

NUTAN MAHARASHTRA VIDYA PRASARAK MANDAL'S
**NUTAN MAHARASHTRA INSTITUTE OF ENGINEERING
AND TECHNOLOGY**

AN AUTONOMOUS INSTITUTE | UNDER ADMINISTRATIVE SUPPORT OF PCET



**Curriculum Structure and Syllabus
of
Fourth Year B.Tech Electronics and
Computer Engineering
(2025 Pattern)**



VISION OF THE INSTITUTE

To be a notable institution for providing quality technical education and ensuring ethical, moral and holistic development of students.

MISSION OF THE INSTITUTE

To nurture engineering graduates with state of the art competence, professionalism and problem solving skills to serve needs of industry as well as society.

VISION OF ELECTRONICS AND COMPUTER ENGINEERING

To create globally recognized Electronics and Computer Engineering graduates through industry-driven education, innovation, research, and entrepreneurial skills.

MISSION OF ELECTRONICS AND COMPUTER ENGINEERING

- To promote industry-driven learning, hands-on training, and emerging technologies to develop industry-ready professionals.
 - To foster innovation, research culture, and problem-solving skills for technological advancement.
 - To encourage entrepreneurship and leadership while developing socially responsible engineers capable of addressing industry and societal challenges.
-

INDEX

Sl. No.	Content	Page No.
1	Course Wise Credit Distribution	
2	Semester Wise Course Distribution	
3	Semester Wise Credit Distribution	
4	Curriculum Structure – B.Tech. Semester VII	
5	List of Courses – Program Electives and Open Electives	
6	Curriculum Structure – B.Tech. Semester VIII	
7	List of Courses – Program Electives and Open Electives	
8	Course Syllabus Semester-VII	
9	Course Syllabus Semester-VIII	

COURSE-WISE CREDIT DISTRIBUTION

Sl. No.	Type of Course	No. of Courses	Total Credits	
			No.	%
1	Basic Science Course (BSC)	8	14	8.14
2	Engineering Core Course (ECC)	10	15	8.72
3	Programme Core Course (PCC)	28	54	31.40
4	Programme Elective Course (PEC)	9	20	11.63
5	Multidisciplinary Minor (MDM)	7	13	7.56
6	Open Elective Course (OEC)	3	8	4.65
7	Vocational and Skill Enhancement Course (VSEC)	4	8	4.65
8	Ability Enhancement Course (AEC)	2	4	2.33
9	Entrepreneurship / Management Course(EMC)	2	4	2.33
10	Value Education Course (VEC)	2	4	2.33
11	Experiential Learning Courses	8	22	12.79
12	Indian Knowledge System	1	2	1.16
13	Co-curricular Courses	2	4	2.33
TOTAL		86	172	100

SEMESTER-WISE COURSE DISTRIBUTION

Course Distribution: Semester Wise										
Sl. No.	Type Of Course	No. of Courses / Semester								Total
		1	2	3	4	5	6	7	8	
1	Basic Science Course (BSC)	4	4	-	-	-	-	-	-	8
2	Engineering Science Course (ESC)	6	4	-	-	-	-	-	-	10
3	Programme Core Course (PCC)	-	2	5	5	5	5	4	2	28
4	Programme Elective Course (PEC)	-	2	-	-	2	3	2	2	11
5	Multidisciplinary Minor (MDM)	-	-	1	1	2	1	-	2	7
6	Open Elective Course (OEC)	-	-	1	1	1	-	-	-	3
7	Vocational and Skill Enhancement Course (VSEC)	1	1	1	1	-	-	-	-	4
8	Ability Enhancement Course (AEC)	1		-	1	-	-	-	-	3
9	Entrepreneurship / Management Course(EMC)	-	-	1	1	-	-	-	-	2
10	Value Education Course (VEC)	-	-	1	1	-	-	-	-	2
11	Experiential Learning Courses	-	-	-	1	1	1	1	1	5
12	Indian Knowledge System	-	1	-	-	-	-	-	-	1
13	Co-curricular Courses	1	1	-	-	-	-	-	-	2
Total		13	16	10	12	11	10	07	07	86

SEMESTER-WISE CREDIT DISTRIBUTION

Course Distribution: Semester Wise										
1 Lecture hour = 1 Credit, 2 Lab Hours = 1 Credit, 1 Tutorial Hour = 1 Credit										
Sl. No.	Type of Course	No. of Courses / Semester								Total
		1	2	3	4	5	6	7	8	
1	Basic Science Course (BSC)	7	7	-	-	-	-	-	-	14
2	Engineering Science Course (ESC)	9	6	-	-	-	-	-	-	15
3	Programme Core Course (PCC)	-	3	10	10	10	8	8	4	53
4	Programme Elective Course (PEC)	-	-	-	-	4	8	4	4	20
5	Multidisciplinary Minor (MDM)	-	-	2	2	4	2	-	4	14
6	Open Elective Course (OEC)	-	-	4	2	2	-	-	-	8
7	Vocational and Skill Enhancement Course (VSEC)	2	2	2	2	-	2	-	-	10
8	Ability Enhancement Course (AEC)	2	-	-	2	-	-	-	-	4
9	Entrepreneurship / Management Course(EMC)	-	-	2	2	-	-	-	-	4
10	Value Education Course (VEC)	-	-	2	-	-	-	-	-	2
11	Experiential Learning Courses	-	-	-	2	2	2	8	8	22
12	Indian Knowledge System	-	2	-	-	-	-	-	-	2
13	Co-curricular Courses	2	2	-	-	-	-	-	-	4
Total		22	22	22	22	22	22	20	20	172

CURRICULUM STRUCTURE
Fourth Year B.Tech
Computer Science and Engineering (Artificial Intelligence)
Semester – VII

Level 6.0																	
Second Year B. Tech Electronics and Computer Engineering																	
Semester VII																	
Sl. No.	Course Code	Course Type	Course Name	Credit Scheme			Teaching Scheme (Hours/Week)			Examination Scheme and Marks							
				TH	TUT	PR	L	T	P	CCE		ESE	PR	OR	TW	TOTAL	
										UT	FA	SA					
1	ECE25PCC - 401	Programme Core Course	System on Chip (SoC)	2			2				25	25	50			100	
2	ECE25PCC - 402	Programme Core Course	System on Chip (SoC) Laboratory			2			4					25		25	50
3	ECE25PCC - 403	Programme Core Course	Edge AI Systems	2			2				25	25	50			100	
4	ECE25PCC - 404	Programme Core Course	Edge AI Systems Laboratory			2			4					25		25	50
5	-	Programme Elective Course	Programme Elective Course -IV	3			3				25	25	50			100	
6	-	Programme Elective Course	Programme Elective Course- IV Laboratory			1			2						25	25	50
7	ECE25ELC - 407	Experiential Learning/Internship/OJT	Internship			6			12						100	100	200
8	ECE25ELC - 408		Project Stage I			2			4						50	50	100
TOTAL				7		13	7		26		75	75	150	50	175	225	750
				20			33										

CCE- Comprehensive Continuous Evaluation, **ESE-** End Semester Evaluation, **TW-**Term Work, **OR-** Oral, **PR-**Practical, **L-**Lecture, **P-**Practical, **T-**Tutorial, **FA-**Formative Assessment, **SA** – Summative Assessment

Basket: List of Programme Elective Course-IV

Course Code	Course Name	
ECE25PEC-405A	Blockchain Technology	Choose Any One
ECE25PEC-405B	Natural Language Processing	
ECE25PEC-405C	Computer Vision	

CURRICULUM STRUCTURE
Fourth Year B.Tech
Electronics and Computer Engineering
Semester – VIII

Level 6.0																		
Fourth Year B. Tech Electronics and Computer Engineering																		
Semester VIII																		
Sl. No.	Course Code	Course Type	Course Name	Credit Scheme			Teaching Scheme (Hours/Week)			Examination Scheme and Marks								
				TH	TUT	PR	L	T	P	CCE		ESE		PR	OR	TW	TOTAL	
										UT	FA	SA						
1	ECE25PCC - 451	Programme Core Course	Semiconductor Device Modeling	2			2				25	25	50				100	
2	ECE25PCC - 452	Programme Core Course	Semiconductor Device Modeling Laboratory			2			4					25		25	50	
3	-	Programme Elective Course	Programme Elective Course -V	3			3				25	25	50				100	
4	-	Programme Elective Course	Programme Elective Course- V Laboratory			1			2					25		25	50	
5	ECE25MD M-455	Multidisciplinary Course	Energy Management Systems and SCADA	2			2				25	25	50				100	
6	ECE25MD M-456	Multidisciplinary Course	Energy Management Systems and SCADA Laboratory			2			4						25	25	50	
7	ECE25ELC - 457	Experiential Learning Course /Internship /OJT	Internship			4			8						100	50	150	
8	ECE25ELC - 458		Research Methodology - II			2			4								50	50
9	ECE25ELC - 459		Project Stage- II			2			4							50	50	100
TOTAL				7		13	7		26		75	75	150	50	175	225	750	
				20			33											

CCE- Comprehensive Continuous Evaluation, **ESE-** End Semester Evaluation, **TW-**Term Work, **OR-** Oral, **PR-**Practical, **L-**Lecture, **P-**Practical, **T-**Tutorial, **FA-**Formative Assessment, **SA** – Summative Assessment

Basket: List of Programme Elective Course-V

Course Code	Course Name	
ECE25PEC-453A	Gen AI and Agentic AI	Choose Any One
ECE25PEC-453B	Electric Vehicles (EV) Technology	
ECE25PEC-453C	MEMS and Microsystems	