



**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 ELECTRONICS AND COMMUNICATION ENGINEERING

STRUCTURE OF THE PROGRAM CLEARLY INDICATING COURSES, CREDITS/ELECTIVES

Programmes

1. B.Tech Electronics and Communication Engineering – Full Time
2. M.Tech Wireless Communications - FT

B.Tech ECE - Curriculum and Syllabus from I to VIII Semesters**Curriculum and Syllabus****Regulation 2021****SEMESTER I**

S. No	Course Code	Name of the Course	Credits				Hours			
			L	T	P	C	L	T	P	Total
1	XMA101	Calculus and Linear Algebra	3	1	0	4	3	1	0	4
2	XBE102	Electrical and Electronics Engineering Systems	3	1	0	4	3	1	0	4
3	XAP103	Applied Physics for Engineers	3	1	0	4	3	1	0	4
4	XEC104	Fundamentals of computers	3	0	0	3	3	0	0	3
5	XGS105	Speech Communication	0	1	2	3	0	1	4	5
6	XUM106	Constitution of India	0	0	0	0	3	0	0	3
7	XBE107	Electrical and Electronics Engineering Systems Laboratory	0	0	1	1	0	0	2	2
8	XAP108	Applied Physics for Engineers Laboratory	0	0	1	1	0	0	2	2
		Total	12	4	4	20	15	4	8	27

Total Credits - 20 Total Hours- 27**SEMESTER II**

S.No	Course Code	Name of the Course	Credits				Hours			
			L	T	P	C	L	T	P	Total
1	XMA201	Calculus, Ordinary Differential Equations and Complex Variable	3	1	0	4	3	1	0	4
2	XCP202	Programming for Problem Solving	3	0	0	3	3	0	0	3
3	XAC203	Applied Chemistry for Engineers	3	1	0	4	3	1	0	4
4	XGS204	Technical Communication	2	0	0	2	2	0	0	2
5	XWP205	Workshop Practices	1	0	2	3	1	0	4	5
6	XEM206	Engineering Mechanics	3	0	0	3	3	0	0	3
7	XCP207	Programming for Problem Solving Laboratory	0	0	1	1	0	0	2	2
8	XAC208	Applied Chemistry for Engineers Laboratory	0	0	1	1	0	0	2	2
		Total	15	2	4	21	15	2	8	25

Total Credits - 21 Total Hours- 25

SEMESTER III

S.No	Course Code	Course Name	Credits				Hours			
			L	T	P	C	L	T	P	Total
1	XMA301	Transforms and Partial Differential Equations	3	0	0	3	3	0	0	3
2	XEC302	Electronic devices	3	0	0	3	3	0	0	3
3	XEC303	Digital System Design	3	0	0	3	3	0	0	3
4	XEC304	Network Theory	3	1	0	4	3	1	0	4
5	XEC305	Electromagnetic Theory and Transmission Lines	3	1	0	4	3	1	0	4
6	XUM306	Entrepreneurship Development	2	0	0	2	2	0	0	SS - 1 3
7	XUM307	Universal Human Values 2: Understanding Harmony	2	1	0	3	2	1	0	3
8	XEC308	Electronic Devices and Networks Laboratory	0	0	1	1	0	0	2	2
9	XEC309	Digital System Design Laboratory	0	0	1	1	0	0	2	2
10	XEC310	In-plant Training - I	-	-	1	1	-	-	-	-
Total			19	3	3	25	19	3	4	27

Total Credits - 25 Total Hours- 27

SEMESTER IV

S.No.	Description	Courses	Credits				Hours			
			L	T	P	Total	L	T	P	Total
1.	XEC401	Probability Theory and Stochastic Processes	3	0	0	3	3	0	0	3
2.	XEC402	Electronic Circuits	3	1	0	4	3	1	0	4
3.	XEC403	Signals and Systems	3	1	0	4	3	1	0	4
4.	XEC404	Analog Integrated Circuits	3	1	0	4	3	1	0	4
5.	XUM009	Economics for Engineers	3	0	0	3	3	0	0	3
6	XUM003	Disaster Management	0	0	0	0	3	0	0	3
7	XEC407	Electronic Circuits Laboratory	0	0	1	1	0	0	2	2
8	XEC408	Analog Integrated Circuits Laboratory	0	0	1	1	0	0	2	2
9	XEC409	Signals and Systems Laboratory	0	0	1	1	0	0	2	2
Total			15	3	3	21	18	3	6	27

Total Credits - 21 Total Hours- 27

SEMESTER V

S.No.	Description	Courses	Credits				Hours			
			L	T	P	Total	L	T	P	Total
1	XEC501	Microprocessors and Microcontrollers	3	0	0	3	3	0	0	3
2	XEC502	Digital Signal Processing	3	0	0	3	3	0	0	3
3	XEC503	Antennas and Wave Propagation	3	1	0	4	3	1	0	4
4	XEC504	Communication Theory	3	1	0	4	3	1	0	4
5	PEC-I	Professional Elective-1	3	0	0	3	3	0	0	3
6	OE I	Open Elective-1	3	0	0	3	3	0	0	3
7	XEC507	Microprocessors and Microcontrollers Laboratory	0	0	1	1	0	0	2	2
8	XEC508	Digital Signal Processing Laboratory	0	0	1	1	0	0	2	2
9	XEC509	In-plant Training - II	-	-	1	1	-	-	-	-
		Total	18	2	3	23	18	2	4	24

Total Credits – 23 Total Hours- 24

SEMESTER VI

S.No.	Description	Courses	Credits				Hours			
			L	T	P	Total	L	T	P	Total
1	XEC601	Digital Communication	3	0	0	3	3	0	0	3
2	XEC602	Microwave Engineering and Fiber Optic Communication	3	0	0	3	3	0	0	3
3	PEC-II	Professional Elective-2	3	0	0	3	3	0	0	3
4	OE II	Open Elective-2	3	0	0	3	3	0	0	3
5	XGS605	English Language Skills	1	0	2	3	1	0	4	5
6	XUM005	Cyber Security	0	0	0	0	3	0	0	3
7	XEC607	Analog and Digital Communication Laboratory	0	0	1	1	0	0	2	2
8	XEC608	Microwave Engineering and Fiber Optic Communication Laboratory	0	0	1	1	0	0	2	2
		Total	13	0	4	17	16	0	8	24

Total Credits – 17 Total Hours- 24

SEMESTER VII

S. No.	Description	Courses	Credits				Hours			
			L	T	P	Total	L	T	P	Total
1	XEC701	VLSI Design and Embedded Systems	3	0	0	3	3	0	0	3
2	XEC702	Modern Control Systems	3	0	0	3	3	0	0	3
3	PEC-III	Professional Elective-3	3	0	0	3	3	0	0	3
4	OE III	Open Elective-3	3	0	0	3	3	0	0	3
5	XUM008	Environmental Sciences	0	0	0	0	3	0	0	3
6	XEC706	VLSI Design and Embedded Systems Laboratory	0	0	1	1	0	0	2	2
7	XEC707	Modern Control Systems Laboratory	0	0	1	1	0	0	2	2
8	XEC708	Project Work (Phase-I)	0	0	2	2	0	0	4	4
9	XEC709	In-plant Training - III	-	-	2	2	-	-	-	-
		Total	12	0	6	18	15	0	8	23

Total Credits – 18 Total Hours- 23

SEMESTER VIII

S. No.	Description	Courses	Credits				Hours			
			L	T	P	Total	L	T	P	Total
1	PEC-IV	Professional Elective-4	3	0	0	3	3	0	0	3
3	OE IV	Open Elective -4	3	0	0	3	3	0	0	3
4	OE V	Open Elective-5	3	0	0	3	3	0	0	3
5	XEC804	Project Work (Phase-II)	0	0	9	9	0	0	18	18
		Total	9	0	9	18	9	0	18	27

Total Credits – 18 Total Hours- 27

* Professional Elective

** Open Elective

*# Non-credit Course

Grant Total Credits: 163

In Plant Training of 30 days in the vacation periods is mandatory to complete the graduation.

LIST OF ELECTIVES

Program Elective PE	CODE NO.	COURSE TITLE	L	T	P	C
PE1 505*	XEC505A	Computer Organization and Architecture	3	0	0	3
	XEC505B	Introduction to Artificial Intelligence	3	0	0	3
	XEC505C	Radio Frequency Electronics	3	0	0	3
PE2 603*	XEC603A	Introduction to Data Structure	3	0	0	3
	XEC603B	Applied Machine Learning	3	0	0	3
	XEC603C	Wireless Communications	3	0	0	3
PE3 703*	XEC703A	Introduction to Operating Systems	3	0	0	3
	XEC703B	Artificial Intelligence for Robotics	3	0	0	3
	XEC703C	Wireless Networks	3	0	0	3
PE4 801*	XEC801A	Fundamentals of Kotlin Programming	3	0	0	3
	XEC801B	Internet of Things	3	0	0	3
	XEC801C	Fundamentals of 5G Technology	3	0	0	3

LIST OF OPEN ELECTIVES

Open Elective OE	CODE NO.	COURSE TITLE	L	T	P	C
OE1	XECO1	Entertainment Electronics and Management	3	0	0	3

**M.TECH. – WIRELESS COMMUNICATIONS- REGULATIONS 2022-
(TWO YEAR FULLTIME) – CURRICULUM
SEMESTER I**

	CODE NO.	COURSE TITLE	L	T	P	C	H
PCC	YWC101	Fundamentals of wireless communication	3	0	0	3	3
PCC	YWC102	Advanced Digital Communication	3	1	0	4	4
PCC	YWC103	Advanced Technologies in Wireless Networks	3	0	0	3	3
PEC	YWC104*	Elective I	3	0	0	3	3
PEC	YWC105*	Elective-II	3	0	0	3	3
PCC-L	YWC106	Digital Communication Lab	0	0	2	2	4
AICTE Mandatory Course	YRM107	Research Methodology and IPR	2	0	0	2	2
AICTE - Audit	YEGOE1	English for Research Paper Writing	2	0	0	0	2
PCC-L	YWC 109	Wireless Networks Lab	0	0	2	2	4

Total Hours:23

Total Credits: 22

SEMESTER II

	CODE NO.	COURSE TITLE	L	T	P	C	H
PCC	YWC201	MultiCarrierCommunication	3	0	0	3	3
PCC	YWC202	MicrowavePassive and Active Systems	3	0	0	3	3
PCC	YWC203	AdvancedRadiationSystems	3	0	0	3	3
PEC	YWC204*	Elective-III	3	0	0	3	3
PEC	YWC205*	Elective IV	3	0	0	3	3
PCC-L	YWC206	Radio Frequency Systems lab	0	0	2	2	4
Proj	YWC207	MiniProject	0	0	2	2	4
AICTE - Audit	YPSOE1	Constitution of India	2	0	0	0	2

Total Hours: 21

Total Credits: 19

SEMESTER III

	CODE NO.	COURSE TITLE	L	T	P	C	H
Proj	YWC301	Dissertation Phase – I	0	0	10	10	20
PEC	YWC302	Elective -V	0	0	0	3	3
OEC	Open Elective	1. Business Analytics 2. Industrial Safety 3. Operations Research 4. Cost Management of Engineering Projects	3	0	0	3	3

Total Hours: 26

Total Credits: 16

SEMESTER IV

	CODE NO.	COURSE TITLE	L	T	P	C	H
Proj	YWC401	Dissertation Phase – II	0	0	16	16	32

Total Hours: 32

Total Credits: 16

LIST OF ELECTIVES

Sl.No	CodeNo	CourseTitle	L	T	P	C
ELECTIVE-I						
1	YWC104A	Modern Radar communication	3	0	0	3
2	YWC104B	Mobile Satellite Communication	3	0	0	3
3	YWC104C	Advanced Digital Signal Processing	3	0	0	3
4	YWC104D	Free space optics	3	0	0	3
ELECTIVE-II						
1	YWC105A	Mathematics for Communication Systems	3	0	0	3
2	YWC105B	RF MEMS	3	0	0	3
3	YWC105C	Antenna Systems for Wireless Applications	3	0	0	3
4	YWC105D	Detection and Estimation Theory	3	0	0	3
ELECTIVE-III						
1	YWC204A	Wireless Network Security	3	0	0	3
2	YWC204B	MIMO Communication	3	0	0	3
3	YWC 204C	High Performance Wireless Networks	3	0	0	3
4	YWC204D	Internet of Things	3	0	0	3
ELECTIVE-IV						
1	YWC205A	Soft Computing	3	0	0	3
2	YWC205B	Millimeter Wave Wireless Communications	3	0	0	3
3	YWC 205C	Software Defined Radio	3	0	0	3
4	YWC205D	Fundamentals of 5G Mobile and Wireless Technology	3	0	0	3
ELECTIVE-V						
1	YWC302A	Quality of Service in Wireless Communication	3	0	0	3
2	YWC302B	Telecom Network Planning and Management	3	0	0	3
3	YWC 302C	Regulation and Policy in the Telecommunications Industry	3	0	0	3