

DEPARTMENT OF CIVIL ENGINEERING, GALGOTIAS UNIVERSITY

B.Tech Civil Engineering

Multi-Modal Transportation Infrastructure with AI/ML

Offered in association with L&T EduTech

4 YEARS	8 SEMESTERS	160 TOTAL CREDITS	8 L&T EDUTECH COURSES
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PROGRAM OVERVIEW

The programme runs across eight semesters and 160 credits, moving from engineering science in the first year to civil engineering fundamentals in the second and third, and then to transportation, structural and construction specialisations in the final years.

Eight courses are delivered in association with L&T EduTech, beginning with Essentials of Data Science and AI for Civil Engineers in Semester 1 and continuing through Building Information Modelling, Airports and Seaports Engineering, Highway Planning, Pile Foundations, Metro Rail Transportation Systems and Bridge Engineering Design Practices.

Practice runs alongside the coursework: aptitude and soft-skills courses in every semester of the first three years, a summer internship in Semester 5, an industrial internship in Semester 7, and a capstone project spanning Semesters 7 and 8.

DURATION & STRUCTURE

Degree	B.Tech Civil Engineering
Batch	2026–2030
Duration	4 years, 8 semesters
Total credits	160
Program electives	Five, from 20 listed
Internships	Summer + industrial

T Theory **I** Integrated theory and laboratory **PR** Practical **L–T–P–S** Lecture, tutorial, practical and self-study hours per week

Semester-wise course structure

Courses marked **L & T Course** are delivered in association with L&T EduTech.

Semester 1

19 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	C1UB130T	Engineering Chemistry	T	3-0-0-0	3
2	C1UC113T	Engineering Mathematics-I (Civil)	T	3-0-0-0	3
3	C1UD111B	Engineering Physics	I	3-0-1-0	4
4	G3UB102C	Engineering Design and Prototyping	I	1-0-2-1	4
5	L & T Course	Essentials of Data Science and AI for Civil Engineers	T	3-0-0-0	3
6	O1UA105L	Aptitude Skills	PR	0-0-2-0	2
Total					19

Semester 2

21 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	New course	Engineering Mathematics-II (Civil)	T	3-0-0-0	3
2	G3UB201T	Engineering Mechanics	T	3-0-0-0	3
3	G3UB201B	Engineering Workshop & Digital Fabrication	I	3-0-1-0	4
4	New course	Introduction to civil Engineering	I	2-0-1-0	3
5	New course	Science and Engineering for Sustainable World	T	3-0-0-0	3
6	L & T Course	Critical Thinking, Design Thinking, Leadership & Teamwork	T	3-0-0-0	3
7	New course	Applied Aptitude Skills	PR	0-0-2-0	2
Total					21

Semester 3

25 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	New course	Climate change and disaster risk	T	2-0-0-0	2
2	G1UA302B	Mechanics of Materials	I	3-0-1-0	4
3	G1UA303B	Fluid Mechanics	I	3-0-1-0	4
4	G1UA304C	Surveying	I	3-0-1-0	4
5	L & T Course	Building Information Modelling in Construction	T	3-0-0-0	3
6	New course	Building materials & construction	T	3-0-0-0	3
7	New course	Probability and statistics	T	3-0-0-0	3
8	New course	Advanced Aptitude Skills	PR	0-0-2-0	2
Total					25

Semester 4

21 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	G1UA401T	Hydrology & Hydraulic Systems	I	3-0-1-0	4
2	New course	Concrete Technology	I	3-0-1-0	4
3	G1UA401B	Geotechnical Engineering	I	3-0-1-0	4
4	L & T Course	Airports and Seaports Engineering	T	3-0-0-0	3
5	G1UA403B	Structural Analysis	I	3-0-1-0	4
6	New course	Aptitude Proficiency	PR	0-0-4-0	2
Total					21

Semester 5

23 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	G1UA501B	Design of Reinforced Concrete Structures	I	3-0-1-0	4
2	G1UA502T	Water Supply & Treatment Systems	T	3-0-0-0	3
3	L & T Course	Highway Planning, Design and Construction	I	3-0-0-0	3
4	G1UA504T	Advanced Structural Analysis	T	3-0-0-0	3
5	L & T Course	Design And Execution of Pile Foundations	I	3-0-0-0	3
6	Elective	Program Elective I	T	3-0-0-0	3
7	G1UA508R	Summer Internship	PR	0-0-0-0	1
8	New course	Soft Skills and Aptitude Readiness	PR	0-0-4-0	2
	New course	Transportation Engineering Lab	PR	0-0-1-0	1
Total					23

Semester 6

20 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	New course	Advance Transportation Engg Lab	PR	0-0-1-0	1
2	L & T Course	Metro Rail Transportation Systems and Construction	T	3-0-0-0	3
3	G1UA606T	Sewage Treatment Systems	T	3-0-0-0	3
4	G1UA607T	Construction Estimating and Costing	T	3-0-0-0	3
5	G1UA703T	Construction Planning & Management	T	3-0-0-0	3
6	L & T Course	Bridge Engineering Design Practices	T	3-0-0-0	3
7	G1UA610B	Civionics	T	2-0-0-0	2
8	G1UA611B	Civil-3D Designs	PR	0-0-1-0	1
9	G1UA612L	Technical Paper writing	PR	0-0-1-0	1
Total					20

Semester 7

21 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	NC	Program Elective - III	T	3-0-0-0	3
2	NC	Program Elective - IV	T	3-0-0-0	3
3	NC	Program Elective - V	T	3-0-0-0	3
4	New Course	Lean Construction Techniques	T	3-0-0-0	3
5	G1UA704C	Design of Steel Structures	I	3-0-1-0	4
6	G1UA706R	Capstone Phase-1	PR	0-0-0-0	3
7	G1UA705R	Industrial Internship	PR	0-0-0-0	2
Total					21

Semester 8

10 credits

S NO	COURSE CODE	NAME OF THE COURSE	TYPE	L-T-P-S	CREDITS
1	NC	Capstone Phase 2	PR	0-0-0-0	10
Total					10

Credit summary

SEMESTER	1	2	3	4	5	6	7	8	TOTAL
Credits	19	21	25	21	23	20	21	10	160

List of electives

Five program electives are chosen from this list across Semesters 5 and 7.

S.NO	COURSE NAME	TYPE	L-T-P-S	CREDITS
1	Ground Improvement Techniques	T	3-0-0-0	3
2	Soil Dynamics and Machine Foundation	T	3-0-0-0	3
3	Structures on Expansive Soils	T	3-0-0-0	3
4	Mass Transport Management	T	3-0-0-0	3
5	Traffic Engineering	T	3-0-0-0	3
6	Highway Pavement Design	T	3-0-0-0	3
7	Pavement Constructions	T	3-0-0-0	3
8	Transportation Safety and Environment	T	3-0-0-0	3
10	Air and Noise Pollution	T	3-0-0-0	3
11	Solid Waste Management	T	3-0-0-0	3
12	Bioenergy Technologies	T	3-0-0-0	3
13	Environmental Ecology	T	3-0-0-0	3
14	Rehabilitation of structures & Vaastu	T	3-0-0-0	3
15	Bridge Engineering	T	3-0-0-0	3
16	Earthquake Engineering	T	3-0-0-0	3
17	Advanced Concrete Design	T	3-0-0-0	3
18	Construction Planning and Management	T	3-0-0-0	3
19	Economics and Project Finance for Civil	T	3-0-0-0	3
20	Construction Contracts Administration and	T	3-0-0-0	3
21	Airport Planning design	T	3-0-0-0	3

INDUSTRY CERTIFICATION

Eight courses in the structure are delivered in association with L&T EduTech:

1. Essentials of Data Science and AI for Civil Engineers — Sem 1
2. Critical Thinking, Design Thinking, Leadership & Teamwork — Sem 2
3. Building Information Modelling in Construction — Sem 3

4. Airports and Seaports Engineering — Sem 4
5. Highway Planning, Design and Construction — Sem 5
6. Design And Execution of Pile Foundations — Sem 5
7. Metro Rail Transportation Systems and Construction — Sem 6
8. Bridge Engineering Design Practices — Sem 6