

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
*Based on CBCS & OBE model*  
**Recommended scheme of study for M.Tech Programmes(Power Electronics)**

SEMESTER / Session of Study (Recommended)	Course Level	Category of course	Course Code	Courses	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>							
	Fifth	Programme Core (PC)	EE501	Advanced Digital Signal Processing	3	0	0	3
			EE503	Modern Control Theory	3	0	0	3
			EE507	Advanced Power Electronics	3	0	0	3
		Programme Elective (PE)		Programme Elective -I	3	0	0	3
	Open Elective (OE)		Open Elective-I	3	0	0	3	
	<b>LABORATORIES</b>							
	Fifth	Programme Core (PC)	EE502	Advanced Digital Signal Processing Laboratory	0	0	4	2
			EE506	Advanced Power Electronics Laboratory	0	0	4	2
	<b>TOTAL</b>							
<b>19</b>								
SECOND/ Spring	<b>THEORY</b>							
	Fifth	Programme Core (PC)	EE561	Embedded Control of Switching Power Converter	3	0	0	3
			EE557	Power Electronics Application	3	0	0	3
			EE559	Electric Drives	3	0	0	3
		Programme Elective (PE)		Programme Elective-II	3	0	0	3
	Open Elective (OE )		Open Elective-II	3	0	0	3	
	<b>LABORATORIES</b>							
	Fifth	Programme Core (PC)	EE558	Power Electronics Simulation Laboratory	0	0	4	2
			EE560	Electric drives Laboratory	0	0	4	2
	<b>TOTAL</b>							
<b>19</b>								
<b>TOTAL FOR FIFTH LEVEL</b>								<b>38</b>
THIRD / Monsoon	<b>THEORY</b>							
	Sixth	Programme Core (PC)	EE600	Thesis Part - I				8
			EE603	Power Electronics System Design	3	0	0	3
		Programme Elective (PE)		Programme Elective -III	3	0	0	3
	<b>LABORATORIES</b>							
	Sixth	Programme Core (PC)	EE604	Power Converter Design Laboratory	0	0	4	2
<b>TOTAL</b>								
<b>16</b>								
FOURTH/ Spring	Sixth	Programme Core (PC)	EE650	Thesis Part - II				16
	<b>TOTAL</b>							
<b>16</b>								
<b>TOTAL FOR SIXTH LEVEL</b>								<b>32</b>
<b>GRAND TOTAL FOR M.TECH PROGRAMME (38 + 32)</b>								<b>70</b>

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
*Based on CBCS & OBE model*  
**List Of Program Electives for M.Tech in Electrical Engineering (Power Electronics)**

Level	Course Code	Courses	Prerequisites courses with code	Mode of delivery & credits <i>L-Lecture; T-Tutorial; P-Practicals</i>			Total Credits C- Credits
				L (Periods/ week )	T (Periods/ week)	P (Periods/ week)	C
<b>Programme Elective - I</b>							
<b>5</b>	EE511	Optimization in Engineering Design		3	0	0	3
	EE521	Dynamic Behaviour of Electrical Machines		3	0	0	3
	EE523	Intelligent Motor Controllers		3	0	0	3
	EE525	Modelling of Power Electronic Systems		3	0	0	3
<b>Programme Elective - II</b>							
<b>5</b>	EE571	Soft Computing Techniques in Electrical Engineering		3	0	0	3
	EE581	Advanced DSP Architecture and Programming		3	0	0	3
	EE583	Renewable Sources of Electrical Energy and Grid Integration		3	0	0	3
	EE573	Embedded System and Applications		3	0	0	3
<b>Programme Elective - III</b>							
<b>6</b>	EE621	Power Quality		3	0	0	3
	EE605	Micro-Grid Operation and Control		3	0	0	3
5	EE 535	HVDC & FACTS		3	0	0	3

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
*Based on CBCS & OBE model*  
**LIST OF OPEN ELECTIVES (PG)**

Level of Study	Course Code	Courses	Pre-requisites	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
5	EE585	Hybrid Electric Vehicle	NIL	3	0	0	3
	EE587	Electromechanical Energy Conversion	NIL	3	0	0	3
	EE589	Power Semiconductor Devices	NIL	3	0	0	3
	EE595	Smart Grid	NIL	3	0	0	3
	EE597	Reliability Engineering	NIL	3	0	0	3
6	EE601	Process Measurement and Control	NIL	3	0	0	3