

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
**Based on CBCS system & OBE model**  
**Recommended scheme of study for *B.Tech. (Civil Engineering)***

Semester/ Session of Study (Recommended)	LEVEL	Category of course	Course Code	Subjects	Mode of delivery & credits <i>L-Lecture; T-Tutorial; P-Practicals</i>			Total Credits <i>C- Credits</i>
					L <i>(Periods/week)</i>	T <i>(Periods/week)</i>	P <i>(Periods/week)</i>	C
FIRST Monsoon	<b>THEORY</b>							
	FIRST	FS <i>Foundation Sciences</i>	MA103	Mathematics - I	3	1	0	4
			PH113	Physics	3	1	0	4
		GE <i>General Engineering</i>	EE101	Basics of Electrical Engineering	3	1	0	4
			CS101	Programming for Problem Solving	3	1	0	4
	<b>LABORATORIES</b>							
	FIRST	FS	PH114	Physics Lab	0	0	3	1.5
		GE	CS102	Programming for Problem Solving Lab	0	0	3	1.5
		GE	PE101	Workshop Practice	0	0	3	1.5
		MC Mandatory Course	MC101/102/103/104	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1
	<b>TOTAL</b>							
SECOND Spring	<b>THEORY</b>							
	FIRST	FS	MA107	Mathematics - II	3	1	0	4
			CH101	Chemistry	3	1	0	4
		GE	ME101	Basics of Mechanical Engineering	3	1	0	4
			EC101	Basics of Electronics & Communication Engineering	3	1	0	4
	<b>LABORATORIES</b>							
	FIRST	FS	CH102	Chemistry Lab	0	0	3	1.5
		GE	EC102	Electronics & Communication Lab	0	0	3	1.5
			ME102	Engineering Graphics	0	0	4	2
		MC	MC105/106/107/108	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1
	<b>TOTAL</b>							
<b>GRAND TOTAL FOR FIRST YEAR</b>								<b>43.5</b>

<b>THIRD Monsoon</b>	<b>THEORY</b>							
	<b>SECOND</b>	<b>FS</b>	MA203	Numerical Methods	2	0	0	2
	<b>FIRST</b>		CE101	Environmental Science	2	0	0	2
	<b>SECOND</b>	<b>PC</b>	CE201	Solid Mechanics	3	0	0	3
			CE202	Structural Analysis - I	3	0	0	3
			CE203	Fluid Mechanics	4	0	0	4
			CE204	Building Materials and Construction	3	0	0	3
	<b>LABORATORIES</b>							
	<b>SECOND</b>	<b>GE</b>	IT202	Basic IT Workshop	0	0	2	1
		<b>FS</b>	MA204	Numerical Methods Lab	0	0	2	1
		<b>MC</b>	MC201/202/203/204	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1
		<b>PC</b>	CE205	Civil Engineering Drawing	0	0	4	2
CE206			Fluid Mechanics Laboratory	0	0	2	1	
<b>TOTAL</b>								<b>23</b>
<b>FOURTH Spring</b>	<b>THEORY</b>							
	<b>SECOND</b>	<b>GE</b>	IT201	Basics of Intelligent Computing	3	0	0	3
	<b>FIRST</b>	<b>FS</b>	BE101	Biological Science for Engineers	2	0	0	2
	<b>SECOND</b>	<b>PC</b>	CE207	Structural Analysis - II	3	0	0	3
			CE208	Surveying	4	0	0	4
			CE209	Construction Engineering and Management	3	0	0	3
			CE210	Earthquake Engineering and Disaster Mangement	3	0	0	3
	<b>LABORATORIES</b>							
	<b>FIRST</b>	<b>GE</b>	EE102	Electrical Engineering Lab	0	0	3	1.5
	<b>SECOND</b>	<b>MC</b>	MC205/206/207/208	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1
		<b>PC</b>	CE211	Structural Engineering Laboratory - I	0	0	2	1
			CE212	Surveying Field Work	0	0	4	2
CE213			Specifications Estimation and Costing	1	0	2	2	
<b>TOTAL</b>								<b>25.5</b>

FIFTH Monsoon	<b>THEORY</b>							
	FIRST	HSS	MT123	Business Communications	2	0	2	3
	THIRD	PC	CE301	Structural Design - I	4	0	0	4
			CE302	Water Resources Engineering	4	0	0	4
			CE303	Geotechnical Engineering	4	0	0	4
			CE304	Environmental Engineering	4	0	0	4
			CE305	Transportation Engineering	4	0	0	4
	<b>LABORATORIES</b>							
THIRD	PC	CE306	Water Resources Engineering Laboratory	0	0	2	1	
		CE307	Environmental Engineering Laboratory	0	0	2	1	
<b>TOTAL</b>								<b>25</b>
SIXTH Spring	<b>THEORY</b>							
	THIRD	PC	CE308	Structural Design - II	4	0	0	4
	FOURTH	PE		Elective - I	3	0	0	3
				Elective - II	3	0	0	3
		OE		Open Elective - I	3	0	0	3
				Open Elective - II	3	0	0	3
	THIRD	MC	MC300	Summer Training	N/A			3
	<b>LABORATORIES</b>							
	THIRD	PC	CE309	Structural Engineering Laboratory – II	0	0	2	1
			CE310	Computer Aided Analysis and Design	0	0	2	1
CE311			Geotechnical Engineering Laboratory	0	0	2	1	
CE312			Transportation Engineering Laboratory	0	0	2	1	
<b>TOTAL</b>								<b>23</b>
SEVENTH Monsoon	<b>THEORY</b>							
	FOURTH	HSS	CE401	Professional Practice Law & Ethics	2	0	0	2
		PE		Elective – III	3	0	0	3
				Elective – IV	3	0	0	3
		OE		Open Elective – III	3	0	0	3
				Open Elective – IV	3	0	0	3
	SECOND	MC	MT204	Constitution of India	2	0	0	NC
	<b>LABORATORIES</b>							
FOURTH	PC	CE402	Remote Sensing and GIS Laboratory	0	0	2	1	
<b>TOTAL</b>								<b>15</b>
EIGHTH Spring	FOURTH	PC	CE403	Research Project / Industry Internship	<b>Total</b>			<b>12</b>
<b>GRAND TOTAL</b> <i>Minimum requirement for Degree award</i>								<b>167</b>

**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
**PROGRAMME ELECTIVES (PE)\***  
**OFFERED FOR B.Tech. (Civil Engineering)**

PE / LEVEL	Code no.	Name of the PE subjects	Prerequisites Subjects with code	L	T	P	C
4	CE411	Advanced Structural Analysis	CE202 Structural Analysis – I and CE207 Structural Analysis - II	3	0	0	3
4	CE412	Structural Dynamics	CE202 Structural Analysis – I and CE207 Structural Analysis - II	3	0	0	3
4	CE413	Concrete Technology		3	0	0	3
4	CE414	Pre-stressed Concrete	CE301 Structural Design - I	3	0	0	3
4	CE415	Fluid Dynamics	CE203 Fluid Mechanics	3	0	0	3
4	CE416	Open Channel Flow	CE203 Fluid Mechanics	3	0	0	3
4	CE417	Design of Hydraulic Structures	CE203 Fluid Mechanics	3	0	0	3
4	CE418	Groundwater Engineering	CE203 Fluid Mechanics	3	0	0	3
4	CE419	Advanced Geotechnical Engineering	CE303 Geotechnical Engineering	3	0	0	3
4	CE420	Air Pollution and Control	CE101 Environmental Science	3	0	0	3
4	CE421	Solid Waste Management	CE101 Environmental Science	3	0	0	3
4	CE422	ISO 14000 and Environmental Management system		3	0	0	3
4	CE423	Harbour & Airport Engineering		3	0	0	3
4	CE424	Advanced Surveying	CE208 Surveying	3	0	0	3
4	CE425	Remote Sensing in Civil Engineering		3	0	0	3
4	CE426	Application of Civil Engineering in Mining		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 1-4**

<b>OE / LEVEL</b>	<b>Code no.</b>	<b>Name of the OE subjects</b>	<b>Prerequisites Subjects with code</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
4	CE427	Building Construction		3	0	0	3
4	CE428	Construction Management		3	0	0	3
4	CE429	Disaster Management		3	0	0	3
4	CE430	Environmental Management		3	0	0	3

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