

**Course Structure**  
**Evaluation Scheme**

Sr. No	Particulars of Evaluation	MSE	CA		ESE		Total
			CA <sub>1</sub>	CA <sub>2</sub>	Internal	External	
01	Theory courses	20	10	10	---	60	100
02	Audit courses	---	50	50	---	---	100
03	Studio Courses (Product Design Engg)	---	30	30	40	---	100
03	Laboratory (Practical) courses	---	15	15	10	10	50
04	Seminar / Min Project/ Project Stage I	---	30		20	---	50
05	Field Training	---	---	---	50	---	50
06	Project Stage II	---	---	---	50	50	100

**Semester- III**

Sr. No.	Subject Code	Subject	Contact Hours			Credit		
			L	T	P			
<b>Theory</b>								
01	BTBSC301	Mathematics – III	3	1	-	4		
02	BTCVC302	Mechanics of Solids	3	1	✓	4		
03	BTCVC303	Hydraulics I	2	1	✓	3		
04	BTCVC304	Surveying I	2	1	✓	3		
✓05	BTCVC305	Building Construction	2	-	✓	2		
✓06	BTCVC306	Engineering Geology	2	-	✓	2		
07	BTHM303	Soft Skills Development	2	-	-	AU		
<b>Practical / Drawing and/or Design</b>								
✓08	BTCVL307	Hydraulics Laboratory I	-	-	2	1		
✓09	BTCVL308	Surveying Laboratory I	-	-	2	1		
✓10	BTCVL309	Building Construction - Drawings Laboratory	-	-	2	1		
✓11	BTCVL310	Engineering Geology Lab	-	-	2	1		
✓12	BTCVS311	Seminar on Topic of Field Visit to Foundation Work	-	-	1	AU		
✓13	BTCVF312	Field Training / Internship/Industrial Training Evaluation (from semester II)	-	-	-	1		
			Sub-Total			16	4	09
			Total			29		23

**Semester- IV**

Sr. No.	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01	BTCVC401	Hydraulics II	2	1	✓	3
02	BTCVC402	Surveying – II	2	1	✓	3
03	BTCVC403	Structural Mechanics-I	3	1	-	4

04	BTID405	Product Design Engineering	1	2	-	3
05	CV E1	Elective I	3	-	-	3
06	BTCVC406	Engineering Management	1	-	-	AU
07	BTHM3401	Basic Human Rights	2	-	-	AU
<b>Practical / Drawing and/or Design</b>						
08	BTCVL407	Hydraulics Laboratory II	-	-	2	1
09	BTCVL408	Surveying Laboratory II	-	-	4	2
10	BTCVL409	Mechanics of Solids Laboratory	-	-	2	1
11	BTCVM410	Mini Project	-	-	2	1
12	BTCVF411	Seminar on Topic of Field Visit to works involving Superstructure Construction	-	-	1	1
Sub-Total			14	5	11	
Total			31			22
<b>Elective I</b>						
	BTCVE404A	Numerical Methods in Engineering				
	BTCVE404B	Planning for Sustainable Development	3	-	-	3
	BTCVE404C	Instrumentation & Sensor Technologies for Civil Engineering Applications				

### Semester- V

Sr. No	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01	BTCVC 501	Design of Steel Structures	2	2	-	4
02	BTCVC 502	Structural Mechanics-II	2	1	-	3
03	BTCVC 503	Soil Mechanics	3	1	✓	4
04	BTCVC 504	Environmental Engineering	2	-	✓	2
05	BTCVC 505	Transportation Engineering	2	-	✓	2
06	CV E2	Elective II	3	-	-	3
07	BTHM507	Essence of Indian Traditional Knowledge	1	-	-	AU
<b>Practical / Drawing and/or Design</b>						
08	BTCVL508	Soil Mechanics Laboratory	-	-	2	1
09	BTCVL509	Environmental Engineering Laboratory	-	-	2	1
10	BTCVL510	Transportation Engineering Laboratory	-	-	2	1
11	BTCVS511	Seminar on Topic of Field Visit to works related to Building Services	-	-	1	AU
Sub-Total			15	4	7	
Total			26			21
<b>Elective II</b>						
	BTCVE506A	Materials, Testing & Evaluation				
	BTCVE506B	Computer Aided Drawing	3	-	-	3
	BTCVE506C	Development Engineering				
	BTCVE506D	Business Communication & Presentation Skills				

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**FACULTY OF ENGINEERING AND TECHNOLOGY**

**TE (Civil) Syllabus Structure -(w.e.f. June -2018)**

**Part -I**

Subject Code	Subject	Th	Pr/TW	Marks					Credit
		Hrs	Hrs	TH	CT	PR	TW	TOTAL	
CED301	Theory of Structures II	4	-	80	20	-	-	100	4
CED302	Design of Structures-I (Steel)	4	-	80	20	-	-	100	4
CED303	Building Planning and Design	4	4	80	20	50	50	200	6
CED304	Engineering Geology	4	2	80	20	25	25	150	5
CED305	Highway Engineering	4	2	80	20	25	25	150	5
CED331	Lab III: Communication Skills II	2		-	-		50	50	2
<b>Total</b>		22	8	400	100	100	150	750	26
<b>Total</b>		<b>30</b>							

**Part -II**

Subject Code	Subject	Th	PR/TW	Marks					Credit
		Hrs	Hrs	TH	CT	PR	TW	TOTAL	
CED306	Design of Structures-II (RCC)	4	-	80	20	-	-	100	4
CED307	Professional Practices	4	4	80	20	25	50	175	6
CED308	Geotechnical Engineering	4	2	80	20	25	25	150	5
CED309	Water Resources Engineering-I	4	-	80	20	-	-	100	4
CED310	Elective I	4	-	80	20	-	-	100	4
CED332	Lab IV: Structural Design & Drawing (Steel)	-	4	-	-	25	50	75	2
CED333	Lab V : Computer Lab III	-	2	-	-	-	50	50	1
<b>Total</b>		20	12	400	100	75	175	750	26
<b>Total</b>		<b>32</b>							

## B. Tech. Civil Engineering

### Course Structure for Semester VII (Fourth Year) w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTCVC701	Core	Design of Concrete Structures - II	2	1	--	20	20	60	100	3
BTCVC702	Core	Infrastructure Engineering	3	--	--	20	20	60	100	3
BTCVC703	Core	Water Resources Engineering	3	1	--	20	20	60	100	4
BTCVC704	Core	Professional Practices	2	1	--	20	20	60	100	3
BTCVE705A	Elective IV	Construction Techniques	3	--	--	20	20	60	100	3
BTCVE705B		Engineering Economics								
BTCVE705C		Finite Element Method								
BTCVE705D		Limit State Design of Steel Structures								
BTCVE705E		Plastic Analysis and Design								
BTCVE705F		Water Power Engineering								
BTCVOE706A	Open Elective V	Advanced Structural Mechanics	3	--	--	--	--	--	--	Audit (AU/ NP)
BTCVOE706B		Air Pollution Control								
BTCVOE706C		Bridge Engineering								
BTCVOE706D		Introduction to Earthquake Engineering								
BTCVOE706E		Town and Urban Planning								
BTCVOE706F		Tunneling and Underground Excavations								
BTCVL707	Laboratory	Design & Drawing of RC & Steel Structures	--	--	2	30	--	20	50	1
BTCVL708	Laboratory	Professional Practices	--	--	2	30	--	20	50	1
BTCVT709	Training	Field Training /Internship/Industrial	--	--	--	--	--	50	50	1
BTCVS710	BTS	Seminar	--	--	2	--	--	50	50	1
BTCVP711	BTP	Project Stage-I**	--	--	6	--	50	50	100	3
<b>Total</b>			<b>16</b>	<b>3</b>	<b>12</b>	<b>160</b>	<b>150</b>	<b>490</b>	<b>800</b>	<b>23</b>

\*\*In case of students opting for Internship and Industry Project in the eighth semester, the Project must be industry-based.

**B. Tech. Civil Engineering**  
Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme <sup>s</sup>				Credits
			L	T	P	CA	MSE	ESE	Total	
BTCVSS801A	(Self-Study Course) <sup>#</sup>	Characterization of Construction Materials	03**	--	--	20	20	60	100	3
BTCVSS801B		Geosynthetics and Reinforced Soil Structures								
BTCVSS801C		Higher Surveying								
BTCVSS801D		Maintenance and Repair of Concrete Structures								
BTCESS801E		Structural Dynamics								
BTCESS802A	(Self-Study Course) <sup>#</sup>	Energy Efficiency Acoustics and Daylighting in Building	03**	--	--	20	20	60	100	3
BTCESS802B		Environmental Remediation of Contaminated Sites								
BTCESS802C		Remote Sensing Essentials								
BTCESS802D		Mechanical Characterization of Bituminous Materials								
BTCESS802E		Soil Structure Interaction								
BTCEP803	Project Stage-II	In-house Project or Internship and Project in Industry*	--	--	30	50	--	100	150	15
Total			04	--	30	90	40	220	350	21

<sup>#</sup> The subjects are to be studied on self-study mode using SWAYAM/NPTEL/any other online source approved by the University.

<sup>\*\*</sup> If required Coordinator may be appointed for each Self study course and an administrative load of 03 hours per week may be considered for monitoring and assisting the students, and to conduct examination (if required), evaluation and preparation of result.

<sup>s</sup> If the examination schedule for the online Self study course chosen by student do not match with the University's Academic Schedule, the University/Institute have to conduct exam for such courses.

\* Six months of Internship and Project in the Industry. One Faculty guide from the Institute and one Mentor from the Industry should be identified to monitor the progress of work. During the Project/Internship period of work, a review of work should be taken twice followed by a final presentation at the end of Project period.

## First Semester

Sr. No.	Subject Code	Name of Subject	Hours /Week			Credit	Examination Scheme				
			L	P	T		Theory		CA	PR/OR	Total
							TH	MTE			
01	CVSE101	Theory of Elasticity and Plasticity	03	--	1	04	60	20	20	--	100
02	CVSE102	Matrix Methods of Structural Analysis	03	--	1	04	60	20	20	--	100
03	CVSE103	Structural Dynamics	03	--	1	04	60	20	20	--	100
04	CVSE104	Communication Skills	02	--	--	02	--	--	25	25	50
05	CVSE-L01	PG Lab-I	--	03	--	02	--	--	25	25	50
06	CVSE-E1	Elective-I	03	--	--	03	60	20	20	--	100
07	CVSE-E2	Elective-II	03	--	--	03	60	20	20	--	100
<b>Total for Semester I</b>			<b>17</b>	<b>03</b>	<b>03</b>	<b>22</b>	<b>300</b>	<b>100</b>	<b>150</b>	<b>50</b>	<b>600</b>

### Elective-I

✓ CVSE-E1-01: Design of Bridges

CVSE-E1-02: Numerical Methods

CVSE-E1-03: Approximate Analysis of Structural Systems \*\*

### Elective-II

✓ CVSE-E2-01: Advanced Pre-stressed Concrete

✓ CVSE-E2-02: Design of Masonry Structures

CVSE-E2-03: Assessment of Structural Loading \*\*

\*\* Syllabus of these courses is under preparation.

## Second Semester

Sr. No.	Subject Code	Name of Subject	Hours /Week			Credit	Examination Scheme				
			L	P	T		Theory		CA	PR/OR	Total
							TH	MTE			
01	CVSE201	Theory of Plates and Shells	03	--	1	04	60	20	20	--	100
02	CVSE202	Finite Element Analysis	03	--	1	04	60	20	20	--	100
03	CVSE-S01	Seminar-I	--	04	--	02	--	--	50	50	100
04	CVSE-L02	PG Lab-II or Mini -Project	--	04	--	02	--	--	50	50	100
05	CVSE-E3	Elective-III (Departmental)	03	--	--	03	60	20	20	--	100
06	CVSE-E4	Elective-IV (Departmental)	03	--	--	03	60	20	20	--	100
07	CVSE-E5	Elective-V (Open)	03	--	--	03	60	20	20	--	100
<b>Total for Semester II</b>			<b>15</b>	<b>08</b>	<b>02</b>	<b>21</b>	<b>300</b>	<b>100</b>	<b>200</b>	<b>100</b>	<b>700</b>

### Elective-III

- ✓ CVSE-E3-01: Design of Cold Formed Steel Structures
- ✓ CVSE-E3-02: Structural Health Monitoring
- ✓ CVSE-E3-03: Retrofitting of Structures

### Elective- IV

- ✓ CVSE-E4-01: Design of Tall Buildings
- ✓ CVSE-E4-02: Earthquake Engineering & Design of Earthquake Resistant Structures
- ✓ CVSE-E4-03: Structural Audits

### Elective-V (Open)

- CVSE-E5-01: Research Methodology
- CVSE-E5-02: Soil Dynamics & Machine Foundations
- CVSE-E5-03: Solution Procedures in Civil Engineering

### Third Semester

Sr. No.	Subject Code	Name of the subject	Hours/Week			Credit	Examination scheme				
			L	P	T		Theory		CA	PR / OR	Total
							TH	Test			
1	CVSE301	Project Management and Intellectual Property Rights (Self Study)*	--	--	--	02	--	--	50	50	100
2	CVSEPS1	Project Stage -I	--	--	--	10	--	--	50	50	100
<b>Total for Semester III</b>			--	--	--	12	--	--	100	100	200

### Fourth Semester

Sr. No.	Subject Code	Name of the subject	Hours/Week			Credit	Examination scheme				
			L	P	T		Theory		CA	PR / OR	Total
							TH	Test			
1	CVSEPS2	Project Stage-II	--	--	--	20	--	--	100	100	200
<b>Total for Semester IV</b>			--	--	--	20	--	--	100	100	200
<b>GRAND TOTAL</b>											1700

\* Student may select this course either from NPTEL/MOOC pool or any other approved reputed source. The submission of course completion certificate is mandatory.