

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M. TECH. POWER ELECTRONICS AND ELECTRICAL DRIVES
EFFECTIVE FROM ACADEMIC YEAR 2022- 23 ADMITTED BATCH

R22 COURSE STRUCTURE AND SYLLABUS

I YEAR I SEMESTER

Course Code	Course Title	L	T	P	Credits
Programme Core - I	Advanced Power Electronic Converters-I	3	0	0	3
Programme Core - II	Machine Modelling and Analysis	3	0	0	3
Programme Elective - I	1. HVDC Transmission 2. Microcontroller Applications to Power Electronics 3. Smart Grid Technologies 4. Modern Control Theory	3	0	0	3
Programme Elective - II	1. Power Semiconductor Devices and Modelling 2. Reactive Power Compensation and Management 3. High Frequency Magnetic Components 4. Hybrid Electric Vehicles and Design	3	0	0	3
	Research Methodology and IPR	2	0	0	2
Lab - I	Machine Modelling and Analysis Lab	0	0	4	2
Lab - II	Advanced Power Electronic Converters Lab-I	0	0	4	2
Audit-I	Audit Course - I	2	0	0	0
	Total	16	0	8	18

I YEAR II SEMESTER

Course Code	Course Title	L	T	P	Credits
Programme Core - III	Advanced Power Electronic Converters-II	3	0	0	3
Programme Core - IV	Electrical Drives	3	0	0	3
Programme Elective - III	1. Special Electrical Machines 2. Advanced Digital Signal Processing 3. SCADA Systems and Applications 4. Power Electronics for Renewable Energy Systems	3	0	0	3
Programme Elective - IV	1. DSP based Drive Control 2. Electric Vehicle Charging Techniques 3. Power Quality Improvement Techniques 4. Integration of Energy Sources	3	0	0	3
	Mini Project with Seminar	0	0	4	2
Lab - III	Advanced Power Electronic Converters Lab-II	0	0	4	2
Lab - IV	Electrical Drives Lab	0	0	4	2
Audit-II	Audit Course - II	2	0	0	0
	Total	14	0	12	18

II YEAR I SEMESTER

Course Code	Course Title	L	T	P	Credits
Programme Elective - V	1. Reliability Engineering 2. Flexible AC Transmission Systems 3. Dynamics of Electrical Machines 4. Energy Storage Technologies	3	0	0	3
Open Elective	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Photovoltaic Systems	3	0	0	3
Dissertation	Dissertation work Review - II	0	0	12	6
	Total	6	0	12	12

II YEAR II SEMESTER

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation work Review - III	0	0	12	6
Dissertation	Dissertation Viva-Voce	0	0	28	14
	Total	0	0	40	20

***For Dissertation Work Review - I, Please refer R22 Academic Regulations.**

Open Elective

1. Business Analytics (Offered by **CSE** Department)
2. Industrial Safety (Offered by **Chemical Engineering** Department)
3. Operations Research (Offered by **Mechanical Engineering** Department)
4. Cost Management of Engineering Projects (Offered by **Civil Engineering** Department)
5. Composite Materials (Offered by **Metallurgical Engineering** Department)
6. Photovoltaic Systems (Offered by **EEE** Department)

Audit Course I & II

1. English for Research Paper Writing.
2. Disaster Management.
3. Sanskrit for Technical Knowledge.
4. Value Education.
5. Constitution of India.
6. Pedagogy Studies.
7. Stress Management by Yoga.
8. Personality Development through Life Enlightenment Skills.