

## B. Tech. (Civil Engineering) Program

### General Structure (2022-26)

Year	Course Code	Semester-I	L	P	U	Course Code	Semester-II	L	P	U
<b>I</b>		Mathematics-I	3	0	3		Mathematics-II	3	0	3
		English Language Skills	2	2	3		Professional Communication	3	0	3
		Chemistry	3	2	4		Environment Sciences & SDGs	2	0	2
		Essence of Indian Traditional Knowledge ( Audit)	0	0	0		Physics	3	2	4
		Introduction to Electrical and Electronics Sciences	3	2	4		Digital Signal Processing	3	0	3
		Computer Programming	3	2	4		Introduction to AI and DS	3	0	3
		Engineering Graphics	1	4	3		Digital Fabrication	2	4	4
		<b>Total No of Credits</b>			<b>21</b>		<b>Total No of Credits</b>			<b>22</b>
<b>II</b>	<b>Semester-III</b>					<b>Semester-IV</b>				
		Introduction to IoT	3	0	3		Optimization Techniques	3	2	4
		Object Oriented Programming Concepts	2	4	4		Environmental Engineering	2	2	3
		Mathematics-III	3	0	3		Water Resources Engineering	3	0	3
		Principles of Managerial Economics	3	0	3		Soil Mechanics	3	2	4
		Engineering Mechanics	3	0	3		Building Materials and Construction	3	2	4
		Surveying	2	2	3		Mechanics of solids	2	2	3
		Fluid Mechanics and HM	2	2	3		CRT	0	2	1
		CRT	0	2	1					
		<b>Total No of Credits</b>			<b>23</b>		<b>Total No of Credits</b>			<b>22</b>
<b>SUMMERINTERNSHIP PROGRAM I (for Internship option only)</b>										<b>5</b>
<b>III</b>	<b>Semester-V</b>					<b>Semester-VI</b>				
		Structural Analysis	3	2	4		Open Elective	3	0	3
		Machine Learning Applications in Civil Engineering	2	0	2		Intelligent Transport Systems	3	0	3
		Highways and Tunnel Engineering	3	2	4		Design of Steel Structures	3	0	3
		Foundation Engineering	3	2	4		Construction Planning and Management	3	2	4
		Water Supply and Waste Water Engineering	3	0	3		Design of Concrete Structures	3	0	3
		Building Drawing, Estimation, Costing and Valuation	3	0	3		Airports, Railways and Harbor Engineering	3	0	3

	Audit Course	0	0	0		Special Project / Capstone Project	0	6	3
	CRT	0	2	1		CRT	0	2	1
	<b>Total No of Credits</b>	<b>21</b>				<b>Total No of Credits</b>	<b>23</b>		
<b>IV</b>	<b>Semester-VII</b>				<b>Semester-VIII</b>				
		Internship Program II /				Internship Program II /			
		Thesis & Seminar /				Thesis & Seminar /			
		Electives (4) + Professional/Discipline				Electives (4) + Professional/Discipline			
		Humanities Elective (1) (Digital Humanities)				Humanities Elective (1) (Digital Humanities)			
		<b>Total No of Credits</b>	<b>20/18</b>				<b>Total No of Credits</b>	<b>20/18</b>	
<b>Total No of Credits</b>									<b>177</b>

*The Program structure is tentative, subject to change (if required).*

<b>FINAL YEAR ELECTIVES</b>				
<b>STRUCTURAL ENGINEERING</b>				
Concrete Technology	3	0	2	4
Finite Element Analysis	3	1	2	4
Automation and Building Information Modeling	2	0	2	3
Prestressed Concrete and Bridge Engineering	3	0	0	3
Design of Industrial Structures	3	0	0	3
Advanced Structural Analysis	3	0	0	3
<b>GEOTECHNICAL ENGINEERING</b>				
Ground Improvement Techniques	3	0	0	3
Soil Dynamics and Machine Foundation Engineering	3	0	0	3
Design of Reinforced Earth and Geotextiles	3	0	0	3
Analysis and Design of Shallow and Deep Foundation	3	0	0	3
<b>TRANSPORTATION ENGINEERING</b>				
Urban Transport Planning	3	0	0	3
Pavement Evaluation, Rehabilitation and Maintenance	3	0	0	3
GIS and Remote Sensing	3	0	0	3
Mass Transportation Operations and Management	3	0	0	3
<b>WATER RESOURCES AND ENVIRONMENTAL ENGINEERING</b>				
Design of Hydraulic Structures (STR/WR)	3	0	0	4

Hazardous Waste Management	3	0	0	3
Environmental Impact Assessment	3	0	0	3
Disaster Management and Mitigation	3	0	0	3
Irrigation Engineering	3	0	0	3
<b>GENERAL ELECTIVE</b>				
Sustainability Development	3	0	0	3
Fire Safety Engineering	3	0	0	3
Safety Engineering	3	0	0	3
<b>MATHEMATICS ELECTIVE</b>				
Probability, Statistics and Linear programming	3	1	0	3
Numerical Methods	3	1	0	3

Digital Humanities Electives I (VII/VIII Semester)				
Course Code	Course Title	L	P	U
	Social Innovation	3	0	3