



## Course Components of Academic Program B.Tech (Civil Engineering)

Program Duration : 8 Semesters (4 Years)

Total Number of Credits : Credits

AICTE Course Components		Breakup of Credits B.Tech CE	Breakup of Credits B.Tech CE-CM	Breakup of Credits B.Tech CE-GIS & RS
1.	Humanities and Social Sciences including Management courses (HSMC)	21	21	21
2.	Basic Science Courses (BSC)	17	16	16
3.	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	13	9	9
4.	Professional Core Courses (PCC)	58	73	76
5.	Lab Component (LC)	21	23	20
6.	Open Elective Courses (OEC)	12	12	12
7.	Professional Elective Courses (PEC)	15	15	15
8.	Project work, seminar and internship in industry or elsewhere (PR/INT)	12	12	12
Total Credits		<b>169</b>	<b>187**</b>	<b>187**</b>

	*Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Knowledge Tradition, Healthy Living and Fitness] (MC)	4	4	4
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\* These courses are mandatory as prescribed by AICTE and shall be offered as Mandatory Non-Graded (MNG)

**\*\*Optional Additional Credits to earn Specialization (Honours)/Minor: 18 Credits**

- Specializations (Honors) Offered by Department of Civil Engineering**

Name of the Specialization	Offered by
Construction Management (CM)	Department of Civil Engineering
GIS and Remote Sensing (GIS & RS)	Department of Civil Engineering



- **Minor Offered by Other Departments**

Attached As Annexure I.

**Note: Refer the Tables given below mentioning Details of courses under each Specialization/Minor (before the Syllabus section)**

NEP Course Components		Breakup of Credits B.Tech CE	Breakup of Credits B.Tech CE-CM	Breakup of Credits B.Tech CE-GIS & RS
1.	Discipline Specific Core (DSC)	103	119	119
2.	Discipline Specific Elective (DSE)	15	15	15
3.	University Open Elective/Generic Elective (UOE)	12	12	12
4.	Ability Enhancement Course (AEC)	7	7	7
5.	Value Added Course (VAC)	4	3	3
6.	Skill Enhancement Course (SEC)	16	13	13
7.	Project/Seminar/Internship/Summer training (PROJ)	12	12	12
<b>Total Credits</b>		<b>169</b>	<b>187**</b>	<b>187**</b>

  

	Mandatory Non-Graded Course (MNG)	4	4	4
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**\*\*Optional Additional Credits to earn Specialization (Honours)/Minor: 18 Credits**



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## Scheme



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<b>B.Tech. in Civil Engineering</b>													
<b>Scheme of Teaching and Evaluation 2024</b>													
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) as per NEP 2020													
(Effective from the academic year 2024-25)													
<b>Semester I</b>													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	THU101	Professional Communication	AEC	HSMC	2	2	0	0	2	25	25	50	100
2	TPH101/201	Engineering Physics	DSC	BSC	3	3	0	0	3	25	25	50	100
3	TMA101	Engineering Mathematics-I	DSC	BSC	3	2	1	0	3	25	25	50	100
4	TEE101/201	Basic Electrical Engineering	DSC	ESC	2	2	0	0	2	25	25	50	100
5	TCS101	Fundamental of Computer & Introduction to Programming	DSC	ESC	3	3	0	0	3	25	25	50	100
6	HSMC 101/201	Design Thinking	VAC	ESC	1	0	0	2	2	25	25	50	100
7	PEE151/251	Electrical Engineering Lab	DSC	LC	1	0	0	2	2	25	25	50	100
8	PPH151/251	Physics Lab	DSC	LC	1	0	0	2	2	25	25	50	100
9	PME151/251	Workshop And Manufacturing Practices	SEC	LC	2	0	0	4	4	25	25	50	100
10	PCS151	Computer Lab-I	DSC	LC	2	0	0	4	4	25	25	50	100
<b>MNG Course</b>													
11	THF101/201	Healthy Living & Fitness	MNG	MC	2	2	0	0	2	Qualified/ Non-Qualified			
<b>Total</b>					<b>20</b>	<b>12</b>	<b>1</b>	<b>14</b>	<b>27</b>	<b>250</b>	<b>250</b>	<b>500</b>	<b>1000</b>



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(Effective from the academic year 2024-25)													
Semester II													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	THU201	Advanced Professional Communication	AEC	HSMC	2	2	0	0	2	25	25	50	100
2	TCH101/201	Engineering Chemistry	DSC	BSC	3	3	0	0	3	25	25	50	100
3	TMA201	Engineering Mathematics-II	DSC	BSC	3	2	1	0	3	25	25	50	100
4	TCS201	Programming for problem solving	DSC	ESC	3	3	0	0	3	25	25	50	100
5	TEC101/201	Basic Electronics Engineering	DSC	ESC	2	2	0	0	2	25	25	50	100
6	PCH151/251	Chemistry Lab	DSC	LC	1	0	0	2	2	25	25	50	100
7	PME153/253	Engineering Graphics and Design Lab	SEC	LC	2	0	0	4	4	25	25	50	100
8	PCS251	Computer Lab - II	DSC	LC	2	0	0	4	4	25	25	50	100
9	PEC151/251	Basic Electronics Engineering Lab	DSC	LC	1	0	0	2	2	25	25	50	100
10	PCE151/251	Basic Civil Engg Lab	DSC	LC	1	0	0	2	2	25	25	50	100
11	GP201	General Proficiency-I	AEC	HSMC	1	-	-	-	-	100	-	-	100
MNG Course													
12	TEV101/201	Environmental Science	MNG	HSMC	2	2	0	0	2	Qualified/ Non-Qualified			
Total					21	12	1	14	27	350	250	500	1100



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Semester III													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TMA 302	Mathematics III	DSC	BSC	3	3	0	0	3	25	25	50	100
2	TCE 301	Fluid Mechanics.	DSC	PCC	4	4	0	0	4	25	25	50	100
3	TCE 302	Geomatic Engineering.	DSC	PCC	3	2	1	0	3	25	25	50	100
4	TCE 303	Mechanics of Solids	DSC	PCC	3	2	1	0	3	25	25	50	100
5	TCE 304	Building Materials and Construction equipment	DSC	PCC	3	2	1	0	3	25	25	50	100
6	PCE 301	Fluid Mechanics Laboratory	DSC	LC	1	0	0	2	2	25	25	50	100
7	PCE 302	Geomatic Engineering Laboratory	DSC	LC	1	0	0	2	2	25	25	50	100
8	XCS 301	Career Skills-I	SEC	HSMC	2	2	0	0	2	25	25	50	100
9	UHV 301	Universal Human Value -II	VAC	HSMC	2	2	0	0	2	25	25	50	100
Total					22	17	3	4	24	225	225	450	900



Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-I : Construction Management (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 339	Emerging Technologies in Construction Practices ( <b>only for specialization in construction management</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
2	PCE 339	Excel for Civil Engineers Laboratory ( <b>only for specialization in construction management</b> )	DSC	LC	1	0	0	2	2	25	25	50	100
		<b>Total</b>			<b>4</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>50</b>	<b>50</b>	<b>100</b>	<b>200</b>
Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 399	Remote Sensing and Its Techniques ( <b>only for specialization in GIS and Remote Sensing and Minor</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
		<b>Total</b>			<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>25</b>	<b>50</b>	<b>100</b>



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Semester IV													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 401	Hydraulics and Hydraulic Machines	DSC	PCC	4	3	1	0	4	25	25	50	100
2	TCE 402	Structural Analysis	DSC	PCC	3	2	1	0	3	25	25	50	100
3	TCE 403	Soil Mechanics	DSC	PCC	4	3	1	0	4	25	25	50	100
4	TCE 404	Concrete Technology	DSC	PCC	3	3	0	0	3	25	25	50	100
5	TCE 41#	Discipline Electives-I	DSE	PEC	3	3	0	0	3	25	25	50	100
6	PCE 401	Hydraulics and Hydraulic Machines Laboratory.	DSC	LC	1	0	0	2	2	25	25	50	100
7	PCE 402	Concrete Laboratory.	DSC	LC	1	0	0	2	2	25	25	50	100
8	PCE 403	Computer Aided Civil Engineering Drawing	DSC	LC	1	0	0	2	2	25	25	50	100
9	XCS 401	Career Skills-II	SEC	HSMC	2	2	0	0	2	25	25	50	100
10	GP 401	General Proficiency -II	AEC	HSMC	1	0	0	0	0	100	-	-	100
11	VAC 401	Academic Report writing and IPR	VAC	HSMC	0	2	0	0	2	Qualified/ Not Qualified			
MNG Course													
12	HSS 203	Constitution of India	MNG	MC	2	2	0	0	0	Qualified/ Not Qualified			
Total					23	18	3	6	27	325	225	450	1000



Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-I : Construction Management (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 439	Town/Urban Planning and Management (only for specialization in construction management)	DSC	PCC	3	2	1	0	3	25	25	50	100
	Total				3	2	1	0	0	25	25	50	100
	Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme												
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 499	Basic Geographical Information Systems (only for specialization in GIS and Remote Sensing and Minor)	DSC	PCC	3	2	1	0	3	25	25	50	100
	Total				3	2	1	0	0	25	25	50	100
Discipline Specific Elective-I													
S.No	Course Code	Course Name	NEP Component	AICTE Component									
1	TCE 411	Municipal Solid Waste Management.	DSE	PEC									
2	TCE 412	Fundamentals of GIS.	DSE	PEC									
3	TCE 413	Case studies in Civil Engineering.	DSE	PEC									
4	TCE 414	Swayam (Core) Offered in 4th Semester	DSE	PEC									



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Semester V													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 501	Advance Structural Analysis.	DSC	PCC	3	2	1	0	3	25	25	50	100
2	TCE 502	Reinforced Cement Concrete Design.	DSC	PCC	3	2	1	0	3	25	25	50	100
3	TCE 503	Geotechnical and Foundation Engineering.	DSC	PCC	3	2	1	0	3	25	25	50	100
4	TCE 504	Hydrology and Irrigation	DSC	PCC	3	2	1	0	2	25	25	50	100
5	TCE 51#	Discipline Electives -II	DSE	PEC	3	3	0	0	3	25	25	50	100
6	GCE 51#	Generic Elective I	UOE	OEC	3	3	0	0	4	25	25	50	100
7	PCE 501	Geotechnical Engineering Laboratory	DSC	LC	1	0	0	2	2	25	25	50	100
8	PCE 502	Structural Analysis Laboratory	DSC	LC	1	0	0	2	2	25	25	50	100
9	MCE 501	Mini Project (Software).	PROJ	PR	1	0	0	2	3	25	25	50	100
10	XCS 501	Career Skills-III	SEC	HSMC	2	2	0	0	2	25	25	50	100
11	VAC 501	Civil Engineering wonders and challenges	VAC	HSMC	0	2	0	0	2	Qualified/ Not Qualified			
MNG Course													
12	HSS 304	Indian Knowledge System	MNG	MC	2	2	0	0	2	Qualified/ Not Qualified			
Total					23	18	4	6	29	250	250	500	1000



Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-I : Construction Management (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 539	Building Information Modeling( <b>only for specialization in construction management</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
2	PCE 539	Building Information Modeling (BIM) using Autodesk Revit Laboratory ( <b>only for specialization in construction management</b> )	DSC	LC	1	0	0	2	2	25	25	50	100
	Total				4	2	1	2	5	50	50	100	200
Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 599	Advance Geographical Information systems ( <b>only for specialization in GIS and Remote Sensing and Minor</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
	Total				3	2	1	0	0	25	25	50	100
Discipline Specific Elective-II													
S.No	Course Code	Course Name	NEP Component	AICTE Component									
1	TCE 511	Air and Noise pollution	DSE	PEC									
2	TCE 512	Design of Masonry Structure	DSE	PEC									
3	TCE 513	Advance Concrete Technology	DSE	PEC									
4	TCE 514	Swayam (Core) Offered in 5th Semester	DSE	PEC									
University Open Elective* / Generic Elective-I													
Student needs to opt from the pool of Open Electives offered by other departments on ERP. Refer Annexure 2													



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Semester VI													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hrs	CIE	MSE	ESE	Total
1	TCE 601	Water and Wastewater Engineering.	DSC	PCC	3	2	1	0	3	25	25	50	100
2	TCE 602	Advance Reinforced Cement Concrete Design.	DSC	PCC	3	2	1	0	3	25	25	50	100
3	TCE 603	Construction Planning and Management	DSC	PCC	3	2	1	0	3	25	25	50	100
4	TCE 604	Estimation and Costing	DSC	PCC	3	2	1	0	3	25	25	50	100
5	TCE 61#	Discipline Electives -III	DSE	PEC	3	3	0	0	3	25	25	50	100
6	TCE 62#	Discipline Electives -IV	DSE	PEC	3	3	0	0	3	25	25	50	100
7	GCE 61#	University Open Elective* / Generic Elective-II	UOE	OEC	3	3	0	0	3	25	25	50	100
8	MCE 601	Mini Project (Survey Camp).	PROJ	PR	1	0	0	2	2	25	25	50	100
9	XCS 601	Career Skills-IV	SEC	HSMC	2	2	0	0	2	25	25	50	100
10	GP 601	General Proficiency-III	AEC	HSMC	1	0	0	0	0	100	-	-	100
12	VAC 601	Rivers and civilization	VAC	HSMC	0	2	0	0	2	Qualified/ Not Qualified			
Total					25	21	4	2	27	325	225	450	1000



Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-I : Construction Management (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hrs	CIE	MSE	ESE	Total
1	TCE 639	Safety and Health in construction (only for specialization in construction management)	DSC	PCC	3	2	1	0	3	25	25	50	100
2	PCE 639	Basics of Project Management and Primavera Laboratory (only for specialization in construction management)	DSC	LC	1	0	0	2	2	25	25	50	100
					<b>Total</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>50</b>	<b>50</b>	<b>200</b>
Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hrs	CIE	MSE	ESE	Total
1	TCE 699	RS & GIS for Hydrology and Water Resources (only for specialization in GIS and Remote Sensing and Minor)	DSC	PCC	3	2	1	0	3	25	25	50	100
					<b>Total</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>25</b>	<b>100</b>



Discipline Specific Elective-III				
S.No	Course Code	Course Name	NEP Component	AICTE Component
1	TCE 611	Finite element Methods (FEM) in Civil Engineering.	DSE	PEC
2	TCE 612	Geotechnical Earthquake Engineering.	DSE	PEC
3	TCE 613	Design of Hydraulic Structures.	DSE	PEC
4	TCE 614	Swayam (Core) Offered in 6th Semester	DSE	PEC

Discipline Specific Elective-IV				
S.No	Course Code	Course Name	NEP Component	AICTE Component
1	TCE 621	Watershed Management.	DSE	PEC
2	TCE 622	Pre-Stressed Concrete.	DSE	PEC
3	TCE 623	Rock mechanics and foundation on rocks. Swayam (Core) Offered in 7th Semester	DSE	PEC
4	TCE 624	Swayam (Core) Offered in 6th Semester	DSE	PEC

University Open Elective* / Generic Elective-II	
Student needs to opt from the pool of Open Electives offered by other departments on ERP. Refer Annexure 2	



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Semester VII													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 701	Highway and Airfield	DSC	PCC	3	3	0	0	3	25	25	50	100
2	TCE 71#	Discipline Electives-V	DSE	PEC	3	3	0	0	3	25	25	50	100
3	GCE 71#	University Open Elective* / Generic Elective-III	UOE	OEC	3	3	0	0	3	25	25	50	100
4	PCE 701	Industrial summer training	PROJ	INT	2	-	-	-	-	-	-	100	100
5	CEP 701	Major Project -I	PROJ	PR	4	0	0	2	2	50	-	50	100
6	VAC 701	Building planning and Vaastu	VAC	HSMC	0	2	0	0	2	Qualified/ Not Qualified			
Total					15	11	0	2	13	125	75	300	500



Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-I : Construction Management (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 739	Total Quality Management(TQM) in Construction ( <b>only for specialization in construction management</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
	Total				3	2	1	0	0	25	25	50	100
Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 799	Remote Sensing and GIS in Environmental Science ( <b>only for specialization in GIS and Remote Sensing and Minor</b> )	DSC	PCC	3	2	1	0	3	25	25	50	100
	Total				3	2	1	0	0	25	25	50	100
Discipline Specific Elective-V													
S.No	Course Code	Course Name	NEP Component	AICTE Component									
1	TCE 711	Earthquake Resistant Design of Structures.	DSE	PEC									
2	TCE 712	Bridge Engineering.	DSE	PEC									
3	TCE 713	Tunnel Engineering.	DSE	PEC									
4	TCE 714	Swayam (Core) Offered in 7th Sem	DSE	PEC									
University Open Elective* / Generic Elective-III													
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Semester VIII													
COURSE MODULE						TEACHING PERIODS				WEIGHTAGE : EVALUATION			
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 801	Design of Steel Structures	DSC	PCC	4	3	1	0	4	25	25	50	100
2	GCE 81#	University Open Elective* / Generic Elective-IV	UOE	OEC	3	3	0	0	3	25	25	50	100
3	CEP 801	Major Project -II	PROJ	PR	4	0	0	8	8	50	-	50	100
4	GP 801	General Proficiency-IV	AEC	HSMC	1	0	0	0	0	100	-	-	100
5	DM001	Disaster Management	SEC	HSMC	2	2	0	0	2	25	25	50	100
Total					14	8	1	8	17	225	75	200	500



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University under section 2(f) of UGC Act, 1956

Specialisation/Minor (Students may opt either of the one if interested)													
Specialisation-II GIS and RS (or Minor from Civil Engg.) (Optional): Extra credits over above regular scheme													
S.No	Code	Title	NEP Component	AICTE Component	Credits	L	T	P	Contact Hr.	CIE	MSE	ESE	Total
1	TCE 899	Concepts and Applications of Geospatial Technology in Natural Resources Management (only for specialization in GIS and Remote Sensing and Minor)	DSC	PCC	3	2	1	0	3	25	25	50	100
Total					3	2	1	0	0	25	25	50	100

University Open Elective* / Generic Elective-IV
Student needs to opt from the pool of Open Electives offered by other departments on ERP. Refer Annexure 2



Civil Dept.		List Of Minor courses Offered by department of Civil Engineering - (Sp note: Can not be chosen by Civil Students as Minor)		
Semester	Course code	Course Name	NEP Component	AICTE Component
III	TCE 399	Remote Sensing and Its Techniques	UOE	OEC
IV	TCE 499	Basic Geographical Information Systems	UOE	OEC
V	TCE 599	Advance Geographical Information systems	UOE	OEC
VI	TCE 699	RS & GIS for Hydrology and Water Resources	UOE	OEC
VII	TCE 799	Remote Sensing and GIS in Environmental Science	UOE	OEC
VIII	TCE 899	Concepts and Applications of Geospatial Technology in Natural Resources Management	UOE	OEC

- List of **all the courses offered in the curriculum** under each of the components
- **List of courses offered under Discipline Specific Core (DSC)**

S.No	Sem	Course Code	Course Name	Credits
1	I	TPH 101	Engineering Physics	3
2	I	TMA 101	Engineering Mathematics-I	4
3	I	TEE 101/201	Basic Electrical Engineering	2
4	I	TCS 201	Fundamental of Computer & Introduction to Programming	3
5	I	PEE 151/251	Electrical Engineering Lab	1
6	I	PPH 151/251	Physics Lab	1
7	I	PCS 251	Computer Lab-I	2
8	II	TCH 101/201	Engineering Chemistry	3
9	II	TMA 201	Engineering Mathematics-II	3
10	II	TCS 201	Programming for problem solving	2
11	II	TEC 101/201	Basic Electronics Engineering	2
12	II	PCH 151/251	Chemistry Lab	1
13	II	PME 153/253	Engineering Graphics and Design Lab	2
14	II	PCS 251	Computer Lab - II	2
15	II	PEC 151/251	Electronics Engineering Lab	1
16	II	PCE 151/251	Basic Civil Engg Lab	1
17	III	TMA 302	Mathematics III	3
18	III	TCE 301	Fluid Mechanics.	4
19	III	TCE 302	Geomatic Engineering.	3
20	III	TCE 303	Solid Mechanics.	3
21	III	TCE 304	Building Materials and Construction equipment	3
22	III	PCE 301	Fluid Mechanics Laboratory	1
23	III	PCE 302	Geomatic Engineering Laboratory	1
24	III	TCE 339	Emerging Technologies in Construction Practices.	3
25	III	PCE 339	Excel for Civil Engineers Laboratory	1
26	III	TCE 399	Remote Sensing and Its Techniques	3
27	IV	TCE 401	Hydraulics and Hydraulic Machines	4
28	IV	TCE 402	Structural Analysis	3
29	IV	TCE 403	Soil Mechanics	4
30	IV	TCE 404	Concrete Technology	3
31	IV	PCE 401	Hydraulics and Hydraulic Machines Laboratory.	1
32	IV	PCE 402	Concrete Laboratory.	1
33	IV	PCE 403	Computer Aided Civil Engineering Drawing	1
34	IV	TCE 439	Town/Urban Planning and Management	3
35	IV	TCE 499	Basic Geographical Information Systems	3
36	V	TCE 501	Advance Structural Analysis.	3
37	V	TCE 502	Reinforced Cement Concrete Design.	3
38	V	TCE 503	Geotechnical and Foundation Engineering.	3
39	V	TCE 504	Hydrology and Irrigation	3
40	V	PCE 501	Geotechnical Engineering Laboratory	1

41	V	PCE 502	Structural Analysis Laboratory	1
42	V	TCE 539	Building Information Modeling	3
43	V	PCE 539	Building Information Modeling (BIM) using Autodesk Revit Laboratory	1
44	V	TCE 599	Advance Geographical Information systems	3
45	VI	TCE 601	Water and Wastewater Engineering.	3
46	VI	TCE 602	Advance Reinforced Cement Concrete Design.	3
47	VI	TCE 603	Construction Planning and Management	3
48	VI	TCE 604	Estimation and Costing	3
49	VI	TCE 639	Safety and Health in construction	3
50	VI	PCE 639	Basics of Project Management and Primavera Laboratory	1
51	VI	TCE 699	RS & GIS for Hydrology and Water Resources	3
52	VII	TCE 701	Highway and Airfield	3
53	VII	TCE 739	Total Quality Management (TQM) in Construction	3
54	VII	TCE 799	Remote Sensing and GIS in Environmental Science	3
55	VIII	TCE 801	Design of Steel Structures	4
56	VIII	TCE 899	Concepts and Applications of Geospatial Technology in Natural Resources Management	3

**List of courses offered under Discipline Specific Elective (DSE)**

S.No	Sem	Course Code	Course Name	Credits
1	IV	TCE 41#	Discipline Electives-I	3
2	IV	TCE 411	Municipal Solid Waste Management.	3
3	IV	TCE 412	Fundamentals of GIS.	3
4	IV	TCE 413	Case studies in Civil Engineering.	3
5	IV	TCE 414	Swayam (Core) Offered in 4th Semester	3
6	V	TCE 51#	Discipline Electives -II	3
7	V	TCE 511	Air and Noise pollution	3
8	V	TCE 512	Design of Masonry Structure	3
9	V	TCE 513	Advance Concrete Technology	3
10	V	TCE 514	Swayam (Core) Offered in 5th Semester	3
11	VI	TCE 61#	Discipline Electives -III	3
12	VI	TCE 62#	Discipline Electives -IV	3
13	VI	TCE 611	Finite element Methods (FEM) in Civil Engineering.	3
14	VI	TCE 612	Geotechnical Earthquake Engineering.	3
15	VI	TCE 613	Design of Hydraulic Structures.	3
16	VI	TCE 614	Swayam (Core) Offered in 6th Semester	3
17	VI	TCE 621	Watershed Management.	3
18	VI	TCE 622	Pre-Stressed Concrete.	3
19	VI	TCE 623	Rock mechanics and foundation on rocks. Swayam (Core) Offered in 7th Semester	3
20	VI	TCE 624	Swayam (Core) Offered in 6th Semester	3
21	VII	TCE 71#	Discipline Electives-V	3
22	VII	TCE 711	Earthquake Resistant Design of Structures.	3
23	VII	TCE 712	Bridge Engineering.	3
24	VII	TCE 713	Tunnel Engineering.	3
25	VII	TCE 714	Swayam (Core) Offered in 7th Sem	3

**List of courses offered under University Open Elective/Generic Elective (UOE) (For other Departments)**

S.No	Sem	Course Code	Course Name	Remarks
1	3	TCE 304	Building Materials and Construction equipment	Not for Civil Students
2	4	TCE 404	Concrete Technology	Not for Civil Students

**List of courses offered under Ability Enhancement (AEC)**

S.No	Sem	Course Code	Course Name	Credits
1	I	THU 101	Professional Communication	2
2	II	THU 101/201	Advanced Professional Communication	2
3	IV	GP 401	General Proficiency -II	1
4	VI	GP 601	General Proficiency-III	1
5	VIII	GP 801	General Proficiency-IV	1

**List of courses offered under Skill Enhancement (SEC)**

S.No	Sem	Course Code	Course Name	Credits
1	I	PME 151/251	Workshop And Manufacturing Practices	2
2	II	GP 201	General Proficiency-I	1
3	III	XCS 301	Career Skills-I	2
4	IV	XCS 401	Career Skills-II	2
5	V	XCS 501	Career Skills-III	2
6	VI	XCS 601	Career Skills-IV	2
7	VII	DM 001	Disaster Management	2

**List of courses offered under Value Added (VAC)**

S.No	Sem	Course Code	Course Name	Credits
1	I	HSMC 102	Design Thinking	1
2	III	UHV 301	Universal Human Value -II	2
3	IV	VAC 401	Academic Report writing and IPR	0
4	V	VAC 501	Civil Engineering wonders and challenges	0
5	VI	VAC 601	Rivers and civilization	0
6	VII	VAC 701	Building planning and Vaastu	0

**List of courses offered under Mandatory Non-Graded Course (MNG)**

S.No	Sem	Course Code	Course Name	Credits
1	I	THF101	Healthy Living & Fitness	0
2	II	TEV101	Environmental Science	0
3	IV	HSS 203	Constitution of India	0
4	V	HSS 304	Indian Knowledge System	0

- **Optional Courses**

### **List of Specializations offered by the Department of CE**

#### **a) Specialization in CM**

<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>
1	3	TCE 339	Emerging Technologies in Construction Practices	3
2	3	PCE 339	Excel for Civil Engineers Laboratory	1
3	4	TCE 439	Town/Urban Planning and Management	3
4	5	TCE 539	Building Information Modeling	3
5	5	PCE 539	Building Information Modeling (BIM) using Autodesk Revit Laboratory	1
6	6	TCE 639	Safety and Health in construction	3
7	6	PCE 639	Basics of Project Management and Primavera Laboratory	1
8	7	TCE 739	Total Quality Management(TQM) in Construction	3

#### **b) Specialization in GIS & RS**

<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>
1	3	TCE 399	Remote Sensing and Its Techniques	3
2	4	TCE 499	Basic Geographical Information Systems	3
3	5	TCE 599	Advance Geographical Information systems	3
4	6	TCE 699	RS & GIS for Hydrology and Water Resources	3
5	7	TCE 799	Remote Sensing and GIS in Environmental Science	3
6	8	TCE 899	Concepts and Applications of Geospatial Technology in Natural Resources Management	3

## 6. EXIT OPTIONS

SEM	Exit Option	Credits*	Additional Credit	List of Exit Courses
I & II	U.G Certificate in Civil Engineering	41	6	<ul style="list-style-type: none"> <li>• Materials and Civil Engineering (3-0-0 = 3 Credits)</li> <li>• Testing of Civil Engineering Materials (0 -0 -4 = 2 Credits)</li> <li>• Introduction to construction methodology and technics (3-0-0= 3 Credits)</li> <li>• Introduction to construction equipment's (3-0-0 = 3 Credits)</li> <li>• Site Supervision work (0 -0- 4= 2 Credits)</li> <li>• Survey Work (0-0-4 = 2 Credits)</li> <li>• Bar-Bending schedule work ( 0- 0 -4 = 2 Credits)</li> </ul>
III & IV	U.G. Diploma in Civil Engineering	45	6	<ul style="list-style-type: none"> <li>• Advance Concrete Technology. (2-0-4 = 3 Credits)</li> <li>• Fundamentals of structural Design (2-0-0= 2Credits)</li> <li>• Quantity Survey and Estimation (2-0-4= 3 Credits)</li> <li>• Sustainable Construction and Lean Construction (3-0-0 = 3 credits)</li> <li>• 10. Introduction to Building Information Modeling (BIM) (2-0-0= 2 credits)</li> </ul>
V & VI	B.Tech. Vocational In Civil Engineering	48	6	<ul style="list-style-type: none"> <li>• Advance Concrete Technology. (2-0-4 = 3 Credits)</li> <li>• Formwork Engineering (2-0-2 = 3 credits)</li> <li>• Airports and Harbor (3-0-0 = 3 credits)</li> <li>• Construction Management and Safety (3-0-0 = 3 Credits)</li> <li>• Introduction and Application of AI, ML and IOT for Civil Engineering (3-0-0 = 3 Credits)</li> <li>• Sustainable and green construction (3-0 -0 = 3 Credits)</li> </ul>
VII & VIII	B.Tech. in Civil Engineering	29	--	--
	* B.Tech. in Civil Engineering with ( minor/ Specialization)	29+18 additional		--

**\*Credits shall be customized as per the scheme of the program and Exit Options as specified in the Model Curriculum**

**\*\*Additional 18 credits are required to award (Minor/Honours with Specialization)**