

# Dr. Ambedkar Institute of Technology

(An Autonomous Institute affiliated to VTU, Accredited by NAAC with 'A' grade)

## Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION I SEMESTER (Autonomous) 2020-21, 2021-22

### M. Tech in Structural Engineering

**I semester**

Sl. No.	Sub Code	Subject Title	Teaching Department	Teaching hours per week			Maximum Marks allotted			Examination Credits
				Lecture	Tutorial/ Seminar/ Assignment	Practical / Project	CIE	SEE	Total	
1	20CSE11	Computational Structural Mechanics		4	-	-	50	50	100	3
2	20CSE12	Advanced Design of RC Structures		4	-	-	50	50	100	3
3	20CSE13	Mechanics of Deformable Bodies		4	-	-	50	50	100	3
4	20CSE14	Structural Dynamics		4	-	-	50	50	100	3
5	20CSE15X	ELECTIVE – I		4	-	-	50	50	100	3
6	20CSE16X	ELECTIVE – II		4	-	-	50	50	100	3
7	20CSEL17	Structural Engineering Laboratory		-	-	3	50	50	100	2
8	20CSES18	Technical Seminar*		-	4	-	50	-	50	2
9	20CSEM19	Minor project/ Industry visit/ Field work		-	-	6	50	-	50	2
<b>Total</b>							<b>450</b>	<b>350</b>	<b>800</b>	<b>24</b>

\*Technical Seminar: Seminar on Advanced topics from refereed journals by each student.

**ELECTIVE - I**

**ELECTIVE - II**

Sl. No	Subject Code	Subject title
1	20CSE151	Advanced Design of Pre-stressed Concrete Structures
2	20CSE152	Special Concrete
3	20CSE153	Design of Pre-cast and Composite Structures
4	20CSE154	Reliability Analysis of Structures

Sl. No	Subject Code	Subject title
1	20CSE161	Optimization Techniques
2	20CSE162	Composites and Smart materials
3	20CSE163	Advanced Structural Mechanics
4	20CSE164	Earth and Earth Retaining Structures

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## Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION II SEMESTER (Autonomous) 2020-21, 2021-22

### M. Tech in Structural Engineering

#### II semester

Sl. No.	Sub Code	Subject Title	Teaching Department	Teaching hours per week			Maximum Marks allotted			Examination Credits
				Lecture	Tutorial/ Seminar/ Assignment	Practical / Project	CIE	SEE	Total	
1	20CSE21	Advanced Design of Steel Structures		4	-	-	50	50	100	3
2	20CSE22	Earthquake Resistant Structures		4	-	-	50	50	100	3
3	20CSE23	Finite Element Method of Analysis		4	-	-	50	50	100	3
4	20CSE24	Design Concepts of Substructures		4	-	-	50	50	100	3
5	20CSE25X	ELECTIVE – III		4	-	-	50	50	100	3
6	20CSE26X	ELECTIVE – IV		4	-	-	50	50	100	3
7	20RM27	Research Methodology		2	--	-	50	50	100	2
8	20CSEL28	Computational Structural Engineering Laboratory		-	-	3	50	50	100	2
9	20CSEP29	Project Work Phase – I (Presentation of Synopsis)		-	-	6	50	-	50	2
<b>Total</b>							<b>450</b>	<b>400</b>	<b>850</b>	<b>24</b>

#### ELECTIVE-III

Sl. No	Subject Code	Subject title
1	20CSE251	Design of Tall Structures
2	20CSE252	Repair and Rehabilitation of Structures
3	20CSE253	Stability of Structures
4	20CSE254	Design of Plates and Shells

#### ELECTIVE-IV

Sl. No	Subject Code	Name of the Subject
1	20CSE261	Design of Industrial Structures
2	20CSE262	Theory of Plasticity and Fracture Mechanics
3	20CSE263	Masonry structures
4	20CSE264	Design of Concrete Bridge Structures

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## Department of Civil Engineering

SCHEME OF TEACHING AND EXAMINATION III SEMESTER (Autonomous) 2020-21, 2021-22

### M. Tech in Structural Engineering

#### III semester

Sl. No.	Sub Code	Subject Title	Teaching Department	Teaching hours per week			Maximum Marks allotted			Examination Credits
				Lecture	Tutorial/ Seminar/ Assignment	Practical / Field Work	CIE	SEE	Total	
1	20CSE31	Self-Study – Massive Open Online Course (MOOC) *		--	8	--	50	50	100	3
2	20CSEI32	Internship #		--	--	16	50	50	100	8
3	20CSES33	Technical Seminar \$		-	4	-	50	-	50	2
4	20CSEP34	Evaluation of Project Work Phase I		-	-	12	50	50	100	7
<b>Total</b>							<b>200</b>	<b>150</b>	<b>350</b>	<b>20</b>

\* List of Massive Open Online Courses (NPTEL/SWAYAM) shall be decided in the Board of Studies meeting. Students shall register for MOOC during 1<sup>st</sup> /2<sup>nd</sup> /3<sup>rd</sup> semester and shall be completed before the last working day of the 3<sup>rd</sup> semester. The assignment and examination marks along with certificate should be submitted to the examination section.

# The student shall make a midterm presentation of the activities undertaken during the first 8 weeks of internship to a panel comprising Internship Guide, a senior faculty from the department and Head of the Department.

The Department shall facilitate and monitor the student internship program.

**The internship report of each student shall be submitted to the Institute.**

\$ Each student is required to choose a topic in the Structural Engineering domain, preferably from outside the regular curriculum, and give a seminar for about 45 minutes before a committee consisting of at least three faculty members (preferably specialized in Structural Engineering) shall assess the presentation and award marks to the students based on merits of the topic of presentation. Continuous Internal Assessment marks are awarded based on the relevance of the topic, presentation skill, quality of the report write-up and participation.

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SCHEME OF TEACHING AND EXAMINATION IV SEMESTER (Autonomous) 2020-21, 2021-22

### M. Tech in Structural Engineering

#### IV semester

Sl. No.	Sub Code	Subject Title	Teaching Department	Teaching hours per week			Maximum Marks allotted			Examination Credits
				Lecture	Tutorial/ Seminar/ Assignment	Practical / Field Work	CIE	SEE	Total	
1	20CSEP41	Project Phase – II Midterm Internal Evaluation		-	-	8	100	-	100	2
2	20CSEP42	Project Work Evaluation and Viva Voce		-	4	24	100	100	200	18
<b>Total</b>							<b>200</b>	<b>100</b>	<b>300</b>	<b>20</b>
<b>Grand Total (I to IV Semester) : 2300 Marks ; 88 Credits</b>										