

**B.E. ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION 2022
CHOICE BASED CREDIT SYSTEM
I – VIII SEMESTER CURRICULUM AND SYLLABI**

SEMESTER I							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22SB101	Engineering Biology	2/0/0	2	2	60/40	BSC
2	22MA104	Calculus and Transforms I	3/1/0	4	4	60/40	BSC
3	22EC101	Circuit Theory	3/0/0	3	3	60/40	ESC
THEORY CUM PRACTICAL							
4	22EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
5	22PH101	Physics for Electronics	3/0/2	5	4	50/50	BSC
6	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	ESC
MANDATORY COURSE							
7	22MC101	Mandatory Course I (Induction Programme)	3 weeks		0	0/100	MC
TOTAL			16/1/6	23	20	700	

SEMESTER II							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
2	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
3	22MA304	Calculus and Transforms II	3/1/0	4	4	60/40	BSC
4	22EC201	Electron Devices	3/0/0	3	3	60/40	ESC
THEORY CUM PRACTICAL							
5	22CH101	Engineering Chemistry	3/0/2	5	4	50/50	BSC
6	22AD201	Java Programming	3/0/2	5	4	50/50	ESC
7	22IT201	Database Management Systems	3/0/2	5	4	50/50	ESC
LABORATORY COURSE							
8	22EC202	Circuits and Devices Laboratory	0/0/3	3	1.5	40/60	ESC
MANDATORY COURSE							
9	22MC102	Mandatory Course II (Environmental Sciences)	2/0/0	2	0	0/100	MC
TOTAL			21/1/9	31	24.5	900	

SEMESTER III							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22TA201	Tamils and Technology	1/0/0	1	1	60/40	HSMC
2	22EC301	Electronic Circuits	3/0/0	3	3	60/40	PCC
3	22EC302	Digital Electronics	3/0/0	3	3	60/40	PCC
4	22EC303	Electromagnetics	3/0/0	3	3	60/40	PCC
5	22MA307	Probability Theory and Random Processes	3/1/0	4	4	60/40	BSC
6	22CS302	Advanced Java Programming	3/0/0	3	3	60/40	ESC
THEORY CUM PRACTICAL							
7	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	ESC
LABORATORY COURSE							
8	22EC304	Digital Electronics Laboratory	0/0/2	2	1	40/60	PCC
9	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	40/60	ESC
MANDATORY COURSE							
10	22MCXXX	Mandatory Course III	2/0/0	2	0	0/100	MC
TOTAL			21/1/7	29	23.5	1000	

SEMESTER IV							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22MG701	Principles of Management	3/0/0	3	3	60/40	HSMC
2	22EC401	Signals and Systems	3/0/0	3	3	60/40	PCC
3	22EC402	Analog and Digital Communication	3/0/0	3	3	60/40	PCC
4	22EC403	Analog Integrated Circuits	3/0/0	3	3	60/40	PCC
5	22XXXX	Open Elective-1	3/0/0	4	3	60/40	OEC
THEORY CUM PRACTICAL							
6	22IT101	Application Development Practices	3/0/2	5	4	50/50	ESC
LABORATORY COURSE							
7	22EC404	Circuits Laboratory	0/0/2	2	1	40/60	PCC
8	22EC405	Analog and Digital Communication Laboratory	0/0/2	2	1	40/60	PCC
TOTAL			18/0/6	25	21	800	

SEMESTER V							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22EC501	Microcontrollers and Interfacing	3/0/0	3	3	60/40	PCC
2	22EC502	Data and Wireless Networks	3/0/0	3	3	60/40	PCC
3	22EC503	Digital Signal Processing	4/0/0	4	4	60/40	PCC
4	22EC9XX	Professional Elective-1	3/0/0	3	3	60/40	PEC
5	22EE511	Control Engineering	4/0/0	4	4	60/40	ESC
6	22XXXX	Open Elective-2	3/0/0	4	3	60/40	EEC
LABORATORY COURSE							
7	22EC504	Digital Signal Processing Laboratory	0/0/2	2	1	40/60	PCC
8	22EC505	Microcontrollers Laboratory	0/0/2	2	1	40/60	PCC
TOTAL			20/0/4	25	22	800	

SEMESTER VI							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22EC9XX	Professional Elective-2	3/0/0	3	3	60/40	PEC
2	22EC601	Embedded Systems and its Applications	3/0/0	3	3	60/40	PCC
3	22EC602	Antenna and Wave Propagation	4/0/0	4	4	60/40	PCC
4	22EC603	VLSI Design	3/0/0	3	3	60/40	PCC
5	22XXXX	Emerging Elective-1	3/0/0	4	3	60/40	EEC
6	22XXXX	Open Elective-3	3/0/0	4	3	60/40	OEC
LABORATORY COURSE							
7	22EC604	Embedded Systems Laboratory	0/0/2	2	1	40/60	PCC
8	22EC605	VLSI Design Laboratory	0/0/2	2	1	40/60	PCC
TOTAL			19/0/4	25	21	800	

SEMESTER VII							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
THEORY							
1	22EC701	Microwave and Optical Communication	3/0/0	3	3	60/40	PCC
2	22EC702	Fundamentals of Network Security	3/0/0	3	3	60/40	PCC
3	22EC9XX	Professional Elective-3	3/0/0	3	3	60/40	PEC
4	22EC9XX	Professional Elective-4	3/0/0	3	3	60/40	PEC
5	22EC9XX	Professional Elective-5	3/0/0	3	3	60/40	PEC
6	22EC9XX	Professional Elective-5	3/0/0	3	3	60/40	PEC
LABORATORY COURSE							
7	22EC703	Microwave and Optical Communication Laboratory	0/0/2	2	1	40/60	PCC
EMPLOYABILITY ENHANCEMENT SKILLS							
8	22EES01	Employability Enhancement Skills (Summer Internship/Summer Training – 4 weeks)			2	0/100	
PROJECT							
9	22EC704	Mini Project			2	0/100	PROJ
TOTAL			18/0/2	20	23	900	

SEMESTER VIII							
SL. No.	Course Code	Course	L/T/P	Contact hrs./wk.	C	Ext./Int.	Cat.
PROJECT							
1.	22EC801	Project Work	0/0/24	24	12	40/60	PROJ
TOTAL			0/0/24	24	12	500	

SCHEME OF CREDIT DISTRIBUTION - SUMMARY

SL. No.	Stream	Credits/Semester								AICTE	C	%
		I	II	III	IV	V	VI	VII	VIII			
1	Humanities (HSMC)	3	4	1	3					12*	11	6.66
2	Basic Sciences (BSC)	10	8	4						25*	22	13.33
3	Engineering Sciences (ESC)	7	12.5	8.5	4	4				24*	36	21.21
4	Professional Core (PCC)			10	11	12	12	7		48*	52	30.90
5	Professional Electives (PEC)					3	3	12		18*	18	10.90
6	Open Electives/ Emerging Electives (OEC/EEC)				3	3	6			18*	12	7.27
7	Project Work (PROJ)							2	12	15*	14	8.48
8	Mandatory Course (MC)									Non-Credit	Non-Credit	
9	Employability Enhancement Skills							2		-	2	1.21
Total		20	24.5	23.5	21	22	21	23	12	160*	167	100

HUMANITIES & SOCIAL SCIENCES INCLUDING MANAGEMENT (9 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	22EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	22GE201	Universal Human Values	3/0/0	3	3	HSMC
3	22TA101	Heritage of Tamils	1/0/0	1	1	HSMC
4	22TA201	Tamils and Technology	1/0/0	1	1	HSMC
5	22MG701	Principles of Management	3/0/0	3	3	HSMC

BASIC SCIENCE COURSES (22 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1	22SB101	Engineering Biology	2/0/0	2	2	BSC
2	22MA104	Calculus and Transforms I	3/1/0	4	4	BSC
3	22PH101	Physics for Electronics	3/0/2	5	4	BSC
4	22CH101	Engineering Chemistry	3/0/2	5	4	BSC
5	22MA304	Calculus and Transforms II	3/1/0	4	4	BSC
6	22M307	Probability Theory and Random Processes	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (36 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	22EC101	Circuit Theory	3/0/0	3	3	ESC
2.	22CS101	Problem Solving using C++	3/0/2	5	4	ESC

3.	22EC201	Electron Devices	3/0/0	3	3	ESC
4.	22AD201	Java Programming	3/0/2	5	4	ESC
5.	22IT201	Database Management Systems	3/0/2	5	4	ESC
6.	22EC202	Circuits and Devices Laboratory	0/0/2	2	1.5	ESC
7.	22CS201	Data Structures and Algorithms	3/0/2	5	4	ESC
8.	22CS302	Advanced Java Programming	3/0/0	3	3	ESC
9.	22CS303	Advanced Java Programming Laboratory	0/0/3	3	1.5	ESC
10.	22IT101	Application Development Practices	3/0/2	5	4	ESC
	22EE511	Control Engineering	4/0/0	4	4	ESC

PROFESSIONAL CORE COURSES (52 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	22EC301	Electronic Circuits	3/0/0	3	3	PCC
2.	22EC302	Digital Electronics	3/0/0	3	3	PCC
3.	22EC303	Electromagnetics	3/0/0	3	3	PCC
4.	22EC304	Digital Electronics Laboratory	0/0/2	2	1	PCC
5.	22EC401	Signals and Systems	3/0/0	3	3	PCC
6.	22EC402	Analog and Digital Communication	3/0/0	3	3	PCC
7.	22EC403	Analog Integrated Circuits	3/0/0	3	3	PCC
8.	22EC404	Circuits Laboratory	0/0/2	2	1	PCC
9.	22EC405	Analog and Digital Communication Laboratory	0/0/2	2	1	PCC
10.	22EC501	Microcontrollers and Interfacing	3/0/0	3	3	PCC
11.	22EC502	Data and Wireless Networks	3/0/0	3	3	PCC
12.	22EC503	Digital Signal Processing	4/0/0	4	4	PCC
13.	22EC504	Digital Signal Processing Laboratory	0/0/2	2	1	PCC
14.	22EC505	Microcontrollers Laboratory	0/0/2	2	1	PCC
15.	22EC601	Embedded Systems and its Applications	3/0/0	3	3	PCC
16.	22EC602	Antenna and Wave Propagation	4/0/0	4	4	PCC
17.	22EC603	VLSI Design	3/0/0	3	3	PCC
18.	22EC604	Embedded Systems Laboratory	0/0/2	2	1	PCC
19.	22EC605	VLSI Design Laboratory	0/0/2	2	1	PCC
20.	22EC701	Microwave and Optical Communication	3/0/0	3	3	PCC
21.	22EC702	Fundamentals of Network Security	3/0/0	3	3	PCC
22.	22EC703	Microwave and Optical Communication Laboratory	0/0/2	2	1	PCC

PROFESSIONAL ELECTIVE COURSES (18 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
Elective Stream I: Embedded Systems & VLSI Design						
1	22EC901	High Speed Digital Design	3/0/0	3	3	PEC
2	22EC902	Hardware Description Languages	3/0/0	3	3	PEC
3	22EC903	ASIC Design	3/0/0	3	3	PEC
4	22EC904	System on Chip Design	3/0/0	3	3	PEC

5	22EC905	Electronic Design Automation Tools	3/0/0	3	3	PEC
6	22EC906	Embedded Processors	3/0/0	3	3	PEC
7	22EC907	ARM Processor Architecture and Programming	3/0/0	3	3	PEC
8	22EC908	Internet of Medical Things	3/0/0	3	3	PEC
9	22EC909	Internet of Things and its Applications	3/0/0	3	3	PEC
Elective Stream II: Communication Engineering						
1	22EC911	Advanced Wireless Technologies	3/0/0	3	3	PEC
2	22EC912	Satellite Communication and GPS	3/0/0	3	3	PEC
3	22EC913	Long Term Evolution Technology	3/0/0	3	3	PEC
4	22EC914	MEMS	3/0/0	3	3	PEC
5	22EC915	Smart Antennas	3/0/0	3	3	PEC
6	22EC916	RF System Design	3/0/0	3	3	PEC
7	22EC917	Cognitive Radio Communication	3/0/0	3	3	PEC
8	22EC918	MIMO and Multi Carrier Systems	3/0/0	3	3	PEC
9	22EC919	Millimeter Wave Communication Systems	3/0/0	3	3	PEC
Elective Stream III – Networks, Image and Video Processing						
1	22EC921	Wireless Sensor Networks	3/0/0	3	3	PEC
2	22EC922	Soft Computing	3/0/0	3	3	PEC
3	22EC923	Digital Image and Video Processing	3/0/0	3	3	PEC
4	22EC924	Convergent Networks	3/0/0	3	3	PEC
5	22EC925	Information Security	3/0/0	3	3	PEC
6	22EC926	Pattern Recognition Techniques	3/0/0	3	3	PEC
7	22EC927	High Speed Networks	3/0/0	3	3	PEC
8	22EC928	Advanced Wireless Networks	3/0/0	3	3	PEC
9	22EC929	Neural Networks and Deep Learning	3/0/0	3	3	PEC

OPEN ELECTIVE COURSES (6 Credits)
(Offered to Other Branches)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	22EC001	Principles of Cyber Physical Systems	3/0/0	3	3	OEC
2.	22EC002	Introduction to Raspberry Pi and Arduino	3/0/0	3	3	OEC
3.	22EC003	IT Workshop SCILAB/MATLAB	3/0/0	3	3	OEC
4.	22EC004	Brain Computer Interface and its Applications	3/0/0	3	3	OEC
5.	22EC005	Wireless wearable Sensors	3/0/0	3	3	OEC
6.	22EC006	Organizational Behavior	3/0/0	3	3	OEC

EMERGING ELECTIVE COURSES (6 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1.	22EC007	Robotics	3/0/0	3	3	EEC
2.	22EC008	Augmented and Virtual Reality	3/0/0	3	3	EEC
3.	22EC009	Computer Vision	3/0/0	3	3	EEC

4.	22EC010	Bio – inspired Human Machine Interface	3/0/0	3	3	EEC
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PROJECT WORK (14 Credits)

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	C	Cat.
1	22EC704	Mini Project	-	-	2	PROJ
2	22EC801	Project Work	0/0/24	24	12	PROJ

MANDATORY COURSES

S.No	CourseCode	Course Title	L/T/P	Contact Hrs/Wk	C	Cat.
1.	22MC101	Induction Program	3 weeks		0	MC
2.	22MC102	Environmental Sciences	2/0/0	2	0	MC
3.	22MC103	Soft Skills	2/0/0	2	0	MC
4.	22MC104	Management Organizational Behavior	2/0/0	2	0	MC
5.	22MC105	General Aptitude	2/0/0	2	0	MC
6.	22MC106	Life Skills and Ethics	2/0/0	2	0	MC
7.	22MC107	Stress Management	2/0/0	2	0	MC
8.	22MC108	Constitution of India	2/0/0	2	0	MC
9.	22MC109	Essence of Indian Traditional Knowledge	2/0/0	2	0	MC

VALUE ADDED COURSES OFFERED BY ECE

SL. No.	Course Code	Course Title	Credits
1.	22VA401	Antenna Design using ANSYS HFSS Tool Flow	1
2.	22VA402	Mastering in MATLAB - Math and Optimization	1
3.	22VA403	The Agriculture Industry in Industry 4.0	1
4.	22VA404	Connecting Technologies With Real World	1
5.	22VA405	Arduino Programming model	1
6.	22VA406	PCB Design for Electronic Circuits	1
7.	22VA407	Energy Harvesting and Security Issues in Cognitive Networks	1

VALUE ADDED COURSES OFFERED BY OTHER DEPARTMENTS

SL. No.	Course Code	Course Title	Credits
1.	22VA161	Soft Skills for Corporate Workplace	1

SEMESTER WISE CREDIT DISTRIBUTION:-

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	20	24.5	23.5	21	22	21	23	12	165

Total Credits: 165**L:** Lecture **T:** Tutorial **P:** Practical **C:** Credit **Cat.:** Category**HSMC** : Humanities and Social
Sciences including Management**BSC** : Basic Science Courses**ESC** : Engineering Science Courses**PCC** : Professional Core Courses**PEC** : Professional Elective Courses**OEC** : Open Elective Courses**EEC** : Emerging Elective Courses**PROJ** : Project Work**MC** : Mandatory Course