

Program Curriculum

B.Tech Civil and Infrastructure Engineering (CIE)

4 Year

First Year (Semester 1 and Semester 2)

- Induction Program (2-weeks)
- Introductory Calculus
- Basic Infrastructure Physics
- Sustainable Ecosystems
- Foundation of Civil Engineering
- Computer Programming
- Communication I
- Computational mathematics
- Mechanics of Solids
- Engineering Graphics & Design
- Sensor Technologies
- Professional Ethics
- Communication II

Second Year (Semester 3 and Semester 4)

- Applied statistics
- Structural analysis
- Computer aided civil engineering design
- Geomatics & digital mapping
- Fluid Mechanics
- Management Practices
- Entrepreneurship & IPR
- Geotechnical Engineering
- Concrete technology
- Structural engineering
- Water & Wastewater Engineering
- Automation in civil infrastructure
- Industry visits



Third Year (Semester 5 and Semester 6)

- Industry immersion/ Community outreach # (3-4 weeks)
- Construction project management
- Organizational Behaviour
- Transportation engineering
- Infrastructure planning and appraisal
- Professional Elective I
- Professional Elective II
- Estimating, costing & valuation of infrastructure
- Metro system planning & construction
- Design of concrete structures
- Economics analysis of infrastructure projects
- Professional Elective - III
- Professional Elective - IV
- Industry visits*

Note:

Students will opt industry immersion/ Community outreach at the end of semester-4 during the summer vacation. The evaluation is based on project report and presentation in-front of a jury.

*Students will go for industry visits and prepare a report on their skilling and learning. Evaluation will be done based on report and understanding.

Fourth Year (Semester 7 and Semester 8)

- Industry Internship (12-14 weeks) / Minor Project #
- Professional Elective – V
- Professional Elective – VI
- Professional Elective – VII
- Professional Elective - VIII
- Major Project in CIE*

Note:

Students will opt for industry internship or for community outreach at the end of semester-6 during the summer vacation. The evaluation will be based on project report and present them in-front of an internal jury.

*Students will go for major project in industry internship or university assisted internship. They will work full-time for 6-8 hours for 5-6 days per week and will prepare a report on their skilling and learning.

B.Tech Civil and Infrastructure Engineering (Honors)

4 Year

Fourth Year (Semester 7 and Semester 8)

- If student earns additional 16-22 credits through MOOC and taught courses are eligible for B.Tech (Honors) in Civil and Infrastructure Engineering

B.Tech CIE with Minor in Project Management

4 Year

Fourth Year (Semester 7 and Semester 8)

- Planning, Scheduling and Control of Construction Projects
- Cost Management of Engineering Projects
- Construction Finance and Accounting
- Building information and Modelling for Project Management
- Construction Law and Contract Management
- Major Project in Project Management

Note:

If student earns additional 16-22 credits in project management above regular B.Tech in CIE program, they are eligible for B.Tech in Civil and Infrastructure Engineering with minor in project management degree.

Integrated B.Tech with MBA

5 Year

Fourth Year (Semester 7 and Semester 8)

- Business development for mega infra projects
- IPR and infrastructure development
- Marketing management
- Business research methods
- Managerial accounting
- Operations management
- Professional Elective I (Management)
- Legal practices of infrastructure
- Operations and supply chain management
- Strategic management
- Corporate finance
- BIM for project management
- Quantitative techniques
- Professional Elective II (Management)

Fifth Year (Semester 9 and Semester 10)

- Urban development planning & governance
- Transport policy, economic & management
- Construction law and contract management
- Carbon pricing & infrastructure development
- Quality control & safety management
- Risk & resources management
- Capstone Project