



## Civil Engineering

Civil Engineering deals with engineered constructions, their planning, design, construction and management. The profession comprises of many disciplines like Structural Engineering, Geotechnical Engineering, Water Resources Engineering, Transportation Engineering and Surveying. In any activity ranging from defence and industrial development to social welfare and economic growth, it has the largest quantum of resource allocation and utilization.

The Department of the civil engineering was established in the session 2011-2012 and we are committed to have grown every year into one of the finest centers of advanced research and training in the field of civil engineering in NCR region.

The vision of the institute is to be the fountain-head of new ideas and innovation in civil engineering. Our mission is to offer world class graduate education, research guidance, and professional consultancy, outreach and manpower training as well as leadership in civil engineering. The Department's intention is to be in the forefront of advanced research in Civil Engineering and very pro-active in industrial interaction and technology development.

There are well equipped laboratories attached to different divisions for conducting teaching, research and consultancy activities in areas of Fluid Mech., Building Material, Building Planning & Drawing, Structural Analysis, Geoinformatics, Hydraulics & Machine, and Surveying.

Intake: 60

Duration: 4 yrs

## Eligibility Criteria for B.Tech Mechanical Engineering

### Eligibility:

The Candidate should be a pass in 10+2 examination with minimum 45% marks (40% in case of candidate belonging to reserved category i.e. SC category) in the below subjects taken together for BE/B.Tech from any recognized Board/University with Physics and Mathematics as compulsory subjects along with one of the following subjects:

- (a) Chemistry
- (b) Bio-Technology
- (c) Computer Science
- (d) Biology

### B.Tech-LEET:

The candidate should have passed in 3 years Engineering Diploma Course from any recognized Board/ University with minimum 45% marks (40% in case of candidate belonging to reserved category i.e. SC category). Along with Physics & Mathematics as compulsory subjects.

OR

Passed B.Sc Degree from a recognized University as defined by UGC, with at least 45% marks (40% in case of candidates belonging to reserved category) and passed XII standard with mathematics as a subject.

# Civil Engineering Labs

**STRUCTURAL ANALYSIS LAB:-** Structural analysis is the determination of the effects of loads on physical structures and their components. Structures subject to this type of analysis include all that must withstand loads, such as buildings, bridges, vehicles, furniture, attire, soil strata, prostheses and biological tissue.

- a) Unsymmetrical bending of a cantilever beam
- b) Column and struts
- c) Two and Three hinged arch apparatus
- d) Elastically coupled beam



## STRUCTURAL ANALYSIS LAB

**TRANSPORTATION ENGINEERING LAB:-** Transportation engineering or transport engineering is the application of technology and scientific principles to the planning, functional design, operation and management of facilities for any mode of transportation in order to provide for the safe, efficient, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods.

- a) Aggregates Impact test
- b) California Bearing Ratio value test
- c) Marshall stability test
- d) Los Angeles abrasion test



**TRANSPORTATION ENGINEERING LAB**

**GEOTECHNOLOGY ENGINEERING LAB:-** Geotechnical engineering is the branch of civil engineering concerned with the engineering behavior of earth materials. Geotechnical engineering is important in civil engineering, but also has applications in military, mining, petroleum and other engineering disciplines that are concerned with construction occurring on the surface or within the ground.

- a) Liquid limit and plastic limit determination
- b) Water content determination
- c) Relative density test
- d) Standard Penetration test
- e) Grain size analysis by sieve analysis and hydrometer



**SURVEYING LAB:-** The profession or work of examining and recording the area and features of a piece of land so as to construct a map, plan, or detailed description of it.

- a) Theodolite
- b) Total Station
- c) Plane Table surveying
- d) Compass Surveying
- e) Auto and Dumpy level



**SURVEYING LAB**



**CONCRETE TECHNOLOGY LAB:-** The process to choose, mix and maintain the right type ,quality and quantity of raw material to get desired type of end product in this case-concrete is called as concrete technology.

- a) Compaction factor test
- b) Slump test c) Concrete cube test
- d) Compressive strength test



**CONCRETE TECHNOLOGY LAB**

**FLUID MECHANICS LAB:-** Fluid mechanics is a branch of physics concerned with the mechanics of fluids (liquids, gases, and plasmas) and the forces on them. Fluid mechanics has a wide range of applications, including mechanical engineering, civil engineering, chemical engineering etc.

- a) Bernoulli apparatus
- b) Venturimeter apparatus
- c) Orifice Plate apparatus
- d) Centrifugal Pump apparatus
- e) Cavitation in pipe flow



**FLUID MECHANICS LAB**

**GEOLOGY LAB:-** The science which deals with the physical structure and substance of the earth, their history, and the processes which act on them.

- a) Physical properties of minerals
- b) Recognition of rocks
- c) Identification of rock forming silicates
- d) Use of Clinometers Compass