



Civil Engineering

Upskilling for the 21st Century

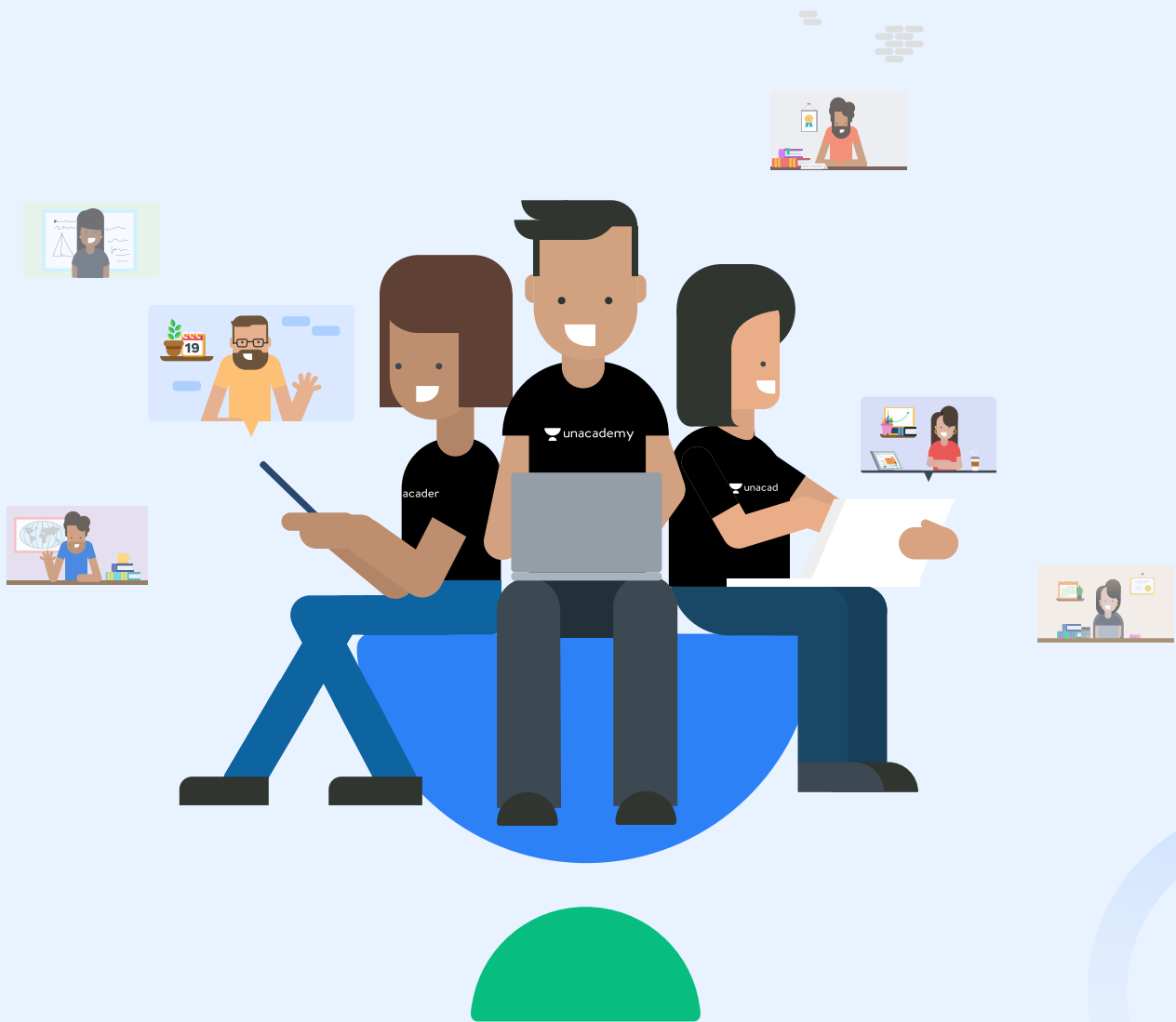




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About Unacademy

Classroom education in India has stifled many brilliant minds. With Unacademy, India's largest education platform, we are changing that. In a span of 6 years, **62+ million Learners have benefited** from live online lessons and specialized resources from the **best Educators** in the country.

With over **5 million** monthly active users from 10k+ cities in India, we are impacting the lives of people in the farthest corners of the country. We have on board 50k+ Educators teaching in **14 languages** to help our Learners crack various competitive examinations.

Our success stories include thousands of students who have cracked the toughest of examinations, improved their ability to speak and write better and expand their knowledge.

Our vision is to partner with the brightest minds and have courses on every possible topic in multiple languages so the whole world can benefit from these courses. **India is home to 19% of the world's youth** and we are empowering them to take on the world in a manner that classrooms will never do.



Why Become a Civil Engineer

3D Printing, Project Management Information Systems (PMIS), Building Information Modeling (BIM), Modular Construction, Virtual Realty

Real estate sector in India is expected to reach US\$ 1 trillion in market size by 2030, up from US\$ 200 billion in 2021 and contribute 13% to the country's GDP by 2025. In India, the real estate sector is the second-highest employment generator, after the agriculture sector. Retail, hospitality, and commercial real estate are also growing significantly and will generate millions of new jobs for skilled civil engineers.

However, there is a large gap between what industries expect from new recruits and the skillsets aspiring engineers possess after completing a bachelor's degree in engineering. This gap has widened in the last two years and restricted opportunities to coveted core engineering jobs based on one's college, specialisation, or their connections in the industry.

We believe that Learners need a bridge course that will enable them to develop industry-ready skills and secure jobs in top core engineering roles. The future of India's growth will be built on the base of the world's largest youth population under the age of 35. We have an incredible opportunity to become part of the next Industrial revolution and contribute to making our nation a global superpower.



Why Unacademy Core Engineering?

Unacademy offers a complete value offering to help you crack your dream core engineering role.

Plus Benefits



300+ hours of recorded content



Best-in-class Educators with deep industry expertise



Weekly Doubt-Solving classes



Industry-relevant projects



Masterclasses with Industry Veterans



15+ Hours of Content on Cracking Engineering Interviews



Community of like-minded professionals



Certificate of Completion



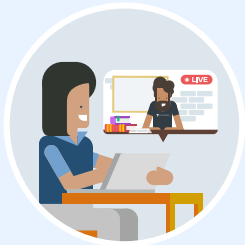
Iconic Benefits



**Internship
Assistance**



**Placement
Assistance**



1:1 Mentorship



1:1 Doubt Solving



Is This For You?

Unacademy's core engineering program is relevant for the following audience: -

- A **third-year or final-year Learner** aiming to crack a technical role in a core engineering company.
- A **fresh graduate (no experience)** aiming for a career in the core engineering field.
- A **recent graduate (1-3 years of experience)** looking to switch roles within the core engineering domain.
- An **experienced graduate (4-6 years of experience)** looking to upskill in specific fields.
- A **third-year or final-year Learner** looking to build a live project portfolio to apply to universities abroad.





Weekly Class Schedule

With Unacademy, you can attend classes at any time during the week based on your availability. It's completely up to you!

Our recommendations for Learners are below: -

- **Monday** - Core sessions + Doubt-solving sessions
- **Tuesday** - Core sessions
- **Wednesday** - Core sessions
- **Thursday** - Core sessions
- **Friday** - Project Work
- **Saturday** - Masterclass/Special Event + Project Work
- **Sunday** - Project Work + Doubt-solving sessions





Classes By Experts



Devarsh Bhonde

PhD, University of British Columbia



Dr. Subhasis Pradhan

Assistant Professor, BITS Pilani

Learn From Industry Leaders



Md. Waqqar Ahmad

Structural Engineer, Ex L&T, TCE



Shivangi

Head - The Royal Solution



Course 1

Fundamentals of Civil Engineering Strengthen your core

50 HOURS

1

Concrete Technology

Scope and Sub-Fields of Civil Engineering and Skills Required by a Civil Engineer
Introduction to Building Materials
Introduction to Aggregates
Introduction to Cement
Introduction to Admixtures
Introduction to Concrete
Concrete Mix Design
Mixing, Batching and Transportation of Concrete
Construction Methodologies
Introduction to Bar Bending Schedule
Testing of Materials

2

Foundation Engineering Basics

Types of Foundation
Shallow vs Deep Foundation
Factors Considered for Selection of Foundation Type
Raft Foundation
Pile Foundation

3

Surveying: Professional Approach

Fundamentals of Surveying
Linear measurement and chain survey
Compass Surveying
Theodolite
GPS, GIS and Total Station



Course 2

BIM: AutoCAD - A professional approach Softwares & Tools

25 HOURS

1

AutoCAD Basics

Introduction to AutoCAD
Getting started with AutoCAD
Advanced Sketching, Editing and Drawing Aids
Annotations and Hatching
Working with Blocks and Attributes

2

AutoCAD Advanced

Understanding External References and Layout Concept
Design Center and Tool Palettes Concepts
Introduction to 3D coordinate systems
Getting started with 3D modelling
Visualization



Course 3

BIM: REVIT - A professional approach Softwares & Tools

25 HOURS

1

Autodesk Revit Basics

BIM in Industry
Introduction to Revit – Architectural Modelling
Model based estimation
Documentation and Layouting

2

Autodesk Revit Advanced

Structures
MEP (Mech, Electrical, Plumbing)
Construction Modelling
Working with family & Massing
API Dynamo



Course 4

Structural Analysis: Mastering BMD & SFD

Strengthen your core

20 HOURS

1 Shear Force & Bending Moment Diagrams

- Introduction to basics
- Bending Moments
- Shear Forces
- Relation of BMD, SFD and Loadings
- Deflection

Course 5

Structural Design - RCC Structures

Specialisation

25 HOURS

1 Design of RCC Structures

- Explanation of IS codes
- Analysis & Design of Slabs, Beams, Column & Footing
- Detailing of Slabs, Beam, Column and Footing
- Manual Design of 3 storied Residential Building
- Manual Wind Load Calculation
- Manual Seismic Load Calculation
- Basic Load Cases
- Serviceability & Design Load Combinations



Course 6

Structural Design - Steel Structures Specialisation

25 HOURS

1 Design of Steel Structures:

- Explanation of IS codes
- Material & Design Overview
- Different types of connections
- Design of Tension Members
- Design of Compression Members
- Design of laterally supported Beams
- Design of Column Base



Course 7

Design of Precast and Pre-stressed Concrete Structures

25 HOURS

Specialisation

1

Precast Structures Basics

Concept of Precast
Types of precast constructions and methodologies
Equipments and machineries,
Economy of prefabrication
Planning for Components of prefabricated structure

2

Pre-stressed Concrete Basics

Introduction, Prestressing Systems and Material Properties
Analysis of Members
Design of Members
Calculations of Deflection and Crack Width
Transmission of Prestress
Cantilever and Continuous Beams

3

Structural Design of Highrise Precast Buildings using ETABS

Basic Introduction
Concept Design of Precast Structured
Force Calculation
Load combinations, Strength & Serviceability parameters
Analytical model of the precast building in ETABS
Loading, connection parameters, foundation properties, and seismic inputs
Understanding behavior of the analytical model
Foundation design of the building & Precast element design
Design of precast elements
Design of precast connections
Robustness & Diaphragm design



Course 8

Analysis & Design of Buildings with Staad.pro
Softwares & Tools

25 HOURS

1

Staad.pro Basics

Introduction to Staad.pro Basic Modelling
Mathematical Modelling of the Structure.
Gravity Load Application on Mathematical Modeling
Loads & Load Combinations
Analysis & Design of structure
Analysis and design of a simple portal frame

2

Staad.pro Advanced

Analysis and design of a Commercial building
Analysis and design of Tall building
Design of a simple Steel beam, Column & Truss frame
Analysis and design of a Steel building
Analysis and design of a Steel Industrial building
Analysis and design of a PEB building
Design Sequence of Mat/Raft Footing



Course 9

Analysis & Design of Buildings with ETABS Software & Tools

25 HOURS

1

ETABS Basics

Introduction to ETABS
Mathematical Modelling of the Structure.
Gravity Load Application on Mathematical Modeling
Lateral Load Application on Mathematical Modeling
Analysis & design of a Simple RCC Beam and column

2

ETABS Advanced

Analysis & Design of G+5 building with failure case study
Analysis & design of medium height structure (<50m height)
Explanation of IS codes for high rise structure
Analysis & design of high rise structure (>50m height)
Analysis & design of Simple Truss model
Analysis & design of Industrial steel building



Course 10

Foundation Design using SAFE for Seismic Loads

15 HOURS

Software & Tools

1 Foundation Design for Seismic Loads

- What is a Foundation?
- Design of Foundations
- Design of Isolated Footings
- Design of Combined Footings
- Design of Mat Foundations
- Introduction to SAFE
- Design Sequence of Slabs
- Design Sequence of Mat/Raft Footing

Course 11

Construction Project Management Specialisation

25 HOURS

1 Construction Project Management

- Introduction
- Project Organization
- Construction Economics
- Client's Estimation of Project Cost
- Construction Contract
- Construction Planning
- Project Scheduling and Resource Levelling
- Contractor's Estimation of Cost and Bidding Strategy
- Construction Equipment Management
- Construction Accounts Management
- Construction Material Management
- Project Cost and Value Management
- Construction Quality Management
- Risk and Insurance in Construction
- Construction Safety Management



Course 12

Construction Planning using Primavera Softwares & Tools

25 HOURS

1 Construction Planning using Primavera P6

- Project planning
- Management
- Project structuring
- Configuration Activities & Duration
- Schedule Implementation Grouping
- Filtering & Formatting
- Baselines & Budgets
- Resource & Costs
- Updating & Tracking
- Risks
- Issues & Threshold
- P6 Visualizations
- Generating Outputs & Reports

Course 13

Transportation Engineering: Design of Highways Specialisation

25 HOURS

1 Design of Highways

- Geometric design
- Flexible pavement design
- Rigid pavement design
- Flexible pavement overlay design
- Rigid pavement overlay design
- Drainage system design



Course 14

Highway Design using MX Roads

Software & Tools

20 HOURS

1

MX Roads Basics

Basic Concepts and Starting a New Project
Input Survey Data and View Model Data
CAD Environment and Toolbars
Tool tips and Status Tools
Surface Checker and Editing Tools
Surface Analysis
Housekeeping

2

MX Roads Advanced

String Naming Convention
Quick Horizontal Alignment
Quick Vertical Alignment
Carriageway Design
Rule Based Superelevation
Crossfall Checker
Design of Second Road
Road Widening
Dynamic Reports
Junction Design
Kerbs, Footways, and Verges
Working with Projects



Course 15

Interview Readiness Program

30 HOURS

1 Fundamentals of Interviews

Interview Basics, Understanding Key Interview Concepts and Types Of Interviews

2 Pre-Interview Prep

Research, QnA prep and Optimizing CV

3 Engineering a Confident Body Language

Position and Posture, Engaging Eye-Contact, Mastering Language and Overall Personality Development

4 Building Rapport

Understanding Employer's Perspective, Interpret Interviewer's Body Language.

5 Interview PRO

Ace Networker, Mastering the top 20 interview questions, Common Interview Mistakes, Questions you should ask during the interview

6 LinkedIn Profile Upgrade

Creating a stand-out LinkedIn profile, Job Alerts, Projects and Certifications, Getting your foot in the door, Making the right Connections



Capstone Projects

Unacademy will provide opportunities for Learners to solve real business problems faced by major engineering companies.

Capstone Sample Projects

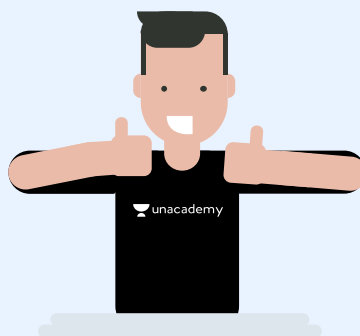
Course Details

Duration of the Course

12 MONTHS

Commitment Required

15-20 HOURS A WEEK



What are you waiting for?

[Enroll Now](#)