

Department: Electronics and Communication Engineering

Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2023-24) Batch:2022-2026

Third Semester B.E (ECE)

Sl. No	Course Type	Course Code	Course Title	Teaching Dept	Teaching Hours /Week					Credits	Examination		
					L	T	P	J	Hours/Week		CIA Marks	SEA Marks	Total Marks
1	MAT	22MAC131	Fourier Series, Transforms, Numerical and Statistical Techniques	MAT	2	2	-	-	4	3	50	50	100
2	PCC	22ECE132	Network Analysis	ECE	2	2	-	-	4	3	50	50	100
3	PCI	22ECE133	Data structures using C	ECE	2	-	2	-	4	3	50	50	100
4	PCI	22ECE134	Analog Electronics Circuits	ECE	3	-	2	-	5	4	50	50	100
5	PCI	22ECE135	Digital System Design using Verilog	ECE	3	-	2	-	5	4	50	50	100
6	PBL	22ECE136	Python Programming on RaspberryPi	ECE	-	-	2	2	4	2	50	50	100
7	UHV	22CIP137	Constitution of India and Professional Ethics	HSS	1	-	-	-	1	1	100	-	100
8	AEC	22SFT138	Soft Skill -1	HSS	-	2	-	-	2	1	100	-	100
9	IPL	22ECE139	Innovative Project Lab -1	ECE	-	-	-	2	2	1	100	-	100
TOTAL CONTACT HOURS					13	6	8	4	31	22	600	300	900

**L-Theory lecture, T – Tutorial, P – Practical, J – Project NCMC- Non Credit Mandatory Course
CIA: Continuous Internal Assessment, SEA: Semester End Assessment**

Audit Course: All lateral entry students have to register and complete course on Additional Mathematics- II

Sl. No	Course Type	Course Code	Course Title	Teaching Dept	Teaching Hours /Week					Credits	Examination		
					L	T	P	J	Hours/Week		CIA Marks	SEA Marks	Total Marks
10	MDP	22MATDIP1310	Bridge Mathematics - II		2	-	-	-	2	NCMC	100	-	100

Credit definition: 1 hour Lecture (L) per week = 1 Credit 2 hours Project Component (J) per week = 1 Credit

2 hours Practical /Drawing (P) per week = 1 Credit

(a) 4 Credit courses are to be designed for 50 hours Teaching – Learning process. (b) 3 Credit courses are to be designed for 40 hours Teaching – Learning process.

(c) 2 Credit courses are to be designed for 25 hours Teaching – Learning process (d) 1 Credit course are to be designed for 12-15 hours Teaching – Learning process

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Fourth Semester B.E (ECE)

Sl. No	Course Type	Course Code	Course Title	Teaching Dept	Teaching Hours /Week						Examination		
					L	T	P	J	Hours/Week	Credits	CIA Marks	SEA Marks	Total Marks
1	MAT	22MAC141	Complex Analysis, Probability and Random Process	MAT	2	2	-	-	4	3	50	50	100
2	PCC	22ECE142	Digital Signal Processing	ECE	3	2	-	-	5	4	50	50	100
3	PCI	22ECE143	Control Systems	ECE	1	2	2	-	3	3	50	50	100
4	PCI	22ECE144	ARM Microcontroller and its Applications	ECE	3	-	2	-	5	4	50	50	100
5	PCI	22ECE145	Analog and Digital Communication	ECE	3	-	2	-	5	4	50	50	100
6	PBL	22ECE146	Signal Processing Applications using MATLAB	ECE	-	-	2	2	4	2	50	50	100
7	AEC	22SFT147	Soft Skill -2	HSS	-	2	-	-	2	1	100	-	100
8	INT	22ECE148	Internship - I / Innovative Project Lab - 2	ECE	-	-	2	2	4	2	100	-	100
TOTAL CONTACT HOURS					12	8	10	4	32	23	500	300	800

Audit Course: All lateral entry students have to register and complete course on Additional Mathematics- II

Sl. No	Course Type	Course Code	Course Title	Teaching Dept	Teaching Hours /Week						Examination		
					L	T	P	J	Hours/Week	Credits	CIA Marks	SEA Marks	Total Marks
9	MDP	22MATDIP141	Bridge Mathematics - II		2	-	-	-	2	NCCM	100	-	100

Summer Internship -I to be carried out during the vacation between II & III Semester OR III & IV Semester

Summer Internship - I (22ECE149): All the students registered to II year of BE shall have to undergo mandatory internship of 4 weeks during II semester or III semester vacation. Semester End Assessment will be conducted in IV semester and the prescribed credit will be included. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent examination after satisfying the internship requirements. (The faculty coordinator or mentor has to monitor the students' internship progress and interact to guide them for the successful completion of the internship.)

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Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2024-25) Batch:2022-2026

Fifth Semester B.E. (ECE)

Sl. No	Course Type	Course Code	Course Title	Teaching Department	Teaching Hours /Week					Credits	Examination		
					L	T	P	J	Hours/Week		CIA Marks	SEA Marks	Total Marks
1	PCC	22ECE151	Digital Image Processing	ECE	3	-	-	-	3	3	50	50	100
2	PCC	22ECE152	Electromagnetic Waves and Transmission Lines	ECE	2	2	-	-	4	3	50	50	100
3	PCI	22ECE153	Computer Networks and Security	ECE	3	-	2	-	5	4	50	50	100
4	PCI	22ECE154	Embedded Systems and RTOS	ECE	3	-	2	-	5	4	50	50	100
5	PBL	22ECE155	Artificial Intelligence and Machine Learning applications	ECE	-	-	2	2	4	2	50	50	100
6	POE	22ECE156X	Open Elective Course - I	ECE	3	-	-	-	3	3	50	50	100
7	AEC	22ECE157	Employability skills (Technical) -1	ECE	-	2	-	-	2	1	100	-	100
8	INT	22ECE158	Internship - II	ECE	-	-	-	-	0	1	100	-	100
TOTAL CONTACT HOURS					14	4	6	2	26	21	500	300	800

Open Electives offered from ECE :

1. Smart Sensor Technologies	2. Mobile Communication and Processor
3. Satellite Communication	4. Embedded System using Raspberry-Pi

Summer Internship - II to be carried out during the vacation between IV and V Semester

Summer Internship - II (22ECE158): All the students admitted shall have to undergo a mandatory summer internship of 04 weeks. Summer Internship shall include Inter / Intra Institutional activities. A Viva-voce examination shall be conducted during IV semesters and the prescribed credit shall be included in IV semesters. The internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequent examination after satisfying the internship requirements. (The faculty coordinator or mentor has to monitor the students' internship progress and interact to guide them for the successful completion of the internship.)

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Sixth Semester B.E. (ECE)

Sl. No	Course Type	Course Code	Course Title	Teaching Dept	Teaching Hours /Week					Credit	Examination		
					L	T	P	J	Hours/Week		CIA Marks	SEA Marks	Total Marks
1	PCC	22ECE161	Project Management and Finance	ECE	2	–	–	–	2	2	50	50	100
2	PCI	22ECE162	Microwave and Antennas	ECE	3	–	2	–	5	4	50	50	100
3	PCI	22ECE163	VLSI Design	ECE	3	–	2	–	5	4	50	50	100
4	PBL	22ECE164	Java Programming and its Applications	ECE	0	–	2	2	4	2	50	50	100
5	PEC	22ECE165X	Professional Elective Course - 1	ECE/MBA	3	–	–	–	3	3	50	50	100
6	PEC	22ECE166X	Professional Elective Course -2 (MOOC/NPTEL Course)	Online Platform/ MBA	3	–	–	–	3	3	50	50	100
7	OEC	22ECE167X	Open Elective Course - II	ECE	3	–	–	–	3	3	50	50	100
8	AEC	22ECE168	Employability skills (Technical) -2	ECE	–	–	2	–	2	1	100	–	100
TOTAL CONTACT HOURS					17	–	8	2	27	22	450	350	800

Open Electives offered by ECE Department

1. 22ECE1671 Nanotechnology	3. 22ECE1673 Robotics and Automation
2. 22ECE1672 Wearable Devices	4. 22ECE1674 Automotive Electronics

Professional Electives -1				Professional Electives-2 (Tentative, may change based on the availability at the time of offering the course)			
1	22ECE1651	Information Theory and Coding		1	22ECE1661	Satellite Communication	
2	22ECE1652	Nanoelectronics		2	22ECE1662	VLSI Physical Design	
3	22ECE1653	Wearable Technology		3	22ECE1663	Operating Systems	
4	22ECE1654	Artificial Neural Network		4	22ECE1664	Applied Accelerated Artificial Intelligence	
5	22ECE1655	Computer Architecture and Organization		5	22ECE1665	Data Base Management System	

B N M Institute of Technology

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Seventh Semester B.E. (ECE)

SL No	Course Type	Course Code	Course Title	Teaching Department	Teaching Hours /Week					Credits	Examination		
					L	T	P	J	Hours/Week		CIA Marks	SEA Marks	Total Marks
1	PCC	22ECE171	Wireless Communication Technologies	ECE	3	-	-	-	3	3	50	50	100
2	PEC	22ECE172X	Professional Elective Course -3	ECE	3	-	-	-	3	3	50	50	100
3	PEC	22ECE173X	Professional Elective Course -4 (MOOC/NPTEL Course)	Online Platform	3	-	-	-	3	3	50	50	100
4	AEC	22ECE174	Research Methodology & IPR	ECE	2	-	-	-	2	2	50	50	100
5	PPW	22ECP175	Project Work: Phase-1	ECE	-	-	-	8	8	4	100	-	100
TOTAL CONTACT HOURS					11	0	-	8	19	15	300	200	500

Professional Electives -3				Professional Electives-2 (MOOC - Subjected to offering by NPTEL)		
1	22ECE1721	Fiber Optics Communication		1	22ECE1731	Cyber Security and Privacy
2	22ECE1722	SoC Design		2	22ECE1732	C based VLSI Design
3	22ECE1723	Automotive Electronics		3	22ECE1733	Real Time Systems
4	22ECE1724	Natural Language Processing		4	22ECE1734	Deep Learning for Visual Computing
5	22ECE1725	Fundamentals of Data Science		5	22ECE1735	Introduction to Industry 4.0 and Industrial Internet of Things

24/1/25

Project work:Phase-1 (22ECP175) Based on the abilities of the students and recommendations of the mentor, a single discipline or a multidisciplinary project can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6.

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Eight Semester B.E. (ECE)

Sl No	Course Type	Course Code	Course Title	Teaching Department	Teaching Hours /Week					Credits	Examination		
					L	T	P	J	Hours / Week		CIA Marks	SEA Marks	Total Marks
1	PEC	22ECE181x	Professional Elective Course-5 (MOOC/NPTEL Course)	Online Platform / MBA	3	-	-	-	3	3	50	50	100
2	INT	22ECE182	Internship - III	ECE	-	-	-	8	8	8	50	50	100
3	PPW	22ECP183	Project Work: Phase-2	ECE	-	-	-	20	20	6	50	50	100
TOTAL CONTACT HOURS					3	-	-	28	31	17	150	150	300

Professional Electives -5 (MOOC - Subjected to offering by NPTEL)

1	22ECE1811	Introduction to Biomedical Image Processing
2	22ECE1812	Digital VLSI Testing
3	22ECE1813	Embedding Sensors and Motors Specialization
4	22ECE1814	Computer Vision
5	22ECE1815	Cloud Computing

NOTE:

Internship -III to be carried out from VI semester vacation till the end of VIII Semester - Duration 3 to 6 Months Or Global Certification

Internship -III (22ECE182): All the students admitted to III year of BE shall have to undergo mandatory internship of 6 months during the vacation of VI semester and during VII semester. End Assessment will be conducted in VIII semester and the prescribed credit shall be included. Internship shall be considered as a head of passing and shall be considered for the award of degree.

Project work: Phase-2 (22ECP183) Based on the abilities of the students and recommendations of the mentor, a single discipline or a multidisciplinary project can be assigned to an individual student or to a group having not more than 4 students. In extraordinary cases, like the funded projects requiring students from different disciplines, the project student strength can be 5 or 6