DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Structural Engineering)**
Department : **Department of Civil Engineering**
Year : **I**
Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	CEC-541	Continuum Mechanics	PCC	4	3	1	0	3	0
2.	CEC-543	Advanced Concrete Design	PCC	4	3	0	2	3	0
3.	CEC-545	Structural Dynamics	PCC	4	3	1	0	3	0
4.	CEC-547	Behavior & Design of Steel Structures	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-
3.		Program Elective-III	PEC	4	-	-	-	-	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	CEC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

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Program Code : **XXX M.Tech. (Structural Engineering)**
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Year : **II**
Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	CEC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	CEC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	CEC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		**14**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	18	21	13	14
Total Credits	**66**			

M.Tech. (Structural Engineering)

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
1.	CEL-545	Finite Element Analysis	PEC	4	3	0	2	3	0
2.	CEL-642	Analysis and Design of Bridges	PEC	4	3	0	2	3	0
3.	CEL-538	Tall Buildings	PEC	4	3	0	2	3	0
4.	CEL-644	Analysis and Design of Plates and Shells	PEC	4	3	0	2	3	0
5.	CEL-647	Condition Assessment and Retrofitting of Structures	PEC	4	3	0	2	3	0
6.	CEL-539	Advanced Concrete Technology	PEC	4	3	0	2	3	0
7.	CEL-649	Fracture Mechanics in Quasi-Brittle Materials	PEC	4	3	1	0	3	0
8.	CEL-650	Design of Bridge Substructure	PEC	4	3	0	2	3	0
9.	CEL-651	Wind Engineering	PEC	4	3	0	2	3	0
Note: Students should opt for PECs in such a way that they earn 03 credits from practical components in the entire programme.									

Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
1.	CET-501	Nonlinear Finite Element Analysis	STAR	3	3	0	0	3	0
2.	CET-502	Advanced Characterization of Sustainable Building Materials	STAR	3	3	0	0	3	0
3.	CET-503	Mechanics of Composites	STAR	3	3	0	2/2	3	0
4.	CET-504	Introduction to the Theories of Inelasticity	STAR	3	3	0	2/2	3	0
5.	CET-505	Engineering Design Optimization and Reliability	STAR	3	3	0	2/2	3	0