DMI COLLEGE OF ENGINEERING

(An Autonomous Institution)

Palanchur – Nazarathpet P.O., Chennai – 600 123

Affiliated to Anna University, Accredited by NBA

REGULATIONS 2024
CHOICE BASED CREDIT SYSTEM

M.E POWER ELECTRONICS AND DRIVES

CURRICULUM

SEMESTER I

S.NO	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA1114	Applied Mathematics for Power Electronics Engineers	PC	3	1	0	4	4
2.	PX1101	Analysis of Electrical Machines	PC	3	1	0	4	4
3.	PX1102	Analysis of Power Converters	PC	3	1	0	4	4
4.	PX1103	Modeling and Design of SMPS	PC	3	0	0	3	3
5.	RM1101	Research Methodology and IPR	PC	2	0	0	2	2
6.		Professional Elective I	PE	3	0	0	3	3
7.		Audit Course I*	AC	2	0	0	2	0
PRACTICALS								
8.	PX1104	Power Converters Laboratory	PC	0	0	3	3	1.5
9.	PX1105	Analog and Digital Controllers for PE Converters Laboratory	PC	1	0	3	4	2.5
			TOTAL	**20**	**3**	**6**	**29**	**24**

*** Audit Course is optional**

SEMESTER II

S.NO	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	PX 1151	Analysis of Electrical Drives	PC	3	1	0	4	4
2.	PX 1152	Special Electrical Machines	PC	3	0	0	3	3
3.	PX 1153	Electric Vehicles and Power Management	PC	3	1	0	4	4
4.		Professional Elective II	PE	3	0	0	3	3
5.		Professional Elective III	PE	3	0	0	3	3
6.		Audit course II*	AC	2	0	0	2	0
PRACTICALS								
7.	PX 1154	Power Electronics and Drives Laboratory	PC	0	0	3	3	1.5
8.	PX 1155	Design Laboratory for Power Electronics Systems	PC	0	0	3	3	1.5
			TOTAL	**17**	**2**	**6**	**25**	**20**

*** Audit Course is optional**

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective IV	PE	3	0	0	3	3
2.		Professional Elective V	PE	3	0	0	3	3
3.		Open Elective	OE	3	0	0	3	3
PRACTICALS								
4.	PX 1201	Project Work I	EEC	0	0	12	12	6
			TOTAL	**9**	**0**	**12**	**21**	**15**

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	PX1251	Project Work II	EEC	0	0	24	24	12
			TOTAL	**0**	**0**	**24**	**24**	**12**

TOTAL NO. OF CREDITS: 71

FOUNDATION COURSES (FC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			L	T	P		
1.	MA1114	Applied Mathematics for Power Electronics Engineers	3	1	0	4	I

PROFESSIONAL CORE COURSES (PCC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			L	T	P		
1	PX1106	Analysis of Electrical Machines	3	1	0	4	I
2	PX1107	Analysis of Power Converters	3	1	0	4	I
3	PX1108	Modeling and Design of SMPS	3	0	0	3	I
4	PX1109	Power Converters Laboratory	0	0	3	1.5	I
5	PX1110	Analog and Digital Controllers for PE Converters Laboratory	1	0	3	2.5	I
6	PX1156	Analysis of Electrical Drives	3	1	0	4	II
7	PX1157	Special Electrical Machines	3	0	0	3	II
8	PX1158	Electric Vehicles and Power Management	3	1	0	4	II
9	PX1159	Power Electronics and Drives Laboratory	0	0	3	1.5	II
10	PX1160	Design Laboratory for Power Electronics Systems	1	0	3	1.5	II
					TOTAL CREDITS	29	

RESEARCH METHODOLOGY AND IPR COURSES (RMC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			L	T	P		
1.	RM1101	Research Methodology and IPR	2	0	0	2	I

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			L	T	P		
1.	PX1201	Project Work I	0	0	12	6	III
2.	PX1251	Project Work II	0	0	24	12	IV
					TOTAL CREDITS	18	

PROFESSIONAL ELECTIVES

SEMESTER I
ELECTIVE I

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	PX1911	Power Semiconductor Devices	PEC	3	0	0	3	3
2	PX1912	System Design Using Microcontroller	PEC	3	0	0	3	3
3	PX1913	Electromagnetic Field Computation and Modelling	PEC	3	0	0	3	3
4	PX1914	Soft Computing Techniques	PEC	3	0	0	3	3
5	PX1915	System Theory	PEC	3	0	0	3	3

SEMESTER II
ELECTIVE II & III

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	PX1951	Power Electronics for Renewable Energy Systems	PEC	3	0	0	3	3
2	PX1952	Modern Rectifiers and Resonant Converters	PEC	3	0	0	3	3
3	PX1953	Advanced Power Converters	PEC	3	0	0	3	3
4	PX1954	Control of Power Electronic Circuits	PEC	3	0	0	3	3
5	PX1955	Energy Storage Technologies	PEC	3	0	0	3	3
6	PX1956	Power Quality	PEC	3	0	0	3	3
7	PX1957	DSP Based System Design	PEC	3	0	0	3	3
8	PX1958	Machine Learning and Deep Learning	PEC	3	0	0	3	3
9	PX1959	IoT for Smart Systems	PEC	3	0	0	3	3
10	PX1910	MEMS Design: Sensors and Actuators	PEC	3	0	0	3	3

SEMESTER III
ELECTIVE IV & V

S. NO.	COURS ECODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	PX1921	Nonlinear Dynamics for Power Electronics Circuits	PEC	3	0	0	3	3
2	PX1922	Grid Integration of Renewable Energy Sources	PEC	3	0	0	3	3
3	PX1923	Renewable Energy Technology	PEC	3	0	0	3	3
4	PX1924	Wind Energy Conversion System	PEC	3	0	0	3	3
5	PX1925	Optimization Techniques	PEC	3	0	0	3	3
6	PX1926	Distributed Generation and Micro Grid	PEC	3	0	0	3	3
7	PX1927	Energy Management and Auditing	PEC	3	0	0	3	3
8	PX1928	Smart Grid	PEC	3	0	0	3	3
9	PX1929	HVDC and FACTS	PEC	3	0	0	3	3
10	PX1930	Python Programming for Machine Learning	PEC	3	0	0	3	3

AUDIT COURSES - I

REGISTRATION FOR ANY OF THESE COURSES IS OPTIONAL TO STUDENTS

SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	MX1101	English for Research Paper Writing	2	0	0	0
2.	MX1102	Disaster Management	2	0	0	0
3.	MX1103	Constitution of India	2	0	0	0
4.	MX1104	தற்றமிழ் இலக்கியம்	2	0	0	0

LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	PX1701	Integrated Water Resources Management	3	0	0	3
2.	PX1702	Water, Sanitation and Health	3	0	0	3
3.	PX1703	Principles of Sustainable Development	3	0	0	3
4.	PX1704	Environmental Impact Assessment	3	0	0	3
5.	PX1705	Blockchain Technologies	3	0	0	3
6.	PX1706	Deep Learning	3	0	0	3
7.	PX1707	Vibration and Noise Control Strategies	3	0	0	3
8.	PX1708	Energy Conservation and Management in Domestic Sectors	3	0	0	3
9.	PX1709	Additive Manufacturing	3	0	0	3
10.	PX1710	Electric Vehicle Technology	3	0	0	3
11.	PX1711	New Product Development	3	0	0	3
12.	PX1712	Sustainable Management	3	0	0	3
13.	PX1713	Micro and Small Business Management	3	0	0	3
14.	PX1714	Intellectual Property Rights	3	0	0	3
15.	PX1715	Ethical Management	3	0	0	3
16.	PX1716	Security Practices	3	0	0	3
17.	PX1717	Cloud Computing Technologies	3	0	0	3
18.	PX1718	Design Thinking	3	0	0	3
19.	PX1719	Principles of Multimedia	3	0	0	3
20.	PX1720	Big Data Analytics	3	0	0	3
21.	PX1721	Internet of Things and Cloud	3	0	0	3
22.	PX1722	Medical Robotics	3	0	0	3
23.	PX1723	Embedded Automation	3	0	0	3
24.	PX1724	Environmental Sustainability	3	0	0	3
25.	PX1725	Textile Reinforced Composites	3	0	0	3
26.	PX1726	Nanocomposite Materials	3	0	0	3
27.	PX1727	IPR, Biosafety and Entrepreneurship	3	0	0	3

SUMMARY

	Name of the Programme: M.E POWER ELECTRONICS AND DRIVES					
	SUBJECT AREA	CREDITS PER SEMESTER				CREDITS TOTAL
		I	II	III	IV	
1.	FC	4	0	0	0	4
2.	PCC	15	14	0	0	29
3.	PEC	3	6	6	0	15
4.	OEC	0	0	3	0	3
5.	EEC	0	0	6	12	18
6.	RMC	2	0	0	0	2
7.	Non Credit/Audit Course	√	√	0	0	0
	TOTAL	**24**	**20**	**15**	**12**	**71**