SETHU INSTITUTE OF TECHNOLOGY

PULLOOR, KARIAPATTI – 626 115.

(AN AUTONOMOUS INSTITUTION)

REGULATION – 2019

M.E POWER ELECTRONICS AND DRIVES

CHOICE BASED CREDIT SYSTEM

CURRICULUM & SYLLABUS

APPROVED IN THE ACADEMIC COUNCIL MEETING HELD ON 21.09.2019

CHAIRMAN

BOARD OF STUDIES

Chairperson
Board of Studies
Electrical & Electronics Engineering
Sethu Institute of Technology
Kariapatti - 626 115

CHAIRMAN

ACADEMIC COUNCIL

CHAIRMAN
ACADEMIC COUNCIL
Sethu Institute of Technology
Pulloor, Kariapatti - 625 115

Vision of the Department

To achieve Excellence in Education and Research in the field of Electrical and Electronics Engineering and provide knowledge based contribution for the development of economy and society

Mission of the Department

- Providing comprehensive and value based education in Electrical and Electronics engineering and related fields to meet intellectual, ethical and career challenges
- Providing state-of- the-art infrastructure and resources to promote teaching-learning and research activities
- Enriching the skills to enhance employability and entrepreneurship
- Strengthening the collaboration with academia, industry and research organizations
- Fostering Research and Development activities leading to innovation and technological growth in the overall ambit of electrical and electronics engineering
- Offering services to the society through education, science and technology

CORE VALUES: Ethics | Quality | Innovation | Teamwork | Social Responsibility

Program Outcomes

Post graduates in engineering will be able to:

PO1. Independently carry out research /investigation and development work to solve practical problems [Problem Solving and Research Skill] (Cognitive -Create)

PO 2. Demonstrate degree of mastery over the area as per the specialization of the program, higher than the requirements in the appropriate bachelor program [Scholarship of knowledge](Cognitive - Apply)

PO 3. Write and present a substantial technical report/document [Communication](Affective Domain - Organization)

PO 4. Apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering activities with an understanding of the limitations.[Modern Tool Usage] (Cognitive - Apply)

PO 5. Recognize the need for, and have the preparation and ability to engage in life-long learning independently, with continuous enthusiasm and commitment to improve knowledge and competence. [Life-long Learning] (Affective Domain- Characterization)

PO 6. Act with professional and ethical responsibility in research and professional practices with consideration of the impact of outcomes to contribute for the sustainable development of the society. [Ethical Practices and Social Responsibility] (Affective Domain - Valuing)

SETHU INSTITUTE OF TECHNOLOGY

Pulloor, Kariapatti - 626 115

M.E. Degree Programme (Full Time)

CURRICULUM

Regulation 2019

Master of Engineering in Power Electronics and Drives

OVERALL COURSE STRUCTURE

Category	Total No. of Courses	Credits	Percentage
Programme-CORE	**8**	**20**	**29**
Programme- ELECTIVE	**5**	**15**	**22**
Open Elective	**1**	**3**	**4**
Mandatory Credit course	**1**	**3**	**4**
Audit course	**2**	**0**	**0**
Project Work	**3**	**29**	**41**
TOTAL	**20**	**70**	**100**

COURSE CREDITS – SEMESTER WISE

Branch	I	II	III	IV	TOTAL
ME-PED	**16**	**16**	**22**	**16**	**70**

Employability Courses
Skill Development Courses
Entrepreneurship Development Courses
Any two or all of the above

M.E POWER ELECTRONICS AND DRIVES

REGULATION – 2019

(Applicable to the students admitted from the Academic Year 2019 – 2020 onwards)

CURRICULUM I TO IV SEMESTERS (FULL TIME)

SEMESTER I

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	19PPE101	Power Electronic Converters	3	0	0	3
2.	19PPE102	Modeling and Analysis of Electrical Machines	3	0	0	3
3.		Elective-1	3	0	0	3
4.	19PGM701	Research Methodology and IPR (Mandatory credit course)	3	0	0	3
5.	19PGM801	Pedagogy studies(Audit Course-1)	2	0	0	0
PRACTICAL						
6.	19PPE103	Power Electronic Converters Laboratory	0	0	4	2
7.	19PPE104	Power Quality Laboratory	0	0	4	2
Total			14	0	8	16
Total Number of Credits: 16						

SEMESTER II

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	19PPE201	Electric Drives System	3	0	0	3
2.	19PPE202	Digital Control of Power Electronic and Drive systems	3	0	0	3
3.		Elective-2	3	0	0	3
4.	19PGM802	English For Research paper writing (Audit Course-II)	2	0	0	0
PRACTICAL						
5.	19PPE203	Electric Drives Laboratory	0	0	4	2
6.	19PPE204	Embedded Control of Power Electronics and Drives Laboratory	0	0	4	2
7.	19PPE205	Mini project with seminar	0	0	4	3
Total			11	0	12	16
Total Number of Credits: 16						

SEMESTER III

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.		Elective-3	3	0	0	3
2.		Elective-4	3	0	0	3
3.		Elective-5	3	0	0	3
4.	-	Open Elective	3	0	0	3
PRACTICAL						
5.	19PPE301	Phase-I Dissertation	0	0	20	10
Total			12	0	20	22
Total Number of Credits: 22						

SEMESTER IV

SL. No.	COURSE CODE	COURSE TITLE	L	T	P	C
PRACTICAL						
1.	19PPE401	Phase-II Dissertation	0	0	32	16
Total			0	0	32	16
Total Number of Credits: 16						

TOTAL NO. OF CREDITS: 70

M.E POWER ELECTRONICS AND DRIVES

REGULATION – 2019

(Applicable to the students admitted from the Academic Year 2019 – 2020 onwards)

CURRICULUM

LIST OF PROGRAMME CORE

S.NO	COURSE CODE	COURSE TITLE	L	T	P	c
1.	19PPE101	Power Electronic Converters	3	0	0	3
2.	19PPE102	Modeling and Analysis of Electrical Machines	3	0	0	3
3.	19PPE103	Power Electronic Converters Laboratory	0	0	4	2
4.	19PPE104	Power Quality Laboratory	0	0	4	2
5.	19PPE201	Electric Drives System	3	0	0	3
6.	19PPE202	Digital Control of Power Electronic and Drive systems	3	0	0	3
7.	19PPE203	Electric Drives Laboratory	0	0	4	2
8.	19PPE204	Embedded Control of Power Electronics and Drives Laboratory	0	0	4	2
9.	19PPE205	Mini project with seminar	0	0	4	3
10.	19PPE301	Phase-I Dissertation	0	0	20	10
11.	19PPE401	Phase-II Dissertation	0	0	32	16

LIST OF PROGRAMME ELECTIVES

SL.NO	COURSE CODE	COURSE TITLE
1.	19PPE501	Advanced Power Electronic Circuits
2.	19PPE502	Optimal and Adaptive Control
3.	19PPE503	Dynamics of Electrical Machines
4.	19PPE504	Harmonics Filter Design
5.	19PPE505	Advanced Control Of Electric Drives
6.	19PPE506	Automotive Electronics
7.	19PPE507	Switched Mode and Resonant Converters
8.	19PPE508	Modern Industrial Drives
9.	19PPE509	Advanced Digital Signal Processing
10.	19PPE510	Advanced Microcontroller based Systems
11.	19PPE511	SCADA Systems and Applications
12.	19PPE512	FACTS and Custom Power Devices
13.	19PPE513	Power Electronics for PV and Wind Energy Systems
14.	19PPE514	Digital Simulation of Power Electronic Systems
15.	19PPE515	HVDC Systems and Control
16.	19PPE516	Electromagnetic Field Computation and Modeling
17.	19PPE517	Computer aided design of Power Electronics Circuits
18.	19PPE518	Electric Vehicles and Power Management
19.	19PPE519	Electric Power Quality
20.	19PPE520	Linear and Non-Linear System Theory
21.	19PPE521	Solar and Energy Storage System
22.	19PPE522	Microcontroller Application in Power Converters
23.	19PPE523	Modern Rectifiers and Resonant Converters
24.	19PPE524	Soft Computing Techniques
25.	19PPE525	Micro Electro Mechanical Systems
26.	19PPE526	Wind Energy Conversion Systems
27.	19PPE527	VLSI Architecture and Design Methodologies
28.	19PPE528	Non Linear Dynamics of Power Electronic Circuits
29.	19PPE529	Smart Grid
30.	19PPE530	Distributed Generation and Micro Grid

31.	19PPE531	Transient Over Voltages in Power Systems
32.	19PPE532	Restructured Power System
33.	19PPE533	Optimization Techniques in Power Electronics
34.	19PPE534	Energy Management and Auditing

LIST OF OPEN ELECTIVES

SL.NO	COURSE CODE	COURSE TITLE
1.	19PCD601	Industrial Safety
2.	19PCS602	Business analytics
3.	19PCM603	IOT for Smart Application
4.	19PPE604	Bio Energy from Waste
5.	19PSE605	Smart City Technologies