BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI

PG COURSE STRUCTURE - Effective from academic session-2022-23

Based on CBCS & OBE model

Recommended scheme of study for

M.Tech (Electrical Engineering)

SEMESTER / Session of Study (Recommended)	Course Level	Category of Course	Course Code	Courses	Mode of delivery & credits L-Lecture; T-Tutorial;P-Practicals			Total Credits C- Credits
					L (Periods/week)	T (Periods/week)	P (Periods/week)	C
				THEORY				
FIRST / Monsoon	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
			EE571	Soft Computing Techniques in Electrical Engineering	3	0	0	3
			EE509	Advanced Power System Analysis	3	0	0	3
				LABORATORIES				
		Programme Core(PC)	EE502	Advanced Digital Signal Processing Laboratory	0	0	4	2
			EE512	Advanced Simulation Laboratory	0	0	4	2
		HSS	MT132	Communication Skills-I	0	0	3	1.5
				TOTAL				20.5
SECOND/ Spring	Fifth	Programme Elective (PE)		Programme Electives (A, B and C)	5*3	0	0	5*3
				LABORATORIES				
		HSS	MT133	Communication Skills-II	0	0	3	1.5
		Programme Elective - A POWER SYSTEM BASKET	EE606	Smart Grid Laboratory	0	0	4	2
			EE564	Advanced Power System Laboratory	0	0	4	2
		Programme Elective – B CONTROL SYSTEM BASKET	EE552	Control System Design Laboratory	0	0	4	2
			EE504	AI based Advanced Control System Laboratory	0	0	4	2
		Programme Elective – C POWER ELECTRONICS BASKET	EE572	Power Converter Design Laboratory	0	0	4	2
			EE574	Electric Drives Laboratory	0	0	4	2
				TOTAL				20.5
THIRD / Monsoon	Sixth	Programme Core (PC)	EE600	Thesis (Part I)				8
		Open Elective (OE)		OE I / MOOC				3
				OE II / MOOC				3
				TOTAL				14
FOURTH/ Spring	Sixth	Programme Core (PC)	EE650	Thesis (Part II)				16
				TOTAL				16
				GRAND TOTAL FOR M.TECH PROGRAMME				71

				L	T	P	C
		Programme Elective A (POWER SYSTEM BASKET)					
PE-A	EE583 R1	Renewable Sources of Electrical Energy and Grid Integration		3	0	0	3
	EE599	Digital Power System Protection		3	0	0	3
	EE539	Power System Dynamics		3	0	0	3
	EE605 R1	Micro- grid Operation and Control		3	0	0	3
	EE635	Wide Area Monitoring System		3	0	0	3
	EE545	Modern Power System Planning and Reliability		3	0	0	3
	EE567	Smart Grid Technology		3	0	0	3
	EE565	Power System Operation and Control		3	0	0	3
	EE591	Power System Deregulation		3	0	0	3
	EE541	Condition Monitoring of Power Equipment		3	0	0	3
	EE521R1	Power Quality and Control		3	0	0	3
	EE579	Industrial Instrumentation and Control		3	0	0	3
		Programme Elective B (CONTROL SYSTEM BASKET)					
PE-B	EE505	System Identification and Adaptive Control		3	0	0	3
	EE553	Nonlinear Control System		3	0	0	3
	EE515	Control System Design		3	0	0	3
	EE601	Process Measurement and Control		3	0	0	3
	EE551	Optimal Control Theory		3	0	0	3
	EE555	Statistical Control Theory		3	0	0	3
	EE579	Industrial Instrumentation and Control		3	0	0	3
	EE513	Robotics and Automation		3	0	0	3
	EE575	Robust Control		3	0	0	3
	EE569	Electric Vehicle		3	0	0	3
	EE565	Power System Operation and Control		3	0	0	3
	EE611	Physiological Control System		3	0	0	3
		Programme Elective C (POWER ELECTRONICS SYSTEM BASKET)					
PE-C	EE566	Embedded Control of Switching Power Converters		3	0	0	3
	EE543	Switched Mode Power Conversion		3	0	0	3
	EE577	Control of Electric Drives		3	0	0	3
	EE569	Electric Vehicles		3	0	0	3
	EE583R1	Renewable Sources of Electrical Energy and Grid Integration		3	0	0	3
	EE547	Battery Management System		3	0	0	3
	EE621R1	Power Quality and Control		3	0	0	3
	EE579	Industrial Instrumentation and Control		3	0	0	3

	Course Code	Courses	Pre-requisites	LIST OF OPEN ELECTIVES (OE) Mode of delivery & credits L-Lecture; T-Tutorial;P- Practicals			Total Credits C- Credits
				L (Periods/ week)	T (Periods/ week)	P (Periods/ week)	C
OE-I	EE585	Hybrid Electric Vehicle	NIL	3	0	0	3
	EE587	Electromechenical Energy Conversion	NIL	3	0	0	3
	EE589	Power Semiconductor Devices	NIL	3	0	0	3
OE-II	EE595	Smart Grid	NIL	3	0	0	3
	EE597	Reliability Engineering	NIL	3	0	0	3
	EE601	Process Measurement and Control	NIL	3	0	0	3