

**ACADEMIC REGULATIONS**  
**PROGRAM STRUCTURE**  
**and**  
**DETAILED SYLLABUS**

**Master of Technology**  
**(Power Electronics)**

(Two Year Regular Programme)

(Applicable for Batches admitted from 2018)



**GokarajuRangaraju Institute of Engineering and Technology**  
**(Autonomous)**

**Bachupally, Kukatpally, Hyderabad- 500 090**



## Gokaraju Rangaraju Institute of Engineering and Technology

(Autonomous)

### Department of Electrical and Electronics Engineering

#### Power Electronics

#### I YEAR - I SEMESTER

Sl. No	Group	Subject	Credits			Credits	Int. Marks	Ext. Marks	Total Marks
			L	T	P				
1	Core I	Electric Drives System	3	-	-	3	30	70	100
2	Core II	Power Electronic Converters	3	-	-	3	30	70	100
3	PE I	1. Advanced Power Electronic Converters 2. Power Quality 3. Renewable Energy Systems	3	-	-	3	30	70	100
4	PEII	1. Optimal and Adaptive Control 2. PWM for power electronic converter 3. Electric and Hybrid Vehicles	3	-	-	3	30	70	100
5	Core	Research Methodology and IPR	-	-	4	2	30	70	100
6	Core	Electrical Drives Laboratory	-	-	4	2	30	70	100
7	Core	Power Electronics Lab	2	-	-	2	30	70	100
8	Audit	Audit course -1	2	-	-	0	30	70	100
<b>Total</b>			<b>16</b>	<b>-</b>	<b>8</b>	<b>18</b>	<b>240</b>	<b>560</b>	<b>800</b>

#### I YEAR - II SEMESTER

Sl. No	Group	Subject	Credits			Credits	Int. Marks	Ext. Marks	Total Marks
			L	T	P				
1	Core III	Modeling and Analysis of Electrical Machines	3	-	-	3	30	70	100
2	Core IV	Digital Control of Power Electronic and Drive Systems	3	-	-	3	30	70	100
3	PE III	1. FACTS and Custom Power Devices 2. Dynamics of Electrical Machines 3. Advanced Digital Signal Processing	3	-	-	3	30	70	100
4	PE IV	1. AI Techniques 2. Distributed Generation 3. Smart Grids	3	-	-	3	30	70	100
5	Core	Power Quality lab	-	-	4	2	30	70	100
6	Core	Digital Signal Processing Lab	-	-	4	2	30	70	100
7	Audit	Audit course – 2	2	-	-	2	30	70	100
8	Core	Mini-Projects	2	-	-	0	30	70	100
<b>Total</b>			<b>16</b>	<b>-</b>	<b>8</b>	<b>18</b>	<b>240</b>	<b>560</b>	<b>800</b>

## II YEAR - I SEMESTER

Sl. No	Group	Subject	Credits			Credits	Int. Marks	Ext. Marks	Total Marks
			L	T	P				
1	PE V	1. HVDC 2. Industrial Load Modeling and Control 3. SCADA Systems and Applications	3	-	-	3	30	70	100
2	Open Elective	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects 5. Composite Materials 6. Waste to Energy	3	-	-	3	30	70	100
3	Dissertation	Dissertation Phase – I	-	-	20	10	30	70	100
<b>Total</b>			<b>6</b>	<b>-</b>	<b>20</b>	<b>16</b>	<b>90</b>	<b>210</b>	<b>300</b>

## II YEAR - II SEMESTER

Sl. No	Group	Subject	Credits			Credits	Int. Marks	Ext. Marks	Total Marks
			L	T	P				
1	Dissertation	Dissertation Phase – II	-	-	32	16	30	70	100
<b>Total</b>					<b>32</b>	<b>16</b>	<b>30</b>	<b>70</b>	<b>100</b>

### Audit course 1 & 2

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