

INFORMATION BROCHURE



OUR VISION

To build a vibrant multicultural learning environment founded on value based academic principles, wherein all involved shall contribute effectively, efficiently and responsibly to the nation and global community.

DEPARTMENT OF CIVIL ENGINEERING NATIONAL INSTITUTE TECHNOLOGY, HAMIRPUR HIMACHAL PRADESH



Dr. Raman Parti
Professor & Head
Civil Engg. Department

The publication of information brochure for Department of Civil Engineering is a unique storehouse of information on the expertise of faculty, physical infrastructure and facilities available in the Department. The details contained in the document will be of immense use to engineers/managers in government, public & private organizations and industries looking for collaboration in R & D activities, consultancy, Laboratory and on- site testing facilities. This will be useful to the students seeking admission in Civil Engineering and facilitate the industries/organizations for the placement of students. I am sure that this brochure will be well received by those who wish to interact with the Department on various aspects pertaining to Civil Engineering

- Dr. Raman Parti



ABOUT THE DEPARTMENT

National Institute of Technology, Hamirpur was established in the year 1986 as a joint enterprise of the GOI and Govt. of Himachal Pradesh as a Regional Engineering College which was converted to NIT bestowing the status of a deemed University by MHRD in 2002. The institute has made tremendous strides in the areas of curriculum development, laboratory & infrastructure development and research. The Data quest has ranked the Institution at 20th position among top Technical Institutions of the country in the year 2007. During April 2008, World Bank auditor assessed the impact of TEQIP and rated the institute at 9.4 on a ten point scale. The institute has established collaborations with British (Sheffield Hallam University) and Australian (University of Technology, Sydney) Universities.

The Department of Civil Engineering is one of the primary departments of National Institute of Technology, Hamirpur, which was established in the year 1986. Since its establishment, the Department has been imparting quality education to B. Tech students by reviewing its curricula from time to time, modernizing its laboratories with state of the art equipments and latest softwares. The classrooms are well equipped with all modern electronic audio-visual facilities. The Post Graduate programmes in Water Resources Engineering, Geotechnical Engineering & Under Ground Structures and Ph.D programmes in all disciplines of Civil Engineering have been started. The future plan is to start M. Tech in Structural Engineering, Transportation and Environmental Engineering. These Programmes will impart advanced academic training and provide better opportunities for research and consultancy.

OBJECTIVES

- To provide quality education and training to our graduates to cope up with international standards.
- To update our laboratories, hardware and software from time to time.
- To conduct regular continuing education and community development programmes.
- To provide extension and consultancy services to Government, private, public and industrial sectors.
- To excel in Industrial Research and consultancy with appropriate national and International linkages and to maintain highest standards in the field of Civil Engineering.

ACADEMIC AND RESEARCH PROGRAMMES

All our programmes are accredited by National Board of Accreditation for five years since January 2008.

➤ B. Tech. (Civil) : Four Year Duration

➤ M. Tech. (Civil) : Two Year Duration

- Water Resources Engineering
- Geotechnical Engineering and Under Ground Structure

➤ Ph. D. (Civil) : Full Time/ Part Time

- Structural Engineering
- Transportation Engineering
- Geotechnical Engineering
- Environmental Engineering
- Water Resources Engineering
- Geology

FACULTY

The Department has highly learned faculty members in various areas of specializations as follows:

- Dr. R.L. Sharma, Ph.D. (Water Resources)
- Dr. V.K. Sarda, Ph.D. (Water Resources)
- Dr. R.K. Sharma, Ph.D. (Geotechnical)
- Dr. Raman Parti, Ph.D. (Transportation)
- Dr. R.K. Dutta, Ph.D. (Geotechnical)
- Dr. Pardeep Kumar, Ph.D. (Structures)
- Dr. U.K. Sharma (on lien), Ph.D. (Structures)
- Dr. R.S. Banshtu, Ph.D. (Geology)
- Dr. S.S. Katoch, Ph.D. (Environmental)
- Dr. V.S. Dogra, Ph.D. (Water Resources)
- Er. C. Parkash, M.Tech. (Geo-informatics)
- Er. U.K. Pandey, Ph.D. (Pursuing) (Structures)
- Dr. H.K. Vinayak, Ph.D. (Structures)
- Er. R.R. Dash, Ph.D. (submitted) (Environmental)

The Department of Civil Engineering believes in imparting quality education to the students & invite eminent personalities & academicians from prestigious Institutions and industries to deliver lectures.

CAREER PROSPECTS AND COURSE STRUCTURE

Based on the career prospects, the courses have been designed to lay emphasis on various specializations of Civil Engineering. The courses and curriculum are modified regularly to meet the standards of reputed foreign Universities and IIT's and to cope up with recent developments. The courses are planned with our alumni, experienced faculty from prestigious institutes and experts from industries.

PLACEMENT OPPORTUNITIES

Dream job opportunities in government as well as private sectors are available for our graduates. The popular professions range from construction, consultancy, structural design, water and wastes management, air & noise pollution control, hydropower, infrastructural related industries and research institutes. The Department maintains liaison through Coordinator (Training and Placement) with institute Training and Placement cell to arrange campus interview for U.G and P.G students by inviting core companies and reputed public sector undertakings. In addition, a number of software and I.T companies also visit the campus for recruitment of our graduates. The placement record of students for the last three years has been hundred percent.

The various reputed industries and organizations who regularly visit for campus placement are; Indian Oil Corporation Ltd., NTPC Ltd, L&T Ltd., TCE Consulting Engineers Ltd., ESSAR Group, DLF Ltd., Unitech Ltd., JP Associates Ltd., ACC Ltd., BEL, Simplex Infrastructures Ltd., Ahluwalia Contracts (India) Ltd., Satluj Jal Vidyut Nigam Ltd., A&A (P) Ltd., Shree Cement Ltd., Hindustan Construction. Co. Ltd., Satyam Computer Limited, Patni Computer Systems Ltd., Perot Systems, TS(I) Ltd., Sapient Technologies Ltd., Wipro and many more.

OUR ALUMNI

Our alumni have brought laurels to the Department by retaining top positions in the national and international organizations such as; Avake Technology Group Inc, GA Tech. Station, HCL Infocom, Centre Water Commission, Himachal Pradesh Public works Department, Himachal Pradesh Irrigation and Public health Department, IIT's, NIT's and Indian Engineering Services.

LABORATORY AND TESTING FACILITIES

The Department of civil engineering has well equipped laboratories in the specialized areas. The laboratories are well equipped with all modern equipments to cater the needs of UG and PG students as well as R&D and consultancy works. Testing facilities related to Civil Engineering is provided in our laboratories to fulfill the need of industries. The major equipments available in the laboratories are listed below:



Material Testing Laboratory

- Aggregate Crushing Value Apparatus
- Briquette Mould
- Cement Autoclave
- Compaction Factor Apparatus
- Concrete Core Cutter
- Concrete Flexural Strength Testing Machine
- Fatigue Testing Machine
- Flow Table
- Lab Pulverizer
- Laboratory Concrete Mixer
- Lambs Roller
- Le-Chatelier apparatus
- Length Compactor
- Mortar Mixer
- Platform Weighing Balance
- Vee Bee Consistometer
- Vibration Table
- Vicat Mould Apparatus



Transportation Laboratory

- Aggregate Crushing Value Apparatus
- Aggregate Impact Test Apparatus
- Automatic Compactor
- Centrifugal Extractor for Bitumen
- CBR Testing Machine (Computerized)
- Density Basket
- Deval Attrition Testing Machine
- Digital Benkelman Beam Apparatus
- Ductility Testing Machine
- Enoscope
- Los Angeles Abrasion Testing Machine
- Marshal stability Apparatus
- Radar Speedometer
- Ring & Ball Apparatus
- Standard Penetrometer
- Standard Tar Viscometer

Structural Analysis Laboratory

- Computerized Compression Testing Machine
- Beggs Deformity Apparatus
- Clark Max Wells Reciprocal Theorem Apparatus
- Columns and Struts Apparatus
- Compression Testing Machine
- Computerized Universal Testing Machine
- Curved Member Apparatus
- Deflected Beam Apparatus
- Deflection of Truss Apparatus
- Digital Load Indicator
- Digital Strain Indicator
- Elastic Beams & Continuous Beam
- Fatigue Testing Machine
- Hydraulic Jacks
- Load Cells
- Loading Frame 100 Tonnes
- L-Type and N-type Rebound Hammer
- Pipe Testing Apparatus
- Portal Frame
- Redundant Joint Apparatus
- Two & Three Hinged Arch Apparatus
- Unsymmetrical Bending Apparatus



Hydraulic & Irrigation Laboratory

- Automatic Water Level Recorder
- Automatic Weather Station
- Bernoulli's Theorem Apparatus
- Current Meter
- Darcy's Law Apparatus
- Electrical Analogy Apparatus
- Hele Shaw Apparatus
- Hydraulic Bench
- Jet Impact Apparatus
- Meta Centric Height Apparatus
- Orifice Meter
- Pelton Wheel Turbine Test Rig
- Pipe Friction Apparatus
- Reciprocating Pump Test Rig
- Recirculating Tilting Hydraulic Flume
- Reynold's Apparatus
- Stoke's Law Apparatus
- Turbulent Flow Apparatus
- Ultrasonic Pulse Velocity Measurement equipment with Display Unit
- Venturi Meter
- Wind Tunnel

Environmental Laboratory

- Automatic BOD Sensor
- Closed Reflux Automatic COD Digester
- Digital pH Meter
- Digital Programmable Spectrophotometer
- Digital Turbidity Meter
- DO, BOD Digital Probe
- High Volume Sampler
- Microscopes
- Moisture Balance
- Portable Water Analysis Kit

Geotechnical Laboratory

- Computerized Triaxial Shear Test Equipment
- Computerized Consolidation Test Apparatus
- Core Cutting, Polishing and Lapping Machine
- Brazilian Test Apparatus
- Slake, Durability Test Apparatus
- DCPT, SPT, Static Cone Penetration Test Apparatus
- Shake Table
- Relative Density Equipment
- Point Load Index Test Apparatus
- Direct Shear Test Apparatus
- Resistivity Meter
- Conventional Triaxial Test Equipment
- Infrared Moisture Meter
- Digital Frequency Indicator & Vibration Meter



Computational Laboratory

The computational facilities in the department are at par with many prestigious institutions in the country. Department provide computer in labs with various software such as STAAD PRO 2004 suite, NISA, PLAXIS, GEO5, RM2006, ADOBE PHOTO SHOP, COREL DRAW

Surveying Laboratory

- Automatic levels
- I.O.P. level
- Mirror Stereoscope
- Pantograph & Planimeter
- Total stations of Trimble and Leica
- Transit Theodolite
- Zeiss Second theodolite

Geology Laboratory

- Electrical Resistivity meter
- Diamond Coring Portable machine
- Trinocular Petrological Microscope

R&D AND CONSULTANCY WORKS

The Department always remains in the forefront owing to R&D, planning, design, construction and consultancy services. The Department of Civil Engineering is the State Technical Agency for PMGSY and World Bank Aided Projects for roads in Himachal Pradesh. A number of research and consultancy projects have been successfully completed by the faculty of the Department and several projects are under investigation.

Sponsored Research Projects

- Forestry and Low Flows, Spatial Modeling and Open GIS Dissemination of the Science Perception-India in collaboration with IIT Delhi & University of New Castle Upon Tyne, UK
- Collection of Traffic Census Data on National Highways in HP.
- Landslide Hazard Zonation & Mitigation Measures for Kullu-Leh Area of Himalayas
- Performance based design of RCC Columns for Ductility in Coordination with IIT Roorkee
- Ductility of RCC Columns – Role of Fibers in Coordination with IIT Roorkee
- Rural Roads Pavement Performance Study (RRPPS) NRRDA, Ministry of Rural Development, Govt. of India, New Delhi
- Landslide Zonation of Dharamsala Region

Consultancy Projects

- Preparation of Feasibility Report of Various Micro-hydel Projects of Peja, Jubal Kotkhahi and Mandi.
- Design of Diversion Weir, Water Conveyance System, Desilting Basins, Penstock, Power House of Mini Hydropower Station at Keylong
- Structural Design of Buildings at Govt. Degree College Banjar, Govt. Degree College Barmoti, Electronics Complex (Chambaghat Solan), Shopping Complex (Sunder-Nagar), Workshop for repairs of Turbines (NJPC Shimla),
- Water Storage Tank, Guest House, Open Air Theater, Computer Sc. Block, Tribal Hostel, Type Five Quarters and Tribal Hostel of NIT Hamirpur
- Civil works Manual for School Buildings in Himachal Pradesh
- Status Survey of Drinking Water in Himachal Pradesh under Rajiv Gandhi Mission
- Design and Vetting of Bridges (Concrete and Steel)
- Bearing Capacity of Soils for Construction of Bridge Piers Sukrala Nallah at Hamirpur and Hatli Khad
- Design of artificial lakes, multistoried buildings and water tanks
- Test for coarse and fine aggregates, CBR Test and Testing of Bitumen, Cube Tests, Testing of steel samples
- Onsite and Laboratory examination of water and waste water parameters
- Field and Laboratory Testing of Various Soil Parameters
- Petrological Testing of Soils.

PROPOSED ACADEMIC PROGRAMMES AND CENTRES

The following academic programmes and Centers have been proposed to be introduced in Civil Engineering Department in near future:

- M.Tech. in Structural Engineering.
- M.Tech. in Transportation Engineering.
- M.Tech. in Environmental Engineering.
- M.Tech. in Infrastructural Development in Civil Engineering.
- Center for Natural Hazard Mitigation and Management.
- Center for Hydro Power.
- Center for Transportation Engineering.

CONFERENCES & TRAINING PROGRAMMES

The faculty members and technical staff regularly attend various training programmes and workshops for updating their knowledge. The Department is also actively engaged in organizing International, National Conferences, Workshops and short term courses on recent trends and developments in Civil Engineering. The following programmes have been organized in the Department in the last three years:

International Workshop

- Seismic Evaluation and Strengthening of Existing Structures

National Conferences

- National Conference on Materials & Their Applications in Civil Engineering
- National conference on Technology for Disaster Mitigation(TDM-2006)

Training programmes

- Workshop on 'Concrete Mix Design'
- Estimation, Construction & Maintenance of Public Utility Works
- Awareness Workshop & Training under Services to the Community
- Small Hydro Power
- Preparation of DPR for PMGSY
- Soil & Material Characterization.
- Capacity Building for Earthquake Risk Management

The Department is designated as State Resource Institute for National Programme for Capacity Building of Engineers in Earthquake Risk Management. Several training workshops have been organized under Pradhan Matri Gramin Sarak Yojana and Capacity Building of Engineers in Earthquake Risk Management for the field Engineers of HPPWD, HPIPHD, Panchayati Raj & HIMUDA.



FUTURE PLANS

- Enhancement of research activities through MOU with Premier National and International Institutes
- Focusing on Frontier Areas of Social Relevance and National Development
- Modernization and Upgradation of Laboratories
- Strengthening Institute-Industry Interaction
- Specialist and Training Courses in challenging areas of Civil Engineering
- Development of Infrastructure of the Department



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