

# BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI

REVISED COURSE STRUCTURE - Effective from academic session 2021-22

Based on CBCS & OBE Model

M.Tech (Power System)

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>	
<b>THEORY</b>								
FIRST / Monsoon	Fifth	Programme Core (PC)	EE501	Advanced Digital Signal Processing	3	0	0	3
			EE503	Modern Control Theory	3	0	0	3
			EE509	Advanced Power System Analysis	3	0	0	3
			EE567	Smart Grid Technology	3	0	0	3
		Programme Elective (PE)		Programme Elective -I	3	0	0	3
	<b>LABORATORIES</b>							
	Fifth	Programme Core (PC)	EE502	Advanced Digital Signal Processing Laboratory	0	0	4	2
	Sixth		EE606	Smart Grid Laboratory	0	0	4	2
<b>TOTAL</b>								19
<b>THEORY</b>								
SECOND/ Spring	Fifth	Programme Core (PC)	EE565	Power System Operation and Control	3	0	0	3
			EE563	Advanced Power System Protection	3	0	0	3
			EE605	Micro- grid Operation and Control	3	0	0	3
				Programme Elective (PE)		Programme Elective -II	3	0
				Programme Elective -III	3	0	0	3
	<b>LABORATORIES</b>							
	Fifth	Programme Core (PC)	EE562	Power System Simulation Lab.	0	0	4	2
			EE564	Advanced Power System Laboratory	0	0	4	2
<b>TOTAL</b>								19
<b>THEORY</b>								
THIRD / Monsoon	Sixth	Programme Core (PC)	EE600	Thesis (Part I)				8
		Open Elective (OE)		OE I / MOOC				3
				OE II / MOOC				3
<b>TOTAL</b>								14
FOURTH/ Spring	Sixth	Programme Core (PC)	EE650	Thesis (Part II)				16
		<b>TOTAL</b>						
<b>GRAND TOTAL FOR M.TECH PROGRAMME (38 + 30)</b>								68

*\* Programme Core and Programme Elective brought to 1st and 2nd semester for restructuring may be interchanged, if required.*

Programme Elective - I								
5	EE511	Optimization in Engineering Design		3	0	0	3	
	EE531	EHV AC Power Transmission		3	0	0	3	
	EE533	Modern Power System Planning		3	0	0	3	
	EE535	HVDC and FACTS		3	0	0	3	
	EE537	Substation Design and Automation		3	0	0	3	
	EE539	Power System Dynamics		3	0	0	3	
Programme Elective - II								
5	EE591	Power System Deregulation		3	0	0	3	
	EE583	Renewable Sources of Electrical Energy & Grid Integration		3	0	0	3	
	EE573	Embedded System and Applications		3	0	0	3	
	EE593	High Voltage Engineering		3	0	0	3	
	EE577	Control of Electric Drives		3	0	0	3	
	EE571	Soft Computing Techniques in Electrical Engineering		3	0	0	3	
	EE553	Non- Linear Control Systems		3	0	0	3	

Programme Elective - III							
6	EE631	Power System Reliability Evaluation		3	0	0	3
	EE633	Power Quality		3	0	0	3
	EE635	Wide Area Monitoring System		3	0	0	3

LIST OF OPEN ELECTIVES (PG)							
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Level of Study	Course Code	Courses	Pre-requisites	Mode of delivery & credits L-Lecture; T-Tutorial;P- Practicals			Total Credits
				L (Periods/ week )	T (Periods/ week)	P (Periods/ week)	C- Credits
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