



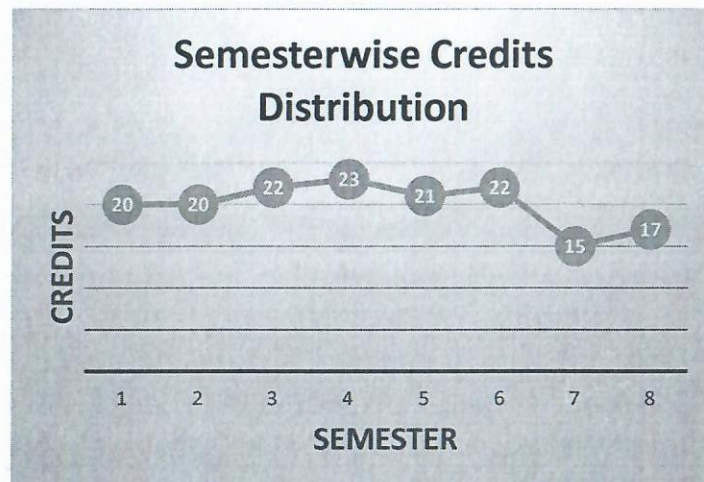
B N M Institute of Technology

An Autonomous Institution under VTU. Approved by AICTE

Department: Electronics & Communication Engineering

Scheme of Teaching and Examination-Autonomous Credit Distributions

Semester	Credits
1	20
2	20
3	22
4	23
5	21
6	22
7	15
8	17
Total Credits	160



Abbreviations
MAT - Mathematics
PCC - Professional Core Course
PCI - Professional Core Integrated
PBL - Project Based Learning
PCP - Professional Course with Project
PCL - Professional Comprehensive Learning
PLP - Professional Lab & Project
HSS - Humanity and Social Science
AEC - Ability Enhancement course

AICTE Activity points to be earned by students admitted to BE day college programme

Over and above the academic grades, every day college regular student admitted to the 4 year Degree programme and every student entering 4 years degree programme through lateral entry, shall earn 100 and 75 activity points respectively for the award of degree through AICTE activity programme. The activities can be spread over the years, anytime during the semester weekends and holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hour's requirement should be fulfilled. Activity points have no effect on SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, Eighth semester Grade Card shall be issued only after earning the required activity Points. Students shall be admitted for the award of degree only after the release of the Eighth semester Grade Card.

Head of the Department
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Yashappa H.

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Department: Electronics and Communication Engineering

Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2024-25) Batch:2024-2028

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	24MAE131	Fourier Series, Transforms, Numerical and Statistical Techniques	MAT	2	2	-	-	4	3	50	50	100
2	PCC	24ECE132	Network Analysis	ECE	2	2	-	-	4	3	50	50	100
3	PCI	24ECE133	Data structures using C	ECE	2	-	2	-	4	3	50	50	100
4	PCI	24ECE134	Analog Electronics Circuits	ECE	3	-	2	-	5	4	50	50	100
5	PCI	24ECE135	Digital System Design using Verilog	ECE	3	-	2	-	5	4	50	50	100
6	PBL	24ECE136	Advanced Python Programming on RaspberryPi	ECE	-	-	2	2	4	2	50	50	100
7	UHV	24CIP137	Constitution of India and Professional Ethics	HSS	1	-	-	-	1	1	100	-	100
8	AEC	24SFT138	Soft Skill -1	HSS	-	2	-	-	2	1	100	-	100
9	IPL	24ECE139	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

CIA: Continuous Internal Assessment, SEA: Semester End Assessment

Credit Definition: 1 hour Lecture (L) per week = 1 Credit; 2 hours Tutorial (T) per week = 1 Credit; 2 hours Practical/Drawing (P) per week = 1 Credit; 2 hours Project Component (J) per week = 1 Credit

Course Design Structure : (a) Four credit courses are to be designed for 50 hours Teaching–Learning process. (b) Three credit courses are to be designed for 40 hours Teaching–Learning process. (c) Two credit courses are to be designed for 25 hours Teaching–Learning process. (d) One credit course is to be designed for 12–15 hours Teaching–Learning process.

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Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2024-25) Batch:2024-2028

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	24MAE141	Complex Analysis, Probability and Random Process	MAT	2	2	-	-	4	3	50	50	100
2	PCC	24ECE142	Digital Signal Processing	ECE	3	2	-	-	5	4	50	50	100
3	PCI	24ECE143	Control Systems	ECE	1	2	2	-	5	3	50	50	100
4	PCI	24ECE144	ARM Microcontroller and its Applications	ECE	3	-	2	-	5	4	50	50	100
5	PCI	24ECE145	Analog and Digital Communication	ECE	3	-	2	-	5	4	50	50	100
6	PBL	24ECE146	Signal Processing Applications using MATLAB	ECE	-	-	2	2	4	2	50	50	100
7	INT	24ECE147	Internship - I / Innovative Project Lab - 2	ECE	-	-	-	2	2	2	100	-	100
8	AEC	24SFT148	Soft Skill -2	HSS	-	2	-	-	2	1	100	-	100
TOTAL CONTACT HOURS					12	8	8	4	32	23	500	300	800

Internship-I to be carried out during the vacation between II and III Semester

Internship-I: All the students registered to II year of BE shall have to undergo mandatory internal internship of 3 weeks during the intervening vacation of II and III semester. Internship shall include Inter / Intra Institutional activities, skill enhancement courses. 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. 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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Department: Electronics and Communication Engineering**Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2026-27) Batch:2024-2028****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	24ECE151	Digital Image Processing	ECE	3	-	-	-	3	3	50	50	100
2	PCC	24ECE152	Electromagnetic Waves and Transmission Lines	ECE	2	2	-	-	4	3	50	50	100
3	PCI	24ECE153	Computer Networks and Security	ECE	3	-	2	-	5	4	50	50	100
4	PCL	24ECE154	Real Time Operating System	ECE	2	-	4	-	6	4	50	50	100
5	PBL	24ECE155	Artificial Intelligence and Machine Learning applications	ECE	-	-	2	2	4	2	50	50	100
6	OEC	24ECE156X	Open Elective Course - I	ECE	3	-	-	-	3	3	50	50	100
7	AEC	24ECE157	Employability skills (Technical) -1	ECE	-	2	-	-	2	1	100	-	100
8	INT	24ECE158	Internship - II	ECE	-	-	-	-	0	1	100	-	100
TOTAL CONTACT HOURS					13	4	8	2	27	21	500	300	800

Open Electives offered from ECE :**1. 24ECE1561 - Smart Sensor Technologies****2. 24ECE1562 - Mobile Communication and Processor****3. 24ECE1563 - Real Time Operating System****4. 24ECE1564 - Embedded System using Raspberry-Pi****Internship - II to be carried out during the vacation between IV and V Semester**

Internship - II: All the students admitted shall have to undergo a mandatory internship of 04 weeks. Internship shall include Inter / Intra Institutional activities. A Viva-voce examination shall be conducted during V semester and the prescribed credit shall be included. 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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Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2026-27) Batch:2024-2028

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	24ECE161	Engineering Project Management and Finance	ECE	2	–	–	–	2	2	50	50	100
2	PCI	24ECE162	Microwave and Antennas	ECE	3		2	–	5	4	50	50	100
3	PCI	24ECE163	VLSI Design	ECE	3	–	2	–	5	4	50	50	100
4	PBL	24ECE164	Java Programming and its Applications	ECE	–	–	2	2	4	2	50	50	100
5	PEC	24ECE165X	Professional Elective Course - 1	ECE/MBA	3	–	–	–	3	3	50	50	100
6	PEC	24ECE166X	Professional Elective Course -2 (MOOC/NPTEL Course)	Online Platform/ MBA	3	–	–	–	3	3	50	50	100
7	OEC	24ECE167X	Open Elective Course - II	ECE	3	–	–	–	3	3	50	50	100
8	AEC	24ECE168	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. 24ECE1671 Nanotechnology
2. 24ECE1672 Wearable Devices

3. 24ECE1673 Robotics and Automation
4. 24ECE1674 Automotive Electronics

Professional Electives -1

1	24ECE1651	Information Theory and Coding
2	24ECE1652	Nanoelectronics
3	24ECE1653	Wearable Technology
4	24ECE1654	Artificial Neural Network
5	24ECE1655	Computer Architecture and Organization

Professional Electives-2 (MOOC - Subjected to offering by NPTEL)

1	24ECE1661	Satellite Communication
2	24ECE1662	VLSI Physical Design
3	24ECE1663	Operating Systems
4	24ECE1664	Applied Accelerated Artificial Intelligence
5	24ECE1665	Data Base Management System

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Department: Electronics and Communication Engineering

Scheme of Teaching and Examination-Autonomous - (Effective from Academic year 2026-27) Batch:2024-2028

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	24ECE171	Wireless Communication Technologies	ECE	3	-	-	-	3	3	50	50	100
2	PEC	24ECE172X	Professional Elective Course -3	ECE	3	-	-	-	3	3	50	50	100
3	PEC	24ECE173X	Professional Elective Course -4 (MOOC/NPTEL Course)	Online Platform	3	-	-	-	3	3	50	50	100
4	AEC	24ECE174	Research Methodology & IPR	ECE	2	-	-	-	2	2	50	50	100
5	PPW	24ECP175	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	24ECE1721	Fiber Optics Communication		1	24ECE1731	Cryptography
2	24ECE1722	SoC Design		2	24ECE1732	VLSI Design Verification and Test
3	24ECE1723	Automotive Electronics		3	24ECE1733	Real Time Systems
4	24ECE1724	Natural Language Processing		4	24ECE1734	Deep Learning for Visual Computing
5	24ECE1725	Fundamentals of Data Science		5	24ECE1735	Industry 4.0 and Industrial IoT

Project work:Phase-1 (24ECP175) 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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Eighth 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	24ECE181x	Professional Elective Course-5 (MOOC/NPTEL Course)	Online Platform / MBA	3	-	-	-	3	3	50	50	100
2	INT	24ECE182	Internship - III	ECE	-	-	-	16	16	8	50	50	100
3	PPW	24ECP183	Project Work: Phase-2	ECE	-	-	-	12	12	6	50	50	100
TOTAL CONTACT HOURS					3	-	-	28	31	17	150	150	300

Professional Electives -5

1	24ECE1811	Introduction to Biomedical Image Processing
2	24ECE1812	C-Based VLSI Design
3	24ECE1813	Embedding Sensors and Motors Specialization
4	24ECE1814	Computer Vision
5	24ECE1815	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 (24ECE182): 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 (24ECP183) 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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