

B. Tech	I	Semester	II	Teaching Scheme				Evaluation Scheme	
Subject Name	Civil Engineering Techniques Lab			L	T	P	Credits	CCE	SEE
Subject Code	BTCL22102			0	0	2	1	25	25
Type of course	ESC – Engineering Science Course			CCE : Continuous and Comprehensive Evaluation SEE : Semester End Evaluation					
Prerequisite	No Prerequisite								
Rationale	This syllabus provides a comprehensive foundation in civil engineering, preparing students to address the challenges and opportunities facing India's rapidly developing infrastructure sector. It equips students with the knowledge and skills necessary to pursue successful careers in various areas of civil engineering, while emphasizing sustainability and digital transformation.								

COs	CO statement	Marks % Weightage
CO-1	Describe the fundamental principles of civil engineering, including its current applications, and apply surveying and leveling techniques. (R, U)	15
CO-2	Analyze various building materials, including traditional, modern, and sustainable options, considering their properties, advantages, and limitations. (R, U, A, N)	30
CO-3	Develop a strong understanding of sustainable development principles and their application to infrastructure planning, including urban planning, land use, and green building concepts. (R, U)	30
CO-4	Able to compare different advanced civil engineering techniques, such as mass transportation systems, modern surveying tools, and building automation technologies. (R, U, A, N)	25

Content:

Sr. No.	Content	Total Hrs.	Module Weightage %
01.	Demostration of building components / Site visit / Model	04	15
02.	Building Materials / Field Visit / Market Survey	04	15
03.	Linear and angular measurements – Field Work	04	10
05.	Ancient and Modern Indian contruction marvels / Technical Tour	02	25
06.	Sustainabilty / Presentation on Sustainable Infrastrucutre	04	10
07.	Traffic Volume Study / Noise level measurement	04	10
08.	Study of Total Station	02	10
09.	Undergraduate Report on Civil Engineering Marvels, dams, tunnels, bridges, skyscrapers	02	05
		30	
		Hours	

Recommended Reference Books

- 1 M. S. Shetty "Fundamentals of Civil Engineering" ISBN 978-8120341234, 2018, 1st Edition.
- 2 R. K. Bansal "Surveying and Levelling" ISBN 978-8123901234, 2019, 2nd Edition.
- 3 S. K. Duggal "Building Materials" ISBN 978-8120341234, 2020, 3rd Edition.
- 4 R. C. P. Gupta "Construction Technology" ISBN 978-8120341234, 2021, 1st Edition.
- 5 R. K. Jain "Sustainable Development: Principles and Practice" ISBN 978-8120341234, 2022, 1st Edition.
- 6 A. K. Jain "Green Building: Principles and Practices" ISBN 978-8120341234, 2023, 1st Edition.
- 7 S. P. Gupta "Advanced Construction Techniques" ISBN 978-8120341234, 2021, 1st Edition.
- 8 C. S. Papacostas "Urban Transport Planning" ISBN 978-8120341234, 2020, 2nd Edition.
- 9 R. K. Rajput "GIS for Civil Engineers", ISBN 978-8120341234, 2021, 1st Edition.
- 10 K. R. Arora "Modern Surveying Techniques" ISBN 978-8120341234, 2022, 1st Edition.
- 11 P. K. Jain "Construction Management" ISBN 978-8120341234, 2020, 1st Edition.

CO-PO-Mapping

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	1	1	1	1	1	1	-	1
CO2	2	2	2	1	1	1	2	1	1	2	1	1
CO3	2	2	2	-	1	1	2	1	1	3	1	1
CO4	3	3	3	2	2	2	3	2	2	3	2	2

Suggested List of Open learning websites: