

<b>BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI</b> <b>NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19</b> <b>Based on CBCS &amp; OBE model</b> <b>M.Tech. (Soil Mechanics and Foundation Engineering)</b>								
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
	<b>THEORY</b>							
<b>FIRST / Monsoon</b>	FIFTH	PC	CE501	Advanced Solid Mechanics	3	0	0	3
			CE515	Advanced Soil Mechanics	3	0	0	3
			CE516	Advanced Foundation Engineering	3	0	0	3
		PE	Programme Elective – I	3	0	0	3	
		OE	Open Elective – I	3	0	0	3	
		<b>LABORATORY</b>						
	FIFTH	PC	CE517	Soil Mechanics Laboratory – I	0	0	4	2
			CE505	Numerical Analysis Laboratory	0	0	4	2
	<b>TOTAL</b>							<b>19</b>
	<b>THEORY</b>							
<b>SECOND/ Spring</b>	FIFTH	PC	CE518	Dynamics of Soils and Foundations	3	0	0	3
			CE519	Sub-surface Investigation	3	0	0	3
			CE520	Earth & Earth Retaining Structures	3	0	0	3
		PE	Programme Elective – II	3	0	0	3	
		OE	Open Elective – II	3	0	0	3	
		<b>LABORATORY</b>						
	FIFTH	PC	CE521	Soil Mechanics Laboratory – II	0	0	4	2
			CE522	Advanced Instrumentation Laboratory	0	0	4	2
	<b>TOTAL</b>							<b>19</b>
<b>TOTAL FOR FIRST YEAR</b>								<b>38</b>
	<b>THEORY</b>							
	FIFTH	PE	CE523	Rock Mechanics & Tunneling	3	0	0	3
				Programme Elective - III	3	0	0	3
		<b>LABORATORY</b>						
	FIFTH	PC	CE524	Remote Sensing & GIS Laboratory	0	0	4	2
			CE600	Thesis Part 1				8
		<b>TOTAL</b>						
<b>FOURTH/ Spring</b>	FIFTH	PC	CE650	Thesis Part 2				16
	<b>TOTAL</b>							<b>16</b>
<b>TOTAL FOR SECOND YEAR</b>								<b>32</b>
<b>GRAND TOTAL FOR M.TECH PROGRAMME (38 + 32)</b>								<b>70</b>

**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
**PROGRAMME ELECTIVES (PE)**  
**OFFERED FOR M.Tech. (Soil Mechanics and Foundation Engineering)**

PE / LEVEL	Code no.	Name of the PE courses	Prerequisites courses with code	L	T	P	C
5	CE 553	Earth & Rock-fill Dam	NIL	3	0	0	3
	CE 554	Environmental Geotechnics	NIL	3	0	0	3
	CE 555	Environmental Impact Assessment & Sustainability Development	NIL	3	0	0	3
	CE506	Finite Element Method	CE501 Advanced Solid Mechanics	3	0	0	3
	CE556	Flows through Porous Media	NIL	3	0	0	3
	CE557	Geotechnical Earthquake Engineering	NIL	3	0	0	3
	CE558	Ground Improvement	NIL	3	0	0	3
	CE559	Mining Engineering	NIL	3	0	0	3
	CE560	Remote Sensing, GIS & GPS	NIL	3	0	0	3
	CE561	Sediment Transport	NIL	3	0	0	3
	CE548	Soil Structure Interaction	CE518 Dynamics of Soils & Foundations	3	0	0	3
	CE562	Stability Analysis of Slopes	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