

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI
NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19
Based on CBCS & OBE model
M.Tech. (Structural Engineering)

SEMESTER / Session of Study (Recommended)	Course Level	Category of course	Course Code	Courses	Mode of delivery & credits <i>L-Lecture; T-Tutorial;P- Practical</i>			Total Credits <i>C- Credits</i>	
					L (Periods/ week)	T (Periods/ week)	P (Periods/ week)	C	
THEORY									
FIRST / Monsoon	FIFTH	PC	CE 501	Advanced Solid Mechanics	3	0	0	3	
			CE 502	Advanced Structural Analysis	3	0	0	3	
			CE 503	Structural Dynamics	3	0	0	3	
		PE	Programme Elective – I	3	0	0	3		
		OE	Open Elective – I	3	0	0	3		
	LABORATORY								
	FIFTH	PC	CE504	Structural Design Laboratory – I	0	0	4	2	
		CE505	Numerical Analysis Laboratory	0	0	4	2		
TOTAL								19	
THEORY									
SECOND/ Spring	FIFTH	PC	CE506	Finite Element Method	3	0	0	3	
			CE507	Theory of Plates and Shells	3	0	0	3	
			CE508	Earthquake Engineering	3	0	0	3	
		PE	Programme Elective – II	3	0	0	3		
		OE	Open Elective – II	3	0	0	3		
	LABORATORY								
	FIFTH	PC	CE509	Structural Design Laboratory – II	0	0	4	2	
		CE510	CAD in Structural Engineering	0	0	4	2		
TOTAL								19	
TOTAL FOR FIRST YEAR								38	
THEORY									
	FIFTH	PE	CE511	Advanced Concrete Technology	3	0	0	3	
				Programme Elective – III	3	0	0	3	
	LABORATORY								
	FIFTH	PC	CE512	Advanced Concrete Laboratory	0	0	4	2	
			CE600	Thesis Part 1				8	
TOTAL								16	
FOURTH/ Spring	FIFTH	PC	CE650	Thesis Part 2				16	
TOTAL								16	
TOTAL FOR SECOND YEAR								32	
GRAND TOTAL FOR M.TECH PROGRAMME (38 + 32)								70	

**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
PROGRAMME ELECTIVES (PE)
OFFERED FOR M.Tech. (Structural Engineering)**

PE / LEVEL	Code no.	Name of the PE courses	Prerequisites courses with code	L	T	P	C
5	CE541	Analytical and Numerical Methods in Structural Engineering	NIL	3	0	0	3
	CE542	Bridge Engineering	NIL	3	0	0	3
	CE543	Design of High Rise Structure	NIL	3	0	0	3
	CE544	Design of Industrial Structure	NIL	3	0	0	3
	CE545	Design of Plates and Shells	CE507:Theory of Plates and Shells	3	0	0	3
	CE546	Fracture Mechanics	CE 501:Advanced Solid Mechanics	3	0	0	3
	CE547	Pre-Stressed Concrete	NIL	3	0	0	3
	CE548	Soil Structure Interaction	CE 503:Structural Dynamics	3	0	0	3
	CE549	Structural Design of Foundation	NIL	3	0	0	3
	CE550	Structural Health Monitoring	CE 503:Structural Dynamics	3	0	0	3
	CE551	Structural Optimization	NIL	3	0	0	3
	CE552	Theory of Structural Stability	NIL	3	0	0	3

*** PROGRAMME ELECTIVES TO BE OPTED ONLY BY THE DEPARTMENT STUDENTS**

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
OPEN ELECTIVES (OE)*
OFFERED FOR LEVEL 5-6

OE / LEVEL	Code no.	Name of the OE courses	Prerequisites courses with code	L	T	P	C
5	CE575	Environmental and Natural Resource Management	NIL	3	0	0	3
	CE576	Environmental Science and Management	NIL	3	0	0	3
	CE577	Industrial Pollution Control	NIL	3	0	0	3
	CE578	Waste Management	NIL	3	0	0	3

*** OPEN ELECTIVES TO BE OPTED ONLY BY OTHER DEPARTMENT STUDENTS**