

CIVIL ENGINEERING

“Building” the World



Civil Engineering

- ▶ Civil engineering is the oldest branch of engineering.
- ▶ Civil Engineering deals with the design, construction, and maintenance of structures or public works as they are related to earth, water or in space.
- ▶ Civil Engineering is also known as the **mother of all engineering**.

Marvels of Civil Engineering

Buildings



Flyovers



Cannel



Dams



Bridge over waters



Marvels of Civil Engineering

Highways and Tunnels



Marvels of Civil Engineering

Under Water Tunnels



Green Building

- Green building (also known as green construction or sustainable building) expands and complements the building design concerns of economy, utility, durability, and comfort.
- A Green Building is one which uses less water, optimizes energy efficiency, conserves natural resources, generates less waste and provides healthier space for occupants as compared to conventional buildings.

Some Green Buildings



Start a Job/Internship

- ▶ You can start a job as a fresher in Construction, Real Estate, Infrastructure & project industry as a site engineer or for any profile which suits your academics.
- ▶ it is always advisable to get into an internship in any company related to your core domain.

▶ Salary

- In India, a student who has cleared the degree in civil engineering can get the offer of salary started from **3 lakh per annum up to 20+ lakh per annum.**
- In abroad the salary started from the **\$60000/annum to \$100000/annum.**
- There are no criteria for salary for a brilliant or experienced candidate.

Government Engineering Jobs

- ▶ Eligible for various Government Exams for class one post in various government engineering departments
- ▶ can prepare for the exams like UPSC & IES: Indian Engineering Services, State Public work departments (PWD) and other engineering departments have regular recruitment for civil engineering graduates

Some of the top companies that hire Civil Engineering graduates

- ▶ Jaypee Group
- ▶ Gammon India Ltd.
- ▶ Balaji Railroad Systems Ltd
- ▶ Punj LLOYD Group,
- ▶ Jaiprakash Associates
- ▶ Nagarjuna Construction Company,
- ▶ GMR Group
- ▶ Hindustan Construction Company
- ▶ JMC Projects Ltd
- ▶ Expert Technology
- ▶ Hiranandani Construction Pvt. Ltd
- ▶ Godrej Properties
- ▶ Prestige estates
- ▶ Oberoi Reality
- ▶ DLF
- ▶ Shaporji Palonji
- ▶ Bakeri
- ▶ Adani infra.

Some of the top companies that hire Civil Engineering graduates

- ▶ IVRCL Infrastructure & Projects Ltd
- ▶ Dr. Kelkar Consultants Pvt. Ltd
- ▶ Larsen and Toubro
- ▶ Nircon Engineering Consultants
- ▶ RDS Projects Ltd
- ▶ Macro Marvel Infrastructure Corporation Ltd
- ▶ Potential Consultants
- ▶ Backbone Projects/Infra
- ▶ Simplex Projects Ltd
- ▶ Vadakar and Associates
- ▶ Shapoorji Pallonji & Company
- ▶ Sobha Developers Limited
- ▶ Torrent Power
- ▶ TCS
- ▶ Sheladiya Cons. co.
- ▶ Linde
- ▶ Bhagvati Designs

Public Sector Companies hiring Civil Engineering Graduates:

- ▶ NTPC - National Thermal Power Corporation Limited
- ▶ BHEL - Bharat Heavy Electricals Limited
- ▶ ONGC - Oil and Natural Gas Corporation Limited
- ▶ HAL - Hindustan Aeronautics Limited
- ▶ GAIL - Gas Authority of India Limited
- ▶ SAIL - Steel Authority of India Limited
- ▶ IOCL - Indian Oil Corporation
- ▶ MGVCL, UGVCL etc. (Vij Company Ltd.)
- ▶ GSFC
- ▶ GNFC
- ▶ IPCL
- ▶ BHEL
- ▶ BARC

Popular Firms Hiring Civil Engineers:

Private Firms	Government firms
Emmar Properties	Coal India Limited
Silver Falcon	National Thermal Power Corporation Limited
Ralls Contracting	Oil and Natural Gas Corporation Limited
Shapoorji and Pallonji	Hindustan Petroleum Corporation Limited
Unicon Development Constructions	Indian Oil Corporation
Double Crown	Steel Authority of India Limited
European Contracting	Delhi Metro Rail Corporation

Go for UPSC Examinations

Civil Engineers can appear for IES (Indian Engineering Services), IPS or IAS exams

Pros:

- Highest level of working experience within 29 services of Indian Govt.
- Real feel of Power
- Extra ordinary skills
- Networking at higher govt. officials
- Privileges to enjoy.....

Cons:

- Posting across globe or country
- Max 5. years to serve at one place (Shifting)
- Social Contacts
- Not all regions are safe
- Geographical/Area/ Development related difficulties

Higher Education in India through GATE Exam

The following are the among the specializations to choose from for M.E & M.Tech post-graduation degree course.

- ▶ Structural Engineering
- ▶ Environment Engineering
- ▶ Geotechnical Engineering
- ▶ Construction Management
- ▶ Traffic and Transportation Engineering
- ▶ Hydraulics and Water Resources Engineering
- ▶ Geo-informatics
- ▶ Transportation Engineering
- ▶ Water Resource Engineering

Job opportunity in Public Sector Undertakings (PSUs)

Following are the major Public Sector Companies hiring Civil Engineering Graduates:

- ▶ NTPC – National Thermal Power Corporation Limited
- ▶ BHEL – Bharat Heavy Electricals Limited
- ▶ ONGC – Oil and Natural Gas Corporation Limited
- ▶ HAL – Hindustan Aeronautics Limited
- ▶ GAIL – Gas Authority of India Limited
- ▶ SAIL – Steel Authority of India Limited
- ▶ IOCL – Indian Oil Corporation
- ▶ BSNL – Bharat Sanchar Nigam Limited
- ▶ ISRO – Indian Space Research Organization

Management Degree (Higher studies) In India

- ▶ MBA in Construction Management, Project management, Real estate Management, Infrastructure Management are some of the courses offered by Indian universities and institutes are very much in demand
- ▶ In MBA, you learn about managing businesses as profit centers and analyze alternate investment ideas as well as HR, Marketing and Project management.
- ▶ An MBA with CE degree can be an ideal candidate to be recruited by reputed builders, Construction material manufacturers like Cement, Steel, Paint, MDF, Hardware etc. They can also be recruited by construction consultants, reputed architects and interior decorators to add value to their offerings

M.S. in Civil Engineering in the U.S., Canada, UK, South East Asia, and Australia

- ▶ Depending on your score in GRE, preferably 300+ you can choose one of the top-ranking universities for M.S in civil engineering with a specialization of your choice in foreign universities.
- ▶ **How to decide?**
 - Look at the institute
 - Syllabus
 - Scope of syllabus

Research & PhD: (India & Abroad):

▶ PG (MS), MPhil, Post Doc., PhD

Explore the following beforehand:

- ▶ Why to do research?
- ▶ Do you really wish to do research?
- ▶ Do you Know the scope of employment after “ Research”?

Structure Analysis and Surveying

- ▶ Start consultancy for analysis of structures through xls. Or Softwares.
- ▶ You can even start analysis of foreign based jobs, besides the in country jobs.

Surveying-

- ▶ Surveyor / Survey firm
- ▶ Levelling, mapping estimation of earth works etc. for infra. Facilities.
- ▶ Hydrological surveys.
- ▶ Communication tower installations, cctv locations etc.

Design of Structures: RCC & Steel Design

- ▶ Industrial sheds
- ▶ Ware houses
- ▶ Chimneys
- ▶ Towers
- ▶ Girders
- ▶ Bridges
- ▶ Trusses Concrete Design
- ▶ Overhead water tanks
- ▶ Silos
- ▶ Cooling towers
- ▶ Multistory
- ▶ Foundations
- ▶ Bridges
- ▶ Retaining Walls
- ▶ Jetty's
- ▶ Docks

Geotechnical Engineering

- ▶ Soil Testing
- ▶ Foundation design
- ▶ Site investigations
- ▶ Specific Sand manufacture
- ▶ Equipment manufacture
- ▶ Pile integrity testing
- ▶ Tunnel Boring machines
- ▶ Soil Stabilization techniques
- ▶ Land fill design.
- ▶ Fly ash pond design.
- ▶ Buried Structure investigations

Environmental Engineering

Own design consultancy for

- ▶ Pipe network- Waste water, domestic supply
- ▶ Water, air, soil quality checking laboratory
- ▶ Design of Trickling filter, ash pond, stilling basin, clariflocculator, oxidation pond, alum treatment plant, rapid/slow sand filter design
- ▶ Solid waste collection- classification and re-use, re-cycle and produce compost as well as energy from it.
- ▶ Environmental Audit cell you can run.

Construction Management

- ▶ PERT/ CPM based planning firm
- ▶ Third party quality checking firm.
- ▶ Finance planning and commissioning firm.
- ▶ Time management
- ▶ Labor management
- ▶ Equipment/ Machinery Management
- ▶ Site management
- ▶ Site safety planning
- ▶ Staff accounting
- ▶ Negotiating firm

Town Planning/ Planning and Architecture

- ▶ • Start drawing plans for buildings
 - ▶ • Architectural planning of various campus
 - ▶ • Design Housing colony's.
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- ❖ It must be JV/Agreement between Structure Engineer and Architect
 - ❖ Certification Required for both Parties
 - ❖ Solar Power, Green Building, Intelligent Building, Energy Savings in Building, Smart Building, Modern Sustainable Architecture etc. is upcoming branches of it...!

Water resources and Irrigation

- ▶ Drip irrigation kit sale and execution
- ▶ Canal/ water course lining
- ▶ Pipes for irrigation can be manufactured
- ▶ Non government water resources estimator and design of hydraulic structure.
- ▶ Government/ Affiliated agencies:
 - ❖ WASMO
 - ❖ IRMA
 - ❖ CWC
- ▶ Hydrology Project
- ▶ GIS applications in WR

Highway Engineering

Private firm which gives following services:

- ▶ Curb making machine
- ▶ Traffic analysis
- ▶ Origin and Destination Studies
- ▶ Pavement design
- ▶ Highway geometry design
- ▶ Alignment survey
- ▶ Traffic related products manufacture
- ▶ Sign boards- illuminated / Non illuminated
- ▶ Traffic indicators, barriers etc.

Advice

- ▶ All the career opportunities have its own pro's and con's.
- ▶ All human being's (Student's) are different from each other, so take your own decision, please do not copy other's way.
- ▶ Evaluate your own nature, strength, health, mindset, family needs, family's economic conditions, wealth deposited by your elders, need of time etc like so many factors before choosing career.
- ▶ Select a job/career/way of life in such a way, where you (& Only you !) forgets about time and place (i.e. where your body and soul meets each other).
- ▶ Take care that your surroundings of job place must be free from pollutants or unhygienic conditions prevails.
- ▶ It must be feel happy to leave for job every morning, if not so leave such jobs.
- ▶ Very mental stressful jobs should be avoided.

Why Study Civil Engineering at GU

- ▶ Dedicated faculties with qualifications from reputed organization like **IIT's**, **NIT's**, AMU, CUSAT, JMI, and DTU.
- ▶ Varied range of specialization available in undergraduate and post graduate courses.
- ▶ World class infrastructure and lab facilities.
- ▶ Excellent placement in core fields.
- ▶ Student oriented curriculum, choice of wide range of electives besides the co and extra curricular activities available on campus, for an all round development of students.

Courses in Civil Engineering that we are offering

- ▶ B.Tech in Civil Engineering
- ▶ B.Tech in Construction Technology (2020 onwards)
- ▶ B.Tech in Environment and Pollution Control (2020 onwards)
- ▶ M.Tech in Structural Engineering
- ▶ M.Tech in Energy & Environmental Engineering
- ▶ M.Tech in Transportation Engineering (2020 onwards)
- ▶ PhD in Civil Engineering

Success Stories, our Alumni

▶ Supertech

- ❖ Pradeep Kumar Yadav
- ❖ Rishab Chaurasia
- ❖ Vishwaratan Shukla
- ❖ Ashish Gautam



▶ Infosys

- ❖ Shailesh Mehra
- ❖ Prashant Yadav
- ❖ Shivam Dwivedi
- ❖ Srishti Nainwal



- ▶ Utkarsh, District Coordinator at Pradhan Mantri Awas Yojana
- ▶ Shashi Shankar, Str.Engineer at Global Design Engineers
- ▶ Nandan kumar jha, Junior Engineer at Dewangunj Municipality, Nepal
- ▶ Kuldeep parashar, Site.Engineer at Gard and Associate

Recruiters at Galgotias University for Civil students

- ▶ Acadecraft Pvt. Ltd.
- ▶ Accenture
- ▶ Accolite Software
- ▶ Act 21 Softwares
- ▶ Acuminious Software
- ▶ Aerolith Business Pvt Ltd
- ▶ Almora (7KREINTO PTE. LTD)
- ▶ AMAZON
- ▶ Amperes Energy
- ▶ Aptara
- ▶ Athmin Technologies
- ▶ Bhilwara Infotech Ltd.
- ▶ BIENT TECHNOLOGIES
- ▶ Black Olive
- ▶ Byjus
- ▶ Capgemini
- ▶ Centilytics
- ▶ Chegg India
- ▶ Classplus
- ▶ Cloudshope Technologies Pvt. Ltd.
- ▶ Cognizant
- ▶ Cognizant - Mastercode
- ▶ Cube Highways and Transportation Assets Advisors Pvt. Ltd.
- ▶ Cvent
- ▶ DELHIVERY
- ▶ Design O Web Technologies
- ▶ Doubtnut Content Developer (CLASS 21A)
- ▶ DUDHI INDUSTRIES
- ▶ Ebizon Netinfo Pvt Ltd
- ▶ Eckovation
- ▶ EDOOFA
- ▶ edWisor
- ▶ Eleation services Pvt. Ltd.
- ▶ Eleation Services Pvt. Ltd
- ▶ Encore Capital Group
- ▶ Enthuous Technologies
- ▶ Extramarks Education India
- ▶ Fareye
- ▶ Fedex
- ▶ Garg Group
- ▶ Genpact
- ▶ GiGlue Music Private Limited

Recruiters at Galgotias University for Civil students

- ▶ Gladiris Technologies (SpiderG)
- ▶ GrownMind Educational Services Pvt.Ltd
- ▶ Hercules Structural Systems Pvt.Ltd
- ▶ Hike Education
- ▶ IIFM Ltd. (PRATHAM)
- ▶ IndiaMART
- ▶ Industrybuying
- ▶ Infosys
- ▶ Ingenious-e-Brain Solution
- ▶ Interglobe Technologies
- ▶ Jaro Education Pvt.Ltd.
- ▶ JARO GROUP
- ▶ Jet Airways
- ▶ JINDAL BUILDSYS LTD.
- ▶ Juspay
- ▶ Kay Dee Market Insights
- ▶ Keyence India Pvt Ltd
- ▶ Kriti Digitech Pvt Ltd
- ▶ KW Group
- ▶ Learning Routes Pvt Ltd
- ▶ LIDO Learning
- ▶ Maharani Innovative Paints
- ▶ Maple Construction
- ▶ Multiplier Solutions
- ▶ Namekart
- ▶ Naukri.com
- ▶ Novelvox
- ▶ Pioneer-e-Solutions
- ▶ PNB Housing
- ▶ Polestar Solutions & Services Ind. Pvt Ltd
- ▶ Premier Edge Solutions pvt. ltd
- ▶ Prepinsta
- ▶ Pyramid IT Consulting
- ▶ Quantum Technologies
- ▶ Radical Minds
- ▶ Radical Minds Technologies
- ▶ Real Time Data Services
- ▶ RGF
- ▶ Shimuk Enterprises Pvt Ltd
- ▶ Simply Digital
- ▶ SMS India Pvt.Ltd.
- ▶ Sopra Steria
- ▶ Success Mantra
- ▶ Supertech Limited

Recruiters at Galgotias University for Civil students

- ▶ Tanisha Systems
- ▶ TCS
- ▶ Tech Mahindra
- ▶ Technip India Ltd. (TechnipFMC)
- ▶ Thots Labs
- ▶ THOUGHTWORKS
- ▶ Trancis Group
- ▶ TransWeb Educational Services Pvt Ltd
- ▶ TransWeb Educational Services
- ▶ Trishul Realcon Pvt.Ltd.
- ▶ Tumbledry
- ▶ Ultratech
- ▶ V5 Global Services Pvt .Ltd
- ▶ v Construct Private Limited
- ▶ Vedantu Innovations Pvt Ltd.
- ▶ Vedicsoft Solutions India Pvt.Ltd.
- ▶ Vidyamandir Classes
- ▶ Webmobril Technologies Pvt.Ltd
- ▶ Wipro
- ▶ Wipro Technologies
- ▶ WSP Consultants India Pvt.Ltd
- ▶ Zing HR
- ▶ Zycus
- ▶ ZypMedia India Pvt Ltd

School of Civil Engineering

Vision

- ▶ To be a Centre of Excellence for imparting high end research and technical education in Civil Engineering producing socially aware professionals to provide sustainable solutions to global community.

School of Civil Engineering

Mission

- ▶ To impart quality education and mould technically sound, ethically responsible professionals in the field of Civil Engineering.
- ▶ Collaborate with industry and society to design a curriculum based on the changing needs of stakeholders and provide excellence in delivery and assessment
- ▶ Establish state-of-the-art facilities for world class education and research.
- ▶ To mentor students in pursuit of higher education, entrepreneurship and global professionalism.

School of Civil Engineering

PEO

- ▶ **PEO1:** Graduates shall attain state of the art knowledge in the different streams of Civil Engineering and be trained for playing the role of competent Civil Engineer in multidisciplinary projects.
- ▶ **PEO2:** Graduates shall be capable of pursuing productive careers in private and government organizations at the national and international level and to become successful entrepreneurs.
- ▶ **PEO3:** Graduates shall display a high sense of social responsibility and ethical thinking and develop sustainable engineering solutions

School of Civil Engineering

PSO

- ▶ **PSO1:** Develop the ability to implement emerging techniques to plan, analyse, design, execute, manage, maintain and rehabilitate systems and processes in diverse area like structural, environmental, geotechnical, transportation and waterresources engineering
- ▶ **PSO2:** Excel in research, innovation, design, problem solving using different softwares and artificial intelligence and develop an ability to interact and work seamlessly in multidisciplinary environment

Course Structure of B.Tech in Civil Engg

Semester I

- ▶ Energy Sources and Audit
- ▶ Data Analytics (Excel and Tableau)
- ▶ AI Fundamentals
- ▶ Differential / Vector calculus and Matrices
- ▶ Programming for Problem Solving (C)
- ▶ Communication Skill (BEC-1)
- ▶ Engineering Physics
- ▶ Engineering Physics Lab
- ▶ Bio Systems in Engineering
- ▶ AC DC Circuits

Course Structure of B.Tech in Civil Engg

Semester II

- ▶ Integral and Multiple Calculus
- ▶ Partial Differential Equations
- ▶ Embedded Technology and IoT
- ▶ Waste Management
- ▶ Environmental Science
- ▶ Liberal and Creative Arts
- ▶ Creativity, Innovation and Entrepreneurship
- ▶ Application of Python Programming
- ▶ Introduction to Digital System
- ▶ Data Structure Using C
- ▶ Digital Fabrication
- ▶ Engineering Mechanics

Course Structure of B.Tech in Civil Engg

Semester III

- ▶ Mathematis-III (Functions of Complex Variables and Transforms)
- ▶ Aptitude building and Logical Reasoning - I
- ▶ Disruptive Technologies {Introduction to Cloud, Introduction to IOT, Introduction to Sensors and Transducers, Data Analytics}
- ▶ AI and its Applications
- ▶ Mechanics of Materials
- ▶ Fluid Mechanics
- ▶ Surveying
- ▶ Fluid Mechanics Lab
- ▶ Surveying Practices
- ▶ Engineering Drawing
- ▶ Mechanics of Materials Lab

Course Structure of B.Tech in Civil Engg

Semester IV

- ▶ Mathematics-IV (Numerical and Computational Methods)
- ▶ Numerical and Computational Methods Lab
- ▶ Aptitude building and Logical Reasoning - II
- ▶ Engineering Clinic - I (IOT)
- ▶ Communication Skill (BEC-2) - 3 credit
- ▶ Construction Engineering
- ▶ Structural Analysis
- ▶ Hydrology & Hydraulic Systems
- ▶ Geotechnical Engineering
- ▶ Structural Analysis Lab
- ▶ Geotechnical Engineering Lab
- ▶ Construction Engineering Lab

Course Structure of B.Tech in Civil Engg

Semester V

- ▶ Engineering Economics and Management
- ▶ Transportation Engineering - I
- ▶ Transportation Engineering Lab
- ▶ Engineering Clinic - II (Machine Learning)
- ▶ Water Supply & Treatment Systems
- ▶ Water Quality Analysis Lab
- ▶ Aptitude building and Logical Reasoning - III
- ▶ Program Elective – I
- ▶ Social Internship
- ▶ Design of Reinforced Concrete Structures
- ▶ CAD Lab - I (AUTOCAD)
- ▶ Hobby Class
- ▶ Industrial Internship - I

Course Structure of B.Tech in Civil Engg

Semester VI

- ▶ Excel Training & PPT Training
- ▶ Reasoning - IV
- ▶ Transportation Engineering - II
- ▶ Design of Steel Structures
- ▶ Design and Innovation
- ▶ Waste Water Treatment & Disposal Systems
- ▶ Foreign Language (German / Japanese / French)
- ▶ Open Elective - I
- ▶ Quantity Surveying and Estimating
- ▶ Program Elective - II
- ▶ Analysis and Design Lab (STAAD PRO)
- ▶ Program Elective - III
- ▶ Quantity Surveying and Estimating Lab (PRIMAVERA)
- ▶ Aptitude building and Logical

Course Structure of B.Tech in Civil Engg

Semester VII & VIII

- ▶ Program Elective - IV
- ▶ Program Elective - V
- ▶ Remote Sensing & Geographical Information System
- ▶ Campus to Corporate
- ▶ Ethics and Professional Competency
- ▶ Capstone Phase-1
- ▶ Open Elective - II
- ▶ Project Planning and Management Lab (PRIMAVERA)
- ▶ Industrial Internship – II
- ▶ Capstone Phase-2 (Semester VIII)