

**13. Courses of Study and Scheme of Assessment  
ME POWER ELECTRONICS AND DRIVES**

**(2021 REGULATIONS)  
(Minimum No. of credits to be earned: 70\*)**

Course Code	Course Title	Periods/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
<b>I SEMESTER</b>									
21ED01	Mathematics of Systems Engineering	2	1	0	3	50	50	100	PC
21ED02	Power Semiconductor Devices	3	0	0	3	50	50	100	PC
21ED03	Modeling and Analysis of Electrical Machines	3	0	0	3	50	50	100	PC
21ED04	Power Converters and Analysis	3	1	0	4	50	50	100	PC
21ED05	Modeling and Simulation of Power Electronic Converters	3	1	0	4	50	50	100	PC
21ED06	Research Methodology and IPR	2	0	0	2	50	50	100	RMC
21ED72	Audit Course - I	2	0	0	Grade	100	0	100	MC
21ED51	Power Converters Laboratory	0	0	4	2	50	50	100	PC
21ED52	Object Computing and Data Structures Laboratory	0	0	4	2	50	50	100	PC
<b>Total 29 periods</b>		<b>18</b>	<b>3</b>	<b>8</b>	<b>23</b>	<b>500</b>	<b>400</b>	<b>900</b>	
<b>II SEMESTER</b>									
21ED07	Electric Drives and Control	3	1	0	4	50	50	100	PC
21ED08	Switched Mode Power Converters	3	1	0	4	50	50	100	PC
21ED__	Professional Elective – I	3	0	0	3	50	50	100	PE
21ED__	Professional Elective – II	3	0	0	3	50	50	100	PE
21ED__	Professional Elective – III	3	0	0	3	50	50	100	PE
21ED82	Audit Course – II	2	0	0	Grade	100	0	100	MC
21ED61	Drives and Controls Laboratory	0	0	4	2	50	0	100	PC
21ED62	Power Electronic Systems Design Laboratory	0	0	4	2	50	50	100	PC
21ED63	Industrial Visit and Technical Seminar	0	0	4	2	100	0	100	EEC
<b>Total 31 periods</b>		<b>17</b>	<b>2</b>	<b>12</b>	<b>23</b>	<b>550</b>	<b>350</b>	<b>0</b>	
<b>III SEMESTER</b>									
21ED__	Professional Elective – IV	3	0	0	3	50	50	100	PE
21ED__	Open Elective	3	0	0	3	50	50	100	OE
21ED71	Project Work I	0	0	12	6	100	0	100	EEC
<b>Total 18 periods</b>		<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>200</b>	<b>100</b>	<b>0</b>	
<b>IV SEMESTER</b>									
21ED81	Project Work II	0	0	24	12	50	50	100	EEC
<b>Total 24 periods</b>		<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>	<b>50</b>	<b>50</b>	<b>100</b>	
<b>PROFESSIONAL ELECTIVE THEORY COURSES (Four to be opted)</b>									
21ED21	Power Electronics in Renewable Energy Systems	3	0	0	3	50	50	100	PE
21ED22	Industrial Approach to Power Converter Design	3	0	0	3	50	50	100	PE

21ED23	Internet of Things	3	0	0	3	50	50	100	PE
21ED24	Totally Integrated Automation	3	0	0	3	50	50	100	PE
21ED25	Special Machines and Controllers	3	0	0	3	50	50	100	PE
21ED26	Digital Controller for Power Electronics	3	0	0	3	50	50	100	PE
21ED27	Advanced Control of Electric Drives	3	0	0	3	50	50	100	PE
21ED28	Soft Computing Techniques for Renewable Energy Systems	3	0	0	3	50	50	100	PE
21ED29	Flexible AC Transmission system	3	0	0	3	50	50	100	PE
21ED30	Power Quality Management	3	0	0	3	50	50	100	PE
21ED31	Advanced Topics in Power Electronics	3	0	0	3	50	50	100	PE
21ED32	HVDC Transmission	3	0	0	3	50	50	100	PE
21ED33	Design of Solar Photovoltaic systems	3	0	0	3	50	50	100	PE
21ED34	Optimization Techniques	3	0	0	3	50	50	100	PE
21ED35	Pulse Width Modulated Power Electronic Converters	3	0	0	3	50	50	100	PE
21ED36	Smart Grid Technologies	3	0	0	3	50	50	100	PE
21ED37	Distributed Generation and Micro grids	3	0	0	3	50	50	100	PE
21ED38	Electric Vehicles	3	0	0	3	50	50	100	PE
21ED39	Power Converters and Charging Technologies for Electric Vehicles	3	0	0	3	50	50	100	PE
21ED40	Integrated Circuits and Devices for Power Electronics	3	0	0	3	50	50	100	PE
21ED41	Industrial Drives for Automation	3	0	0	3	50	50	100	PE
<b>OPEN ELECTIVE THEORY COURSES (One to be opted)</b>									
21ED91	Business Analytics	3	0	0	3	50	50	100	OE
21ED92	Electronic Waste Management	3	0	0	3	50	50	100	OE
21ED93	Industrial Safety and Standards	3	0	0	3	50	50	100	OE
21ED94	Innovation and Product Development	3	0	0	3	50	50	100	OE

\* Indicated is the minimum number of credits to be earned by a student.

**CAT – Category; PC – Professional Core; PE - Professional Elective; RMC- Research Methodology and IPR; EEC – Employability Enhancement Course; MC- Mandatory Course; Grade - Completed / Not Completed; OE – Open Elective**