

**Course Structure  
for Degree Programme  
B. Tech. in Civil Engineering**

**with effect from AY 2018-19**



**Dr. Babasaheb Ambedkar Technological University  
Lonere 402 103, Dist- Raigad, Maharashtra, INDIA**

## Course Structure

- 1) Subjects with code CV belong to Civil Engineering
- 2) Subjects with code CVE indicate Civil Engineering Elective Course
- 3) Elective Subject Codes suffixed as OS indicate an Open Subject. Students willing to register for such courses shall contact Course Coordinator for information on prerequisites
- 4) Subjects with code CVL indicate Civil Engineering Laboratory
- 5) Code CVP indicate Civil Engineering Project work
- 6) Code CVF indicate Civil Engineering Fieldwork related
- 7) Subjects with code CVA indicate Civil Engineering Audit Course which may be an Open Subject

### Semester- III

Sr. No.	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01		Mathematics – III	3	1	-	4
02	CV 302	Mechanics of Solids	3	1	-	4
03	CV 303	Hydraulics I	2	1	-	3
04	CV 304	Surveying I	2	1	-	3
05	CV 305	Building Construction	2	-	-	2
06	CV 306	Engineering Geology	2	-	-	2
07	CVA 301	Soft Skills Development	2	-	-	AU
<b>Practical / Drawing and/or Design</b>						
08	CVL 301	Hydraulics Laboratory I	-	-	2	1
09	CVL 302	Surveying Laboratory I	-	-	2	1
10	CVL 304	Building Construction - Drawings Laboratory	-	-	2	1
11	CVL 305	Engineering Geology Lab	-	-	2	1
12	CVF 301	Seminar on Topic of Field Visit to Foundation Work	-	-	1	AU
13		Field Training / Internship/Industrial Training Evaluation (from semester II)	-	-	-	1
		Sub-Total	16	4	09	
		<b>Total</b>	<b>29</b>			<b>23</b>

### Semester- IV

Sr. No.	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01	CV 401	Hydraulics II	2	1	-	3
02	CV 402	Surveying – II	3	1	-	4
03	CV 403	Structural Mechanics-I	3	1	-	4

04	CV 404	Product Design Engineering	2	-	-	2
05	CV E1	<b>Elective I</b>	3	-	-	3
06	CVA 402	Engineering Management	1	-	-	AU
07	CVA 403	Basic Human Rights	2	-	-	AU
<b>Practical / Drawing and/or Design</b>						
08	CVL 401	Hydraulics Laboratory II	-	-	2	1
09	CVL 402	Surveying Laboratory II	-	-	4	2
10	CVL 403	Mechanics of Solids Laboratory	-	-	2	1
11	CVP 401	Mini Project	-	-	2	1
12	CVF 402	Seminar on Topic of Field Visit to works involving Superstructure Construction	-	-	1	1
Sub-Total			16	3	11	
<b>Total</b>			<b>30</b>			<b>22</b>
<b>Elective I</b>						
	CVE1 401 CVE1 402 OS CVE1 403 OS	Numerical Methods in Engineering Planning for Sustainable Development Instrumentation & Sensor Technologies for Civil Engineering Applications	3	-	-	3

### Semester- V

Sr. No	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01	CV 501	Design of Steel Structures	2	2	-	4
02	CV 502	Structural Mechanics-II	2	1	-	3
03	CV 503	Soil Mechanics	3	1	-	4
04	CV 504	Environmental Engineering	2	-	-	2
05	CV 505	Transportation Engineering	2	-	-	2
06	CV E2	<b>Elective II</b>	3	-	-	3
07	CVA 504	Essence of Indian Traditional Knowledge	1	-	-	AU
<b>Practical / Drawing and/or Design</b>						
08	CVL 501	Soil Mechanics Laboratory	-	-	2	1
09	CVL 502	Environmental Engineering Laboratory	-	-	2	1
10	CVL 503	Transportation Engineering Laboratory	-	-	2	1
11	CVF 503	Seminar on Topic of Field Visit to works related to Building Services	-	-	1	AU
Sub-Total			15	4	7	
<b>Total</b>			<b>26</b>			<b>21</b>
<b>Elective II</b>						
	CVE2-501 CVE2-502 OS CVE2-503 CVE3-504 OS	Materials, Testing & Evaluation Computer Aided Drawing Development Engineering Business Communication & Presentation Skills	3	-	-	3

### Semester- VI

§: Students should register for the CVF 705 in Semester VI to undergo training during vacation after semester VI and appear at examination in Semester VII. Result shall appear in Grade-sheet of Semester VII

Subject	Subject Title	Contact hours	Cre
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Sr. No.	Code		L	T	P	dit
01	CV 601	Design of Concrete Structures I	2	1	-	3
02	CV 602	Foundation Engineering	3	1	-	4
03	CV 603	Concrete Technology	2	-	-	2
04	CV 604	Project Management	2	1	-	3
05	CV E3	<b>Elective III</b>	3	-	-	3
06	CVA 605	Building Planning and Design	2	-	-	AU
<b>Practical / Drawing and/or Design</b>						
07	CVL 601	Concrete Technology Laboratory	-	-	2	1
08	CVL 602	Building Planning, Design and Drawing Laboratory	-	-	4	2
09	CVL 603	Community Project (Minor Project)	-	-	2	1
10	CVF 604	Seminar on Topic of Field Visit Road Construction	-	-	1	AU
11	CVF 705	Industrial Training <sup>s</sup>	-	-	2	--
		Sub-Total	<b>14</b>	<b>3</b>	<b>11</b>	
		<b>Total</b>	<b>28</b>			<b>19</b>
<b>Elective III</b>						
	CVE3-401 CVE3-402 OS CVE3-403 CVE3-404	Waste Water Treatment Operations Research Geographic Data Analysis and Applications Advanced Engineering Geology				

### Semester – VII

Sr. No.	Subject Code	Subject Title	Contact hours			Credit
			L	T	P	
01	CV 701	Design of Concrete Structures II	2	1	-	3
02	CV 702	Infrastructure Engineering	3	-	-	3
03	CV 703	Water Resources Engineering	2	1	-	3
04	CV 704	Professional Practices	2	1	-	3
05	CV E4	<b>Elective IV</b>	3	-	-	3
06	CV E5	<b>Elective V</b>	3	-	-	3
<b>Practical / Drawing and/or Design</b>						
07	CVL 701	Professional Practices Laboratory	-	-	2	1
08	CVL 702	Structural Design & Drawing of Steel Structures	-	-	4	2
09	CVP 702	Project Stage-I (Major Project)	-	-	2	1
10	CVF 705	Industrial Training	-	-	-	AU
		Sub-Total	<b>15</b>	<b>3</b>	<b>08</b>	
		<b>Total</b>	<b>26</b>			<b>22</b>
<b>Elective IV</b>						
	CVE4-701 CVE4-702 OS CVE4-703 CVE4-704 OS CVE4-705	Plastic Analysis and Design Machine Foundations Modern Surveying Techniques Engineering Economics Ground Improvement Techniques	-	-	-	-
<b>Elective V</b>						
	CVE5-701 CVE5-702 CVE5-703 CVE5-703	Advanced Structural Mechanics Town and Urban Planning Construction Economics & Finance Intelligent Transportation Systems	-	-	-	--




## Semester – VIII

Sr. No.	Subject Code	Subject Title	Contact hours			Credit
			L	T	P	
01	CV 801	Introduction to Earthquake Engineering	2	1		3
02	CV E6	<b>Elective VI</b>	3	-		3
03	CV E7	<b>Elective VII</b>	3	-		3
04	CV E8	<b>Elective VIII</b>	3	-		3
<b>Practical / Drawing and/or Design</b>						
05	CVL 801	Earthquake Engineering Laboratory	-	-	2	1
06	CVL 802	Structural Design and Drawing of RC Structures	-	-	4	2
07	CVF 806	Self-Study Report based on field visit to Infrastructure Project Works	-	-	2	1
08	CVP 803	Project Stage-II	-	-	8	4
		Sub-Total	<b>11</b>	<b>1</b>	<b>16</b>	
		<b>Total</b>	<b>28</b>			<b>20</b>
<b>Elective VI</b>						
	CVE6-801	Limit State Design of Steel Structures				
	CVE6-802	Construction Techniques				
	CVE6-803	Pavement Management System	-	-		-
	CVE6-804 OS	Composite Materials				
	CVE6-805 OS	Disaster Preparedness & Planning Management				
<b>Elective VII</b>						
	CVE7-801	Bridge Engineering				
	CVE7-802	Structural Audit				
	CVE7-803	Design of Hydraulic Structures	-	-		-
	CVE7-804	Environmental Impact Assessment and Life Cycle Analyses				
<b>Elective VIII</b>						
	CVE8-801 OS	Rock Mechanics				
	CVE8-802 OS	Water Power Engineering				
	CVE8-803	Water Resources Economics Planning and Management	-	-		-
	CVE8-804 OS	Finite Element Method				
	CVE8-805	Repair & Rehabilitation of Structures				
<b>Overall Total</b>			<b>50+168 = 218</b>			<b>125</b>

## Detailed Syllabus

### Semester III

#### Semester- III

Sr. No.	Subject Code	Subject	Contact Hours			Credit
			L	T	P	
<b>Theory</b>						
01		Mathematics – III	3	1	-	4
02	CV 302	Mechanics of Solids	3	1		4
03	CV 303	Hydraulics I	2	1		3
04	CV 304	Surveying I	2	1		3