B. TECH CIVIL ENGINEERING

FIRST SEMESTER

Sr.No.	Course Code	Title of Course	Contact Hours				Credits
			L	T	P	Total	
1.	MA101	Engineering Mathematics - 1	3	1	-	4	4
2.	PH103	Engineering Physics-1	3	1	-	4	4
3.	HS101	English	2	1	-	3	3
4.	CS101	Computer Programming	3	1	-	4	4
5.	PH203	Engineering Physics Lab-1	-	-	2	2	1
6.	CS201	Computer Programming Lab	-	-	4	4	2
7.	ME201	Workshop Practices	-	-	3	3	1.5
8.	HS001	Value Added Course (Human Values and Professional Ethics)	2	0	0	2	2(Audit) Qualifying
		TOTAL				24	19.5

SECOND SEMESTER

Sr. No.	Course Code	Course Title	Contact Hours				Credits
			L	T	P	Total	
1.	HS104	Life Skills and Effective Communication	2	-	-	2	2
2.	MA103	Engineering Mathematics-2	3	1	-	4	4
3.	CH103	Engineering Chemistry	3	1	-	4	4
4.	CE102	Applied Mechanics	3	1	-	4	4
5.	EC102	Electrical Circuit Analysis	3	1	-	4	4
6.	CH202	Engineering Chemistry Lab	-	-	2	2	1
7.	CE201	Applied Mechanics Lab	-	-	2	2	1
8.	EC206	Electrical Circuits Analysis Lab	-	-	2	2	1
9.	ME203	Engineering Drawing & Design	-	-	3	3	1.5
10.		Value Added Course - 2	2	0	0	2	2 (Audit)
		TOTAL				29	22.5

THIRD SEMESTER

Sr.No	Course Code	Course Title	Contact Hours				Credits
			L	T	P	Total	
1.	HS102	Managerial Economics	2	1	-	3	3
2.	CE103	Mechanics of Solids	3	1	-	4	4
3.	CE105	Mechanics of Fluid	3	0	-	3	3
4.	CE106	Geotechnical Engineering	3	0	-	3	3
5.	CE108	Building Materials & Construction	3	-	-	3	3
6.	CE205	Mechanics of Fluid Lab	-	-	2	2	1
7.	CE206	Geotechnical Engineering Lab	-	-	2	2	1
8.	CE208	Building Material Lab	-	-	2	2	1
9.	CS001	Programming in Python	-	-	2	2	1 (Audit)
		Value added course	2	-	-	2	2(Audit)
	CE	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Optional)
		TOTAL				26	19

FOURTH SEMESTER

Sr. No.			Contact Hours				Credits
	New Code	Course Title	L	T	P	Total	
1	HS304	Concepts of Digital Marketing	2	1	-	3	3
2	MA105	Numerical Methods	3	1	-	4	4
3	**CE107**	**Surveying (TRE)**	**3**	**0**	**-**	**3**	**3**
4	CE109	Water Supply Engineering	3	1	-	4	4
5	**CE110**	**Structural Analysis – I (STR)**	**3**	**1**	**-**	**4**	**4**
6	GE001	Value Added Course Environmental Science	2	-	-	2	2(Audit) Qualifying
7	**CE207**	**Surveying Lab (TRE)**	**-**	**-**	**2**	**2**	**1**
8	CE209	Environmental Engineering Lab	-	-	2	2	1
9	CE210	Engineering Geology lab	-	-	2	2	1
		TOTAL				26	21

Students will undergo 4 weeks Industrial Training during Summer Vacation after 4th Semester .

FIFTH SEMESTER

Sr.No.			Contact Hours				Credits
	New Code	Course Title	L	T	P	Total	
1	HS302	Concepts of Financial Management	2	1	-	3	3
2	CE111	Design of Concrete Structures	3	-	-	3	3
3	CE112	Highway Engineering	3	1	-	4	4
4		Science Elective	2	-	-	2	2
5		Discipline Elective – 1(CE)	3	-		3	3
6		Discipline Elective – 2 (CE)	3	-	-	3	3
7	CE211	Highway Engineering Lab	-	-	2	2	1
8	CE212	Civil Engineering Software Lab	-	-	2	2	1
9	CE213	Minor Project 1	-	-	4	4	2
10		Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit) Qualifying
		Total				30	22

SIXTH SEMESTER

Sr.No.			Contact Hours				Credits
	New Code	Course Title	L	T	P	Total	
1	HS305	Logical and Quantitative Techniques	3	-	-	3	3
2	CE113	Foundation Engineering	3	1	-	4	4
3	CE114	Steel Structure Design	3	-	-	3	3
4	CE115	Water Resource Engineering	3	-	-	3	3
5		Discipline Elective – 3 (CE)	2	1	-	3	3
6		Discipline Elective – 4 (CE)	3	-	-	3	3
7	CE214	Foundation Engineering Lab	-	-	2	2	1
8	CE215	Minor Project 2	-	-	6	6	3
9	HS004	Value Added Course (Indian Constitution and Traditional Knowledge)	2	0	0	2	2 (Audit) Qualifying
		TOTAL				27	23

Students will undergo 6 weeks Industrial Training during Summer Vacation after 6th Semester .

SEVENTH SEMESTER

Sr. No.			Contact Hours				Credits
	Course code	Course Title	L	T	P	Total	
1		Discipline Elective – 5(CE)	3	-	-	3	3
2		Discipline Elective – 6(CE)	3	-	-	3	3
3		Discipline Elective –7 (CE)	3	-	-	3	3
4		Open Elective – 1	3	-	-	3	3
5	**CE216**	**Major Project Part-1**	**-**	**-**	**-**	**8**	**4**
6	CE217	Internship/Summer Training (6 weeks - 240-270 hours)	-	-	-	-	6 (Audit) Qualifying
7		Value added course	2	-	-	2	2(Audit)
		TOTAL				20	16

EIGHTH SEMESTER

Sr. No.			Contact Hours				Credits
	Course code	Course Title	L	T	P	Total	
1		Discipline Elective– 8 (CE)	3	-	-	3	3
2		Discipline Elective – 9 (CE)	3	-	-	3	3
3		Open Elective -2	3	-	-	3	3
4	CE218	Major Project Part-2	-	-	-	16	8
		TOTAL				25	17

Total Credits for B. Tech. –160. (Value Added Courses (Audit courses) will not count for CGPA calculations.)

Details of Specialization Courses (Disciplinary)

Construction Management: Construction Management is a specialization required most at construction sites. A Civil Engineering graduate who aspires to make his career in construction industry should opt for this specialization. As the construction industry is modernizing day by day, new technologies and automation is need of the hour. This specialization will equip students with modern day construction practices.

Sr. No.	For Construction Management			Contact Hours				Credits
	Course code	Course Title	Semester	L	T	P	Total	
1	CE351	Sustainable Construction	Third	3	-	-	3	3
2	CE352	Construction Planning and Control	Fourth	3	-	-	3	3
3	CE353	Construction Safety and Health	Fifth	3	-	-	3	3
4	CE354	Advances In Construction Materials	Sixth	3	-	-	3	3
5	CE355	Value Engineering	Seventh	3	-	-	3	3
6	CE356	Construction Financial Management	Seventh	3	-	-	3	3
7	CE401	Project Oriented Practice	Eight	-	-		4	2
			TOTAL				22	20

Structural Engineering: Students who aspire to make their careers in Structural Design should opt for this specialisation. This specialization will equip students with required skills to design structures other than general buildings. With more and more research in construction materials our structures are getting bigger and taller. These structures are subjected to various loads other than Dead Load and Live Load. This specialization will also be helpful for students who want pursue higher studies in the field of Structural Engineering.

S.No.	Course Code	Course Title	Semester	Contact Hours				Credit
				L	T	P	Total	
1	CE361	Concrete Technology	Third	3	-	-	3	3
2	CE402	Concrete Technology Lab	Third	-	-	2	2	1
3	CE362	Numerical Techniques in Civil Engineering	Fourth	3	-	-	3	3
4	CE363	Health Monitoring of Structures	Fifth	3	-	-	3	3
5	CE403	Structural Health Monitoring Lab	Fifth					1
6	CE364	Special Reinforced Concrete Structures	Sixth	3	-	-	3	3
7	CE365	Structural Design and Detailing	Seventh	3	-	-	3	3
8	CE366	Earthquake Engineering	Eighth	3	-	-	3	3
			Total				22	20

Quantity Surveying: Quantity Surveying is a specialization required most for project planning and execution. A Civil Engineering graduate who aspires to make his career in construction industry should opt for this specialization. Specialization in Quantity Surveying emphasizes on the Economic, Legal, Financial and Managerial techniques of the construction process for the student to obtain an in-depth knowledge in these sectors. This specialization will equip students with modern day project planning and management.

Sr. No.	For Quantity Surveying			Contact Hours				Credits
	Course code	Course Title	Semester	L	T	P	Total	
1	CE371	Building Planning and Drawing	Third	2	1	-	3	3
2	CE372	Estimation of Buildings and Roads	Fourth	3	-	-	3	3
3	CE373	Quantity Surveying of Bridges and Hydraulic Structures	Fifth	3	-	-	3	3
4	CE374	Construction Contracts and Laws	Sixth	3	-	-	3	3
5	CE375	Quality Assurance & Quality Control	Seventh	3	-	-	3	3
6	CE356	Construction Financial Management	Seventh	3	-	-	3	3
7	CE401	Project Oriented Practice	Eight	-	-		4	2
			TOTAL				22	20

LIST OF ELECTIVES

Value Added Courses

HS001	Human Values and Professional Ethics
HS002	Professional communication Practice
HS003	Concept of Project Management
HS004	Indian Constitution & Traditional Knowledge
CE001	Fundamentals of Green Infrastructure
CE002	Building Information Modelling and Design using Software

HSS Electives

HS302	Concepts of Financial Management
HS303	Knowledge management
HS304	Concepts of Digital Marketing
HS305	Logical & Quantitative Technique

Science Elective*

From Department with Science name or Physics or Chemistry or Maths with science code.

CE337	Science of Open Channel Flow
CE338	Renewable Energy Science
CE339	Science of Advance Building Material
CE340	Geo-Science
PH542	Nano-Science
PH543	Materials Science and Applications

Discipline Electives 1

CE301	Construction Technology & Management
CE302	Construction Planning and Project Management

Discipline Electives 2

CE303	Waste Water Engineering
CE304	Mechanics of Fluid Machinery
CE305	**Traffic Engineering (TRE)**
CE306	**Advanced Concrete Technology (STR)**

Discipline Electives 3

CE307	**Structural Analysis -2 (STR)**
CE308	Theory of Structures-1
CE309	**Airport and Railway Engineering (TRE)**

Discipline Electives 4

CE310	Sewage Treatment & Disposal
CE311	Mass Transportation Systems
CE312	Docks and Harbor Engineering

Discipline Electives 5

CE313	Estimation and Costing
CE314	Advanced Building Materials
CE315	Theory of Structures-2
CE316	**Wind Resistant Design of Structures (STR)**
CE317	**Urban Transportation Planning & Design (TRE)**

Discipline Electives 6

CE318	Hydropower Engineering
CE319	Advanced Reinforced Concrete Structures
CE320	Rock Mechanics
CE321	Environmental Management & Impact Assessment

Discipline Electives 7

CE322	Geo-environmental Engineering
CE323	Pre-stressed Concrete Structure
CE324	Design of Hydraulic Structures

Discipline Electives 8

CE325	Dam and Reservoir Design
CE326	Underground Technology
CE327	Advanced Pavement Design

Discipline Electives 9

CE328	**Highway Construction, Maintenance and Management (TRE)**
CE329	Design of Water & Wastewater Treatment Plants
CE330	**Earthquake Resistant Structures (STR)**
CE331	Advanced Foundation Engineering

List of Open Electives 1 (Science /Non Engg/all branches)

HS303	Knowledge management
CE332	Introduction to Sustainability

List of Open Electives 2 (Only Engg.)

CE333	Remote Sensing and GIS Applications
CE334	Wind Engineering (WEAC)
CE335	Introduction to Disaster Management
CE336	Infrastructure and Health Monitoring

Note: - List of electives and value added courses can be updated time to time.