

# BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI

REVISED COURSE STRUCTURE - Effective from academic session 2021-22

Based on CBCS & OBE Model

M.Tech (Control 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
					L <i>(Periods/week)</i>	T <i>(Periods/week)</i>	P <i>(Periods/week)</i>	C <i>Credits</i>
<b>THEORY</b>								
<b>FIRST / Monsoon</b>	Fifth	Programme Core (PC)	EE501	Advanced Digital Signal Processing	3	0	0	3
			EE503	Modern Control Theory	3	0	0	3
			EE505	System Identification and Adaptive Control	3	0	0	3
			EE601	Process Measurement and Control	3	0	0	3
		Programme Elective (PE)		PE 1	3	0	0	3
	Fifth	Programme Core (PC)	EE502	Advanced Digital Signal Processing Laboratory	0	0	4	2
			EE552	Control System Design Laboratory	0	0	4	2
<b>LABORATORIES</b>								
<b>TOTAL</b>								
					3	0	0	3
<b>THEORY</b>								
<b>SECOND/ Spring</b>	Fifth	Programme Core (PC)	EE551	Optimal Control Theory	3	0	0	3
			EE553	Nonlinear Control System	3	0	0	3
			EE555	Statistical Control Theory	3	0	0	3
		Programme Elective (PE)		PE II	3	0	0	3
				PE III	3	0	0	3
	Fifth	Programme Core (PC)	EE504	AI based Advanced Control System Laboratory	0	0	4	2
			EE554	Power Electronics and Drives Laboratory	0	0	4	2
<b>LABORATORIES</b>								
<b>TOTAL</b>								
					3	0	0	3
<b>THEORY</b>								
<b>THIRD / Monsoon</b>	Sixth	Programme Core (PC)	EE600	Thesis (Part I)				8
		Open Elective (OE)		OE I / MOOC	3	0	0	3
				OE II / MOOC	3	0	0	3
<b>LABORATORIES</b>								
<b>TOTAL</b>								
					3	0	0	3
<b>THEORY</b>								
<b>FOURTH/ Spring</b>	Sixth	(PC)	EE650	Thesis (Part II)				16
								16
<b>LABORATORIES</b>								
<b>TOTAL</b>								
					3	0	0	3
<b>GRAND TOTAL FOR M.TECH PROGRAMME (38 + 30)</b>								
					3	0	0	3

Programme Elective - I								
5	EE511	Optimization in Engineering Design		3	0	0	3	
	EE515	Control System Design		3	0	0	3	
	EE513	Robotics and Automation		3	0	0	3	
	EE517	Image Processing and Computer Vision		3	0	0	3	
Programme Elective - II								
5	EE575	Robust Control	EE575 Modern Control Theory	3	0	0	3	
	EE573	Embedded System and Application		3	0	0	3	
	EE571	Soft Computing Techniques in Engineering		3	0	0	3	
	EE577	Control of Electric Drives		3	0	0	3	
	EE565	Power System Operation and Control		3	0	0	3	
Programme Elective - III								
6	EE611	Physiological Control System		3	0	0	3	
	EE605	Micro- grid Operation and		3	0	0	3	

**LIST OF OPEN ELECTIVES (PG)**

Level of Study	Course	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/</i>	P <i>(Periods/</i>	
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

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING							
Level	Course Code	Courses	Prerequisites courses with	Mode of delivery & credits L-Lecture; T-Tutorial;P-			Total Credits C-
				L	T	P	
<b>Programme Elective - I</b>							
5	EE511	Optimization in Engineering Design		3	0	0	3
	EE515	Control System Design		3	0	0	3
	EE513	Robotics and Automation		3	0	0	3
	EE517	Image Processing and Computer Vision		3	0	0	3
<b>Programme Elective - II</b>							
5	EE571	Soft Computing Techniques in Electrical		3	0	0	3
	EE575	Robust Control		3	0	0	3
	EE577	Control of Electric Drives		3	0	0	3
	EE565	Power System Operation and Control					
	EE573	Embedded System and Applications		3	0	0	3
<b>Programme Elective - III</b>							
6	EE611	Physiological Control System		3	0	0	3
	EE605	Micro- grid Operation and Control		3	0	0	3

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING							
Level of Study	Course Code	Courses	Pre-requisites	Mode of delivery & credits			Total Credits
				L	T	P	
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