



**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

Criterion 1 – Curricular Aspects

Key Indicator	1.2	Academic Flexibility
Metric	1.2.2	Percentage of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented (Data for the latest completed academic year)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING STRUCTURE OF THE PROGRAM CLEARLY INDICATING COURSES, CREDITS/ELECTIVES

Programmes

1. B.Tech Electrical and Electronics Engineering – Full Time
2. B.Tech Electrical and Electronics Engineering – Part Time
3. M.Tech Power Electronics and Drives – Part Time.

1. B.Tech.(EEE) Full Time

REGULATION 2018

SEMESTER I

Code No.	Course Title	L	T	P	C	TCH
XMA 101	Calculus and Linear Algebra	3	1	0	4	4
XES 102	Environmental Sciences	3	0	0	0	3
XBE 103	Electrical and Electronics Engineering Systems	3	1	1	5	6
XAP 104	Applied Physics for Engineers	3	1	2	6	8
XEG 105	Engineering Graphics	2	0	1	3	4
TOTAL		14	3	4	18	25

SEMESTER II

Code No.	Course Title	L	T	P	C	TCH
XMA 201	Calculus, Ordinary Differential Equations and Complex Variable	3	1	0	4	4
XCP 202	Programming for Problem Solving	3	0	2	5	7
XGS 203	English	2	0	1	3	4
XAC 204	Applied Chemistry for Engineers	3	1	1	5	6
XWP 205	Workshop Practices	1	0	2	3	5
TOTAL		12	2	6	20	26

SEMESTER III

Code No.	Course Title	L	T	P	C	TCH
XEE 301	Electrical Circuit Analysis	3	1	1	5	6
XEE 302	Analog Electronics	3	0	1	4	5
XEE 303	Electrical Machines - I	3	1	1	5	6
XEE 304	Electromagnetic Fields	3	1	0	4	4
XEE 305	Transmission and Distribution	3	0	0	3	3
XEE 306	In-plant Training - I	0	0	0	0	0

TOTAL	15	3	3	21	24
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SEMESTER IV

Code No.	Course Title	L	T	P	C	TCH
XPS 401	Probability and Statistics	3	1	0	4	4
XEE 402	Digital Electronics	3	0	1	4	5
XEE 403	Power Electronics	3	0	1	4	5
XEE 404	Electrical Machines - II	3	1	1	5	6
XUM 405	Entrepreneurship Development	3	0	0	3	3
XEE 406	Signals and Systems	2	1	0	3	3
TOTAL		17	3	3	23	26

SEMESTER V

Code No.	Course Title	L	T	P	C	TCH
XEE 501	Power Systems - I (Apparatus and Modelling)	3	1	1	5	6
XEE 502	Control Systems	3	0	1	4	5
XEE 503	Microprocessors and Microcontrollers	3	0	1	4	5
XEE E1*	Professional Elective - 1	3	0	0	3	3
X** OE*	Open Elective - 1	3	0	0	3	3
XUM 506	Constitution of India	3	0	0	3	3
XEE 507	In-plant Training - II	0	0	0	0	0
XEE M01	Minor Course - I	0	0	0	0	2
TOTAL		18	1	3	22	27

SEMESTER VI

Code No.	Course Title	L	T	P	C	TCH
XUM 601	Economics for Engineers	3	0	0	3	3
XEE 602	Power Systems - II (Operation and Control)	3	1	1	5	6
XEE E2*	Professional Elective - 2	3	0	1	4	5
XEE E3*	Professional Elective - 3	3	0	1	4	5
X** OE*	Open Elective - 2	3	0	0	3	3
XUM 606	Disaster Management	3	0	0	0	3

XEE M02	Minor Course - II	0	0	0	0	2
TOTAL		18	1	3	19	27

SEMESTER VII

Code No.	Course Title	L	T	P	C	TCH
XEE E4*	Professional Elective - 4	3	0	0	3	3
XEE E5*	Professional Elective - 5	3	0	0	3	3
XUM 703	Human Ethics, Values, Rights and Gender Equality	3	0	0	3	3
X** OE*	Open Elective - 3	3	0	0	3	3
X** OE*	Open Elective - 4	3	0	0	3	3
XEE 706	Project Phase - I	0	0	8	4	6
XEE 707	In-plant Training - III	-	-	4	2	-
XEE M03	Minor Course - III	0	0	0	0	2
TOTAL		15	0	12	21	23

SEMESTER VIII

Code No.	Course Title	L	T	P	C	TCH
XUM 801	Cyber Security	0	0	0	P/F	3
XEE E6*	Professional Elective - 6	3	0	0	3	3
X** OE*	Open Elective -5	3	0	0	3	3
XEE 804	Project Phase - II	0	0	12	6	16
TOTAL		6	0	12	12	25

MINOR (ONE CREDIT) COURSES:

Code No.	Course Title	L	T	P	C
OC1	Electrical Safety	1	0	0	1
OC2	Micro-grid	1	0	0	1
OC3	PLC programming	1	0	0	1
OC4	Energy Auditing	1	0	0	1

OC5	Programming with Arduino	1	0	0	1
OC6	Online MOOC Course	1	0	0	1

VALUE ADDED COURSES:

Code No.	Course Title
VAC1	Electrical System Design Using ETAP
VAC2	Electrical System Design Using HMI
VAC3	Auto CAD - Electrical
VAC4	Electrical System Design using PLC & SCADA
VAC5	Electrical System Design Using VFD
VAC6	Electrical System Design Using Internet of Things

LIST OF ELECTIVES

ELECTIVE GROUP –1: (5th Sem)

Code No.	Course Title	L	T	P	C
E11	Protection and Switchgear	3	0	0	3
E12	Electrical Machine Design	3	0	0	3
E13	Electrical Safety, Operations and Regulations	3	0	0	3
E14	Computer Architecture	3	0	0	3

ELECTIVE GROUP – 2: (6th Sem)

Code No.	Course Title	L	T	P	C
E21	Measurements and Instrumentation	3	0	1	4
E22	Electromagnetic Waves	3	0	0	3
E23	Computational Electromagnetics	3	0	0	3
E24	Digital Control Systems	3	0	0	3

ELECTIVE GROUP –3: (6th Sem)

Code No.	Course Title	L	T	P	C
E31	Industrial Automation	3	0	1	4
E32	Digital Signal Processing	3	0	0	3
E33	Electrical Energy Conservation and Auditing	3	0	0	3
E34	Industrial Electrical Systems	3	0	0	3

ELECTIVE GROUP –4: (7th Sem)

Code No.	Course Title	L	T	P	C
E41	High Voltage Engineering	3	0	0	3
E42	Embedded System	3	0	0	3
E43	Power System Restructuring	3	0	0	3
E44	Line Commutated and Active Rectifiers	3	0	0	3

ELECTIVE GROUP –5:(7th Sem)

Code No.	Course Title	L	T	P	C
E51	Electrical Drives	3	0	0	3
E52	Power System Dynamics and Control	3	0	0	3
E53	HVDC Transmission Systems	3	0	0	3
E54	Power Quality and FACTS	3	0	0	3

ELECTIVE GROUP - 6:(8th Sem)

Code No.	Course Title	L	T	P	C
E61	Electrical and Hybrid Vehicles	3	0	0	3
E62	Wind and Solar Systems	3	0	0	3
E63	Power System Protection	3	0	0	3
E64	Advanced Electric Drives	3	0	0	3

2. B.Tech.(EEE) Part Time

CURRICULUM
B.Tech. (EEE) - BACHELOR OF TECHNOLOGY
(THREE AND HALF YEAR - PART TIME)
REGULATION 2018
 (Applicable to the students admitted from the Academic year 2018-2019)

SEMESTER I

Code No.	Course Title	L	T	P	C	TCH
PMA 101	Calculus and Linear Algebra	3	1	0	4	4
PAP 102	Applied Physics for Engineers	3	1	0	4	4
PAC 103	Applied Chemistry for Engineers	3	1	0	4	4
PEE 104	Electrical Circuit Analysis	3	1	1	5	6
		12	4	1	17	18

SEMESTER II

Code No.	Course Title	L	T	P	C	TCH
PMA 201	Calculus, Ordinary Differential Equations and Complex Variable	3	1	0	4	4
PEE 202	Electromagnetic Fields	3	1	0	4	4
PEE 203	Analog Electronics	3	0	0	3	3
PEE 204	Electrical Machines-I	3	0	1	4	5
		12	2	1	15	16

SEMESTER III

Code No.	Course Title	L	T	P	C	TCH
PEE 301	Transmission and Distribution	3	0	0	3	3
PEE 302	Environmental Sciences	3	0	0	3	3
PEE 303	Signals and Systems	2	1	0	3	3
PEE 304	Electrical Machines-II	3	0	1	4	5
		11	1	1	13	14

SEMESTER IV

Code No.	Course Title	L	T	P	C	TCH
PEE 401	Digital Electronics	3	0	0	3	3
PEE E1*	Professional Elective-1	3	0	0	3	3
PEE E2*	Professional Elective-2	3	0	0	3	3
PEE 404	Power Electronics	3	0	1	4	5
		12	0	1	13	14

SEMESTER V

Code No.	Course Title	L	T	P	C	TCH
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PEE501	Power Systems – I (Apparatus and Modeling)	3	0	0	3	3
PEE E3*	Professional Elective-3	3	0	0	3	3
	Industrial Economics and Foreign Trade	3	0	0	3	3
PEE504	Control Systems	3	0	1	4	5
		12	0	1	13	14

SEMESTER VI

Code No.	Course Title	L	T	P	C	TCH
PEE601	Power Systems –II (Operation and Control)	3	0	0	3	3
	E-Waste Management	3	0	0	3	3
	Disaster Management	3	0	0	3	3
PEE 604	Microprocessors and Microcontrollers	3	0	1	4	5
		12	0	1	13	14

SEMESTER VII

Code No.	Course Title	L	T	P	C	TCH
PEE E4*	Professional Elective-4	3	0	0	3	3
PEE E5*	Professional Elective-5	3	0	0	3	3
PEE E6*	Professional Elective-6	3	0	0	3	3
PEE 704	Main Project	0	0	16	12	16
		9	0	16	21	25

ELECTIVE GROUP -1 :(4th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEE E11	Protection and Switchgear	3	0	0	3	3
PEE E12	Electrical Machine Design	3	0	0	3	3
PEE E13	Energy Auditing and Management	3	0	0	3	3
PEE E14	Computer Architecture	3	0	0	3	3

ELECTIVE GROUP - 2 :(4th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEE E21	High Voltage Engineering	3	0	0	3	3
PEEE22	Electromagnetic Waves	3	0	0	3	3
PEEE23	Computational Electromagnetics	3	0	0	3	3
PEEE24	Digital Control Systems	3	0	0	3	3

ELECTIVE GROUP - 3 :(5th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEEE31	Bio Medical Instrumentation	3	0	0	3	3
PEEE32	Digital Signal Processing	3	0	0	3	3
PEE E33	Industrial Electrical Systems	3	0	0	3	3

ELECTIVE GROUP - 4 :(7th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEEE41	Power Plant Engineering	3	0	0	3	3
PEEE42	Embedded System	3	0	0	3	3
PEEE43	Eco Power Generation	3	0	0	3	3

ELECTIVE GROUP - 5 :(7th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEEE51	Electrical Drives	3	0	0	3	3
PEEE52	Power System Dynamics and Control	3	0	0	3	3
PEEE53	Line Commutated and Active Rectifiers	3	0	0	3	3

ELECTIVE GROUP - 6 :(7th Sem)

Code No.	Course Title	L	T	P	C	TCH
PEE E61	HVDC Transmission Systems	3	0	0	3	3

PEE E62	Wind and Solar Energy Systems	3	0	0	3	3
PEE E63	Electrical Energy Conservation and Auditing	3	0	0	3	3

3. M.Tech.(PED) Part Time

CURRICULUM 2018
M.Tech. (PED) - MASTER OF TEECHNOLOGY
(THREE YEAR - PART TIME)
REGULATION 2018

(Applicable to the students admitted from the Academic year 2018-2019)

SEMESTER I

Code No.	Course Title	L	T	P	C	HRS
QPE 101	Power Electronic Converters	3	0	0	3	4
QPE 102	Modeling and Analysis of Electrical Machines	3	0	0	3	4
QPE E1*	Elective – I (Advanced Power Electronic Circuits)	3	0	0	3	4
QPE 104	Electrical Machines Laboratory	0	0	4	2	3
Total		9	0	4	11	15

SEMESTER II

Code No.	Course Title	L	T	P	C	HRS
QPE 201	Electric Drives System	3	0	0	3	4
QPE 202	Research Methodology and IPR	2	0	0	2	3
QPE E2*	Elective – II (Power Semiconductor Devices & Modeling)	3	0	0	3	4

QPE 204	Electrical Drives Laboratory	0	0	4	2	3
Total		8	0	4	10	14

SEMESTER III

Code No.	Course Title	L	T	P	C	HRS
QPE 301	Digital Control of Power Electronic and Drive Systems	3	0	0	3	4
Q** OE*	MOOC-I / Open Elective	3	0	0	3	4
QPE E3*	Elective – III (Switched Mode and Resonant Converters)	3	0	0	3	4
QPE 304	Power Electronics Laboratory	0	0	4	2	3
Total		9	0	4	11	15

SEMESTER IV

Code No.	Course Title	L	T	P	C	HRS
QPE E4*	Elective – IV (Solar and Energy Storage Systems)	3	0	0	3	4
QPE E5*	Elective – V (Computer Aided Design of Electrical Machines)	3	0	0	3	4
Q** OE*	MOOC-II/ Open Elective	3	0	0	3	4
QPE 404	Microcontroller Laboratory	0	0	4	2	3
Total		9	0	4	11	15

SEMESTER V

Code No.	Course Title	L	T	P	C	HRS
QPE 501	Project Work - Phase I	0	0	20	9	20
Total		0	0	20	9	20

SEMESTER VI

Code No.	Course Title	L	T	P	C	HRS
QPE 601	Project Work - Phase II	0	0	32	16	30
Total		0	0	32	16	30

OVER ALL CREDITS = 68

LIST OF PROFESSIONAL ELECTIVES

Code No.	Course Title	L	T	P	C
Elective – I					
E11	Advanced Power Electronic Circuits	3	0	0	3
E12	Optimal and Adaptive Control	3	0	0	3
E13	Power Quality	3	0	0	3
E14	Dynamics of Electrical Machines	3	0	0	3
Elective – II					
E21	Power Semiconductor Devices and Modeling	3	0	0	3
E22	PWM converter and Applications	3	0	0	3
E23	Static VAR Controllers and Harmonic Filtering	3	0	0	3
E24	Wind Energy Conversion Systems	3	0	0	3

Elective – III					
E31	Switched Mode and Resonant Converters	3	0	0	3
E32	Industrial Load Modeling and Control	3	0	0	3
E33	Advanced Digital Signal Processing	3	0	0	3
E34	Smart Grids	3	0	0	3
Elective – IV					
E41	HVDC Transmission	3	0	0	3

E42	FACTS and Custom Power Devices	3	0	0	3
E43	Solar and Energy Storage Systems	3	0	0	3
E44	SCADA Systems and Applications	3	0	0	3
Elective – V					
E51	Advanced Microcontroller based Systems	3	0	0	3
E52	Distributed Generation	3	0	0	3
E53	Computer Aided Design of Electrical Machines	3	0	0	3
E54	Waste to Energy	3	0	0	3