



## SIDDHARTHA INSTITUTE OF TECHNOLOGY & SCIENCES (UGC – AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A+' Grade

Narapally, Korremula Road, Ghatkesar, Medchal-Malkajgiri(Dist)-501 301



### M.Tech – Power Electronics and Electrical Drives

#### Course Structure (SITS - R22)

Applicable From 2022-23 Admitted Batch

#### Structure Breakup

S. No	Category	Breakup of credits (Total 68 credits)
1	Programm Core (PC)	20
2	Programm Elective (PE)	15
3	Open Elective (OE)	3
4	Mandatory Credit Course (MCC)	2
5	Project Work / Seminars (PS)	28
6	Audit Course (AC)	-
<b>Total Credits</b>		<b>68</b>

**M.Tech – Power Electronics and Electrical Drives****Course Structure (SITS - R22)**

Applicable From 2022-23 Admitted Batch

**I YEAR I SEMESTER**

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (EIE)	Total
1	2215401	Advanced Power Electronic Converters-I	PC	3	0	0	3	40	60	100
2	2215402	Machine Modelling and Analysis	PC	3	0	0	3	40	60	100
3		Program Elective - I	PE	3	0	0	3	40	60	100
4		Program Elective - II	PE	3	0	0	3	40	60	100
5	2215403	Machine Modelling and Analysis Lab	PC	0	0	4	2	40	60	100
6	2215404	Advanced Power Electronic Converters Lab-I	PC	0	0	4	2	40	60	100
7	2215405	Research Methodology & IPR	MCC	2	0	0	2	40	60	100
8		Audit Course – I	*AC-I	2	0	0	0	-	-	-
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>	<b>280</b>	<b>420</b>	<b>700</b>

**I YEAR II SEMESTER**

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (EIE)	Total
1	2224501	Advanced Power Electronic Converters-II	PC	3	0	0	3	40	60	100
2	2225402	Electrical Drives	PC	3	0	0	3	40	60	100
3		Program Elective - III	PE	3	0	0	3	40	60	100
4		Program Elective - IV	PE	3	0	0	3	40	60	100
5	2225403	Advanced Power Electronic Converters Lab-II	PC	0	0	4	2	40	60	100
6	2225404	Electrical Drives Lab	PC	0	0	4	2	40	60	100
7	2225405	Mini Project with Seminar	PS	0	0	4	2	100	-	100
8		Audit Course – II	*AC-II	2	0	0	0	-	-	-
<b>TOTAL</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>	<b>340</b>	<b>360</b>	<b>700</b>

\*Non-credit Audit Courses will not carry any credits.

**II YEAR I SEMESTER**

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1		Program Elective - V	PE	3	0	0	3	40	60	100
2		Open Elective	OE	3	0	0	3	40	60	100
3	2235401	Dissertation Work Review-II	PS	0	0	12	6	100	0	100
<b>TOTAL</b>				<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>180</b>	<b>120</b>	<b>300</b>

**II YEAR II SEMESTER**

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2245401	Dissertation Work Review-III	PS	0	0	12	6	100	0	100
2	2245502	Dissertation Viva - Voce	PS	0	0	28	14	0	100	100
<b>TOTAL</b>				<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>	<b>100</b>	<b>100</b>	<b>200</b>

**Program Elective (PE) Courses**

**Program Elective-I**

S. No.	Course Code	Course Title
1	2215406	HVDC Transmission
2	2215407	Microcontroller Applications to Power Electronics
3	2215408	Smart Grid Technologies
4	2215409	Modern Control Theory

**Program Elective-II**

S. No.	Course Code	Course Title
1	2215410	Power Semiconductor Devices and Modelling
2	2215411	Reactive Power Compensation and Management
3	2215412	High Frequency Magnetic Components
4	2215413	Hybrid Electric Vehicles and Design

**Program Elective-III**

S. No.	Course Code	Course Title
1	2225406	Special Electrical Machines
2	2225407	Advanced Digital Signal Processing
3	2225408	SCADA Systems and Applications
4	2225409	Power Electronics for Renewable Energy Systems

**Program Elective-IV**

S. No.	Course Code	Course Title
1	2225410	DSP based Drive Control
2	2225411	Electric Vehicle Charging Techniques
3	2225412	Power Quality Improvement Techniques
4	2225413	Integration of Energy Sources

**Program Elective-V**

S. No.	Course Code	Course Title
1	2235402	Reliability Engineering
2	2235403	Flexible AC Transmission System
3	2235404	Dynamics of Electrical Machines
4	2235405	Energy Storage Technologies

**Audit Courses (AC) – I & II**

S. No.	Course Code	Course
1	22XAC01	English for Research Paper Writing and its Significance
2	22XAC02	Disaster Management
3	22XAC03	Sanskrit for Technical Knowledge
4	22XAC04	Value Education
5	22XAC05	Constitution of India
6	22XAC06	Pedagogy Studies
7	22XAC07	Stress Management by Yoga
8	22XAC08	Personality Development Through Life Enlightenment Skills

**Open Elective (OE) Courses for ECE**

S. No.	Course Code	Course Title
1	223OE01	Business Analytics
2	223OE02	Industrial Safety
3	223OE03	Operations Research
4	223OE04	Cost Management of Engineering Projects
5	223OE05	Composite Materials
6	223OE06	Photovoltaic Systems

**Note:** For Audit Courses 'X' indicates 1 or 2 Sem