L&T EduTech

Steel Multi Storey Building - System Design Specialization

Gain Steel Building Design expertise. Master Steel Building Design: From Concept to Construction Execution

Instructor: Subject Matter Expert

1,725 already enrolled

Included with coursera PLUS • Learn more

3 course series
Get in-depth knowledge of a subject

4.9 ★
(14 reviews)

Advanced level
Recommended experience

4 weeks to complete
at 10 hours a week

Flexible schedule
Learn at your own pace

What you'll learn

- ✓ Interpret site specific aspects of the structure like geotechnical investigations and project requirements
- ✓ Develop design basis requirements including building functionalities, durability, and materials.
- ✓ Compute loads of various elements & services, in line with industry practices, that acts on various structural elements of a steel building
- ✓ Design appropriate vertical & lateral load resisting systems for the various loads acting on the building

Skills you'll gain

Failure Analysis | Structural Analysis | Engineering Drawings | Computer-Aided Design | Commercial Construction | Engineering Software | Civil Engineering | Building Codes | Architectural Drawing | Architectural Engineering | Technical Drawing | Structural Engineering | Engineering Analysis | Building Design | Engineering Calculations | Sustainable Engineering | Construction Inspection | Industrial Design | Engineering Design Process | Construction | View less skills

Details to know

Shareable certificate
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Taught in English

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Advance your subject-matter expertise

- Learn in-demand skills from university and industry experts
- Master a subject or tool with hands-on projects
- Develop a deep understanding of key concepts
- Earn a career certificate from L&T EduTech

Specialization - 3 course series

The "Steel Multi Storeyed Building - System Design" course provides a thorough exploration of steel structure design. Beginning with foundational principles outlined in the design basis report, learners delve into critical factors like site selection and building functionality. They gain insights into geometric parameters, design life, and corrosion protection. Concrete, reinforcement, floors, roofs, and structural steel are examined alongside bolts, welds, fireproofing, and painting materials. Load calculations covering gravity, lateral, and dead loads enable accurate structural assessment. Serviceability requirements, deflection limits, and fire resistance strategies are addressed, with practical exercises enhancing understanding.

Live loads, including occupancies and specialized elements like staircases, are covered, emphasizing load layouts for optimal performance. Lateral load resisting systems such as moment frames and shear walls are explored, alongside beam and column design methods including manual and software-based approaches.

Connection design, tension members, facade support, and industrial framing are discussed, ensuring expertise across various design aspects. The course concludes with structural drawing planning, fabrication, erection procedures, and inspections, highlighting the importance of good design and construction practices throughout the project lifecycle.

Applied Learning Project

This course equips learners to design structural steel buildings, ensuring compliance with industry standards and codes. It covers structural drawing planning, fabrication, erection procedures, and inspections, emphasizing good design and construction practices.

Read less

Design Basics of Steel Buildings

Course 1 • 13 hours

Course details

What you'll learn

- ✓ Recall foundational principles of steel building design, including basis for design reports, site location considerations, and geometric parameters.
- ✓ Understand how site location impacts building function & consider exposure conditions and corrosion protection for steel structures.
- ✓ "Utilize material knowledge, design loads, and calculation methods to solve steel building design problems, including wind and earthquake loads."

Skills you'll gain

Structural Engineering | Building Design | Engineering Calculations | Building Codes | Structural Analysis | Sustainable Engineering | Architectural Engineering | Construction | Civil Engineering | Safety Standards

Modelling, Analysis and Design of Steel Buildings

Course 2 • 11 hours

Course details

What you'll learn

- Understanding steel building design: load application, analysis parameters, and design methods for different structural elements.
- Utilize modeling, analysis, and design principles to solve steel building design problems and inform decision-making in diverse scenarios.
- Evaluate design parameters, results, and output manually with software, assessing their impact on structural integrity, efficiency, serviceability.

Skills you'll gain

Structural Analysis | Structural Engineering | Engineering Calculations | Engineering Analysis | Failure Analysis | Construction | Engineering Software | Engineering Design Process | Building Design | Architectural Engineering | Computer-Aided Design

Construction aspects of Steel Buildings

Course 3 • 8 hours

Course details

What you'll learn

- Analyze steel building construction methods and practices to solve encountered problems.
- Design various connection types & comprehending industrial building functionalities, structural framing, and load evaluation.
- Plan steel buildings: design, structural drawings, fabrication, logistics, erection, inspections for quality construction.

Skills you'll gain

Structural Engineering | Engineering Drawings | Construction Inspection | Industrial Design | Technical Drawing | Engineering Design Process | Architectural Drawing | Structural Analysis | Building Design | Commercial Construction | Construction

Earn a career certificate

Add this credential to your LinkedIn profile, resume, or CV. Share it on social media and in your performance review.

Instructor

Subject Matter Expert
L&T EduTech
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Why people choose Coursera for their career

Felipe M.
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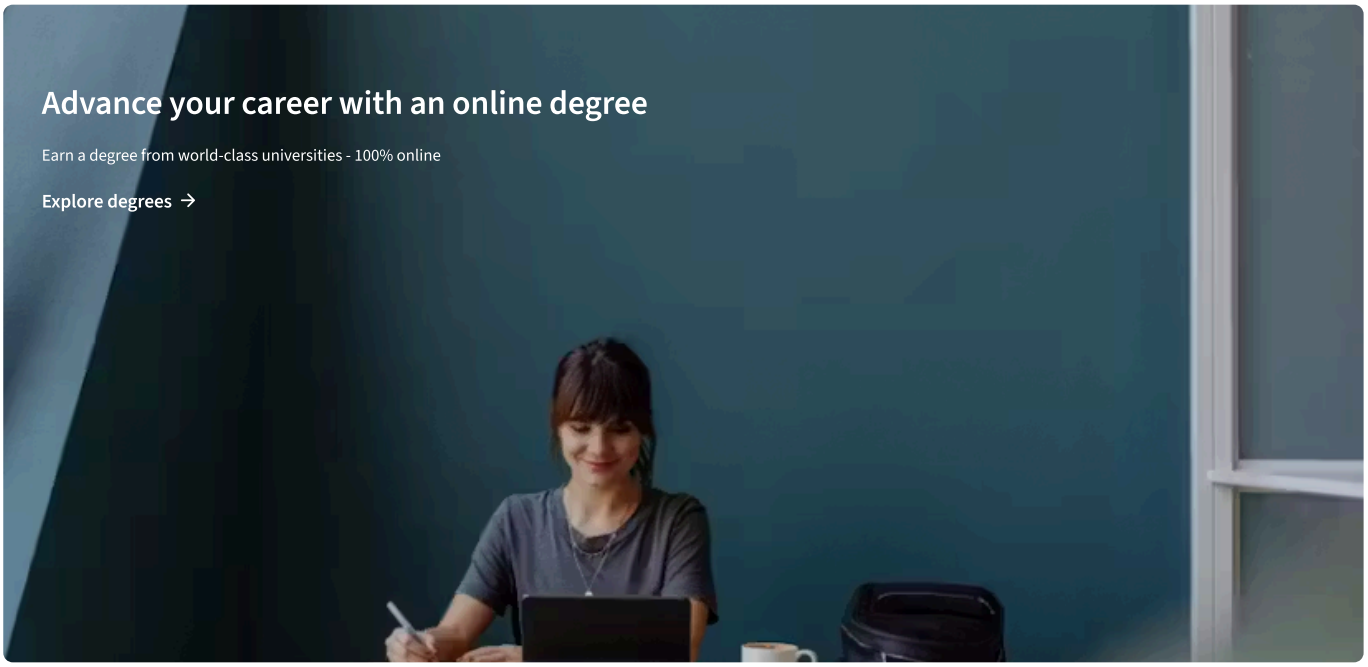
"To be able to take courses at my own pace and rhythm has been an amazing experience. I can learn whenever it fits my schedule and mood."



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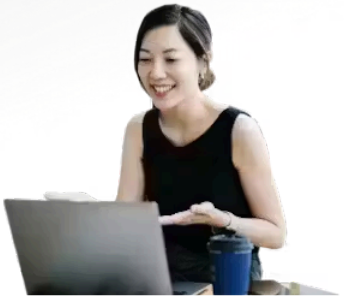

Frequently asked questions

Is this course really 100% online? Do I need to attend any classes in person?

This course is completely online, so there's no need to show up to a classroom in person. You can access your lectures, readings and assignments anytime and anywhere via the web or your mobile device.

Can I just enroll in a single course?

Yes! To get started, click the course card that interests you and enroll. You can enroll and complete the course to earn a shareable certificate. When you subscribe to a course that is part of a Specialization, you're automatically subscribed to the full Specialization. Visit your learner dashboard to track your progress.

Is financial aid available?

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

Show all 5 frequently asked questions

More questions

Visit the learner help center

Financial aid available, learn more

Skills

- Artificial Intelligence (AI)
- Cybersecurity
- Data Analytics
- Digital Marketing
- English Speaking
- Generative AI (GenAI)
- Microsoft Excel
- Microsoft Power BI
- Project Management
- Python

Certificates & Programs

- Google Cybersecurity Certificate
- Google Data Analytics Certificate
- Google IT Support Certificate
- Google Project Management Certificate
- Google UX Design Certificate
- IBM Data Analyst Certificate
- IBM Data Science Certificate
- Machine Learning Certificate
- Microsoft Power BI Data Analyst Certificate
- UI / UX Design Certificate

Industries & Careers

- Business
- Computer Science
- Data Science
- Education & Teaching
- Engineering
- Finance
- Healthcare
- Human Resources (HR)
- Information Technology (IT)
- Marketing

Career Resources

- Career Aptitude Test
- Examples of Strengths and Weaknesses for Job Interviews
- High-Income Skills to Learn
- How Does Cryptocurrency Work?
- How to Highlight Duplicates in Google Sheets
- How to Learn Artificial Intelligence
- Popular Cybersecurity Certifications
- Preparing for the PMP Certification
- Signs You Will Get the Job After an Interview
- What Is Artificial Intelligence?

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