CURRICULUM AND DETAILED SYLLABI

FOR

M.TECH DEGREE PROGRAMME

IN

ELECTRICAL AND ELECTRONICS ENGINEERING

POWER CONTROL AND DRIVES

SEMESTERS I TO IV

2020 SCHEME

(AUTONOMOUS)

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Autonomous Institution Affiliated to APJ Abdul Kalam Technological University)
MAR IVANIOS VIDYANAGAR, NALANCHIRA, THIRUVANANTHAPURAM – 695015, KERALA.
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MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Vision and Mission of the Institution

Vision:

To be an Institution moulding globally competent professionals as epitomes of Noble Values.

Mission:

To transform the Youth as technically competent, ethically sound and socially committed professionals, by providing a vibrant learning ambience for the welfare of humanity.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Vision and Mission of the Department

Vision:

To be a Centre of Excellence in Electrical & Electronics Engineering Education, Research and Application of knowledge to benefit the society at large.

Mission:

To mould quality Electrical Engineers, fostering creativity and innovation to address global issues.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PROGRAMME OUTCOMES (POs)

PROGRAMME SPECIFIC OUTCOMES (PSOs)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

M.Tech. Power Control and Drives

For the students admitted from 2020-21

Scheduling of Courses

i) Knowledge Segments and Credits

Every course of M. Tech Programme is placed in one of the seven categories as listed in Table 1 below. No semester shall have more than six lecture-based courses and two laboratory courses, and/or drawing/seminar/project courses in the curriculum.

Table 1: Credit distribution and the Knowledge Domains

Sl. No.	Category	Category Code	Number of Courses	Total Credits
1	Programme Core Courses	PCC	7	24
2	Laboratory Courses		2	2
3	Programme Elective Courses	PEC	5	15
4	Mandatory Credit Course (Research Methodology)	MCC	1	2
5	Seminar	PWS	2	4
6	Mini Project		1	2
7	Project		2	18
Total Mandatory Credits				**67**

*Note: 67 credits have been the requirement for award of degree in all M.Tech Programmes of the College which was approved by the University.

ii) Semester-wise Credit Distribution

Semester	**I**	**II**	**III**	**IV**	**Total Credits**
Credits for Courses	22	19	14	12	**67**

SEMESTER I								
Slot	**Category Code**	**Course Number**	**KTU Course Number**	**Course Name**	**L**	**T**	**P**	**Credit**
A	PCC	MA0P60B	01MA6021	Advanced Mathematics and Optimisation Techniques	3	0	0	3
B	PCC	EE1P60A	01EE6101	Dynamics of Linear Systems	3	1	0	4
C	PCC	EE1P60B	01EE6301	Modelling of Electrical Machines	3	1	0	4
D	PCC	EE1P60C	01EE6501	Power Converter Circuits	3	0	0	3
E	PCC	EE1P60D	01EE6503	Advanced Signal Processing	3	0	0	3
S	MCC	MC0P60A	01EE6999	Research Methodology	0	2	0	2
U	PWS	EE1P69A	01EE6591	Seminar I	0	0	2	2
T	PCC	EE1P68A	01EE6593	Power Electronics Lab	0	0	2	1
				Total	**15**	**4**	**4**	**22**

SEMESTER II								
Slot	**Category Code**	**Course Number**	**KTU Course Number**	**Course Name**	**L**	**T**	**P**	**Credit**
A	PCC	EE1P60E	01EE6302	Electric Drives	3	1	0	4
B	PCC	EE1P60F	01EE6502	Design Principles of Power Converters	3	0	0	3
C	PEC			Elective I	3	0	0	3
D	PEC			Elective II	3	0	0	3
E	PEC			Elective III	3	0	0	3
W	PWS	EE1P69B	01EE6592	Mini Project	0	0	4	2
T	PCC	EE1P68B	01EE6594	Drives and Simulation Lab	0	0	2	1
				Total	**15**	**1**	**6**	**19**

ELECTIVE I

Slot	Category Code	Course Number	KTU Course Number	Course Name	L	T	P	Credit
C	PEC	EE1P61A	01EE6112	Process Control and Industrial Automation	3	0	0	3
		EE1P61B	01EE6412	New and Renewable Sources of Energy	3	0	0	3
		EE1P61C	01EE6512	Application of Power Electronics in Power Systems	3	0	0	3
		EE1P61D	01EE6514	Embedded Systems and Real Time Applications	3	0	0	3

ELECTIVE II

Slot	Category Code	Course Number	KTU Course Number	Course Name	L	T	P	Credit
D	PEC	EE1P62A	01EE6418	Flexible AC Transmission Systems	3	0	0	3
		EE1P62B	01EE6516	Microcontroller Applications in Power Electronics	3	0	0	3
		EE1P62C	01EE6518	Power Electronics for Renewable Energy Systems	3	0	0	3
		EE1P62D	01EE6522	Digital Simulation of Power Electronic Systems	1	2	0	3

ELECTIVE III

Slot	Category Code	Course Number	KTU Course Number	Course Name	L	T	P	Credit
E	PEC	EE1P63A	01EE6126	Soft Computing Techniques	3	0	0	3
		EE1P63B	01EE7315	Hybrid Electric Vehicles	3	0	0	3
		EE1P63C	01EE6524	Modern Power Converters	3	0	0	3

SEMESTER III								
Slot	**Category Code**	**Course Number**	**KTU Course Number**	**Course Name**	**L**	**T**	**P**	**Credit**
A	PEC	EE1PXXX		Elective IV	3	0	0	3
B	PEC	EE1PXXX		Elective V	3	0	0	3
U	PWS	EE1P79A	01EE7591	Seminar II	0	0	2	2
W	PWS	EE1P79B	01EE7593	Project (Phase – I)	0	0	12	6
				Total	**6**	**0**	**14**	**14**

ELECTIVE IV

Slot	Category Code	Course Number	KTU Course Number	Course Name	L	T	P	Credit
A	PEC	EE1P71A	01EE7113	Advanced Instrumentation	3	0	0	3
		EE1P71B	01EE7511	Digital controllers in Power Electronics	3	0	0	3
		EE1P71C	01EE7411	EHVAC and DC Transmission	3	0	0	3
		EE1P71D	01EE7513	Power System Protection	3	0	0	3

ELECTIVE V

Slot	Category Code	Course Number	KTU Course Number	Course Name	L	T	P	Credit
B	PEC	EE1P72A	01EE7515	Switch Mode Power Converters	3	0	0	3
		EE1P72B	01EE6318	Finite Element Methods for Electrical Machines	3	0	0	3
		EE1P72C	01EE7121	Biomedical Instrumentation	3	0	0	3

SEMESTER IV								
Slot	**Category Code**	**Course Number**	**KTU Course Number**	**Course Name**	**L**	**T**	**P**	**Credit**
W	PWS	EE1P79C	01EE7594	Project Phase – II	0	0	24	12
				Total	**0**	**0**	**24**	**12**