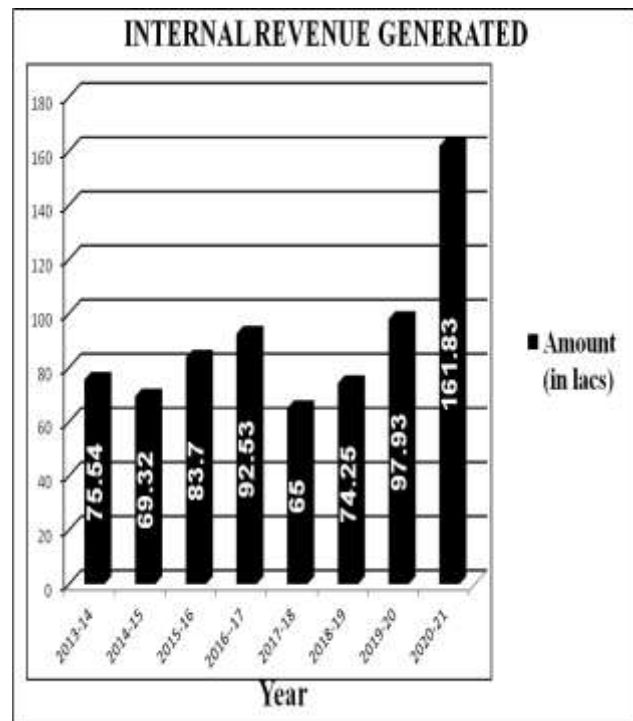
## ADVANCED COMPUTING LAB

One more lab is added which caters to interdisciplinary research and also to encourage students to develop algorithms and program codes for Civil Engineering. In addition to the above list mentioned in Computer Application Lab software, this lab also includes the following software

- ETABS
- MATLAB
- Abaqus
- Context Capture Viewer
- Microstation

## CONSULTANCY AND RESEARCH BASED PROJECTS (MAIN AREAS)

- Concrete Mix Design
- Design of Highway & Airfield Pavements
- Non Destructive Testing
- Design of Bituminous Mixes, Quality control in highways
- Testing of Civil Engineering Materials
- Soil Investigations and bearing capacity determination
- Water & Waste Water Analysis
- Environmental Studies
- Repair & Rehabilitation of structures



## **MASTER OF ENGINEERING (CURRICULUM)**

- Construction Management
- Concrete Construction Technology
- Foundation Design and Construction
- Construction Costing and Financial Management
- Environmental Engineering and Management
- Building Maintenance
- Pavement Design, Construction and Maintenance
- Green Buildings and Services
- Advance Construction Technology
- Transportation Engineering
- Steel Construction Technology
- Rural Construction Technology
- Advanced Structural Design

For further details visit our website : [www.nitttrchd.ac.in](http://www.nitttrchd.ac.in)

### ***Faculty***

- Dr. Hemant Sood
- Dr. Sanjay Kumar Sharma
- Prof. Ajay K Duggal
- Prof. Vinod Kumar Sonthwal
- Dr. Amit Goyal
- Er. Himmi Gupta

### ***Technical Staff***

- Sh. Jasvir Singh Rattan
- Mrs. Jyothi P.M
- Sh. Sohan Lal