

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  
Third 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**

<b>Sl. No.</b>	<b>Content</b>	<b>Page No.</b>
1	Course Wise Credit Distribution	
2	Semester Wise Course Distribution	
3	Semester Wise Credit Distribution	
4	Curriculum Structure – T.Y. B.Tech. Semester V	
5	List of Courses – Program Electives and Open Electives	
6	Curriculum Structure – T.Y. B.Tech. Semester VI	
7	List of Courses – Program Electives and Open Electives	
8	Course Syllabus Semester-V	
9	Course Syllabus Semester-VI	

## **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
<b>TOTAL</b>		<b>86</b>	<b>172</b>	<b>100</b>

## SEMESTER-WISE COURSE DISTRIBUTION

Course Distribution: Semester Wise										
Sr. 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	-	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
<b>Total</b>		<b>13</b>	<b>16</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>07</b>	<b>07</b>	<b>86</b>

## 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
<b>Total</b>		<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>20</b>	<b>20</b>	<b>172</b>

**CURRICULUM STRUCTURE**  
**Third Year B.Tech**  
**Electronics and Computer Engineering**  
**Semester – V**

<b>Level 5.5</b>																	
<b>Third Year B. Tech Electronics and Computer Engineering</b>																	
<b>Semester V</b>																	
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					
				25	25	50											
1	ECE25PCC-301	Programme Core Course	Network Architecture and Protocols	2			2				25	25	50				100
2	ECE25PCC-302	Programme Core Course	Analog CMOS Circuits	2			2				25	25	50				100
3	ECE25PCC-303	Programme Core Course	Analog CMOS Circuits Laboratory			2			4					50		25	75
4	ECE25PCC-304	Programme Core Course	Database Management Systems and Applications	2			2				25	25	50				100
5	ECE25PCC-305	Programme Core Course	Database Management Systems and Applications Laboratory			2			4					25		25	50
6	-	Programme Elective Course	Programme Elective Course-I	3			3				25	25	50				100
7	-	Programme Elective Course	Programme Elective Course-I Laboratory			1			2						50		50
8	ECE25MD M-308	Multi-disciplinary Minor	Industrial IoT	3			3				25	25	50				100
9	ECE25MD M-309	Multi-disciplinary Minor	Industrial IoT Laboratory			1			2							25	25
10	-	Open Elective Course	Open Elective course-II		1	1		1	2							25	25
11	IL25ELC-311	Experiential Learning Course (Research Methodology)	Research Methodology-I			2			4							25	25
<b>TOTAL</b>				12	1	9	12	1	18		125	125	250	75	50	125	750
				22			31										

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-I**

<b>Course Code</b>	<b>Course Name</b>	
ECE25PEC-306A	Cryptography	Choose Any One
ECE25PEC-306B	Machine Learning	
ECE25PEC-306C	Computer Graphics	

**Basket: List of Open Elective Course-II**

<b>Course Code</b>	<b>Course Name</b>	
CE25OEC-310	Fundamentals of Fintec	Choose Any One
ME25OEC-310	Supply Chain Management	
ETC25OEC-310	Industrial Management and supervisory management	

**CURRICULUM STRUCTURE**  
**Third Year B.Tech**  
**Electronics and Computer Engineering**  
**Semester – VI**

Level 5.5																	
Third Year B. Tech Electronics and Computer Engineering																	
Semester VI																	
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					
									25	25	50						
1	ECE25PCC-351	Programme Core Course	Digital CMOS Circuits Design	2			2				25	25	50			100	
2	ECE25PCC-352	Programme Core Course	Digital CMOS Circuits Design Laboratory			1			2					25		25	50
3	ECE25PCC-353	Programme Core Course	Industrial Data Analytics	2			2				25	25	50				100
4	ECE25PCC-354	Programme Core Course	Industrial Data Analytics Laboratory			1			2					25		25	50
5	ECE25PCC-355	Programme Core Course	Industrial Electronics	2			2				25	25	50				100
6	-	Programme Elective Course	Programme Elective Course-II	3			3				25	25	50				100
7	-	Programme Elective Course	Programme Elective Course-II Laboratory			2			4						50		50
8	-	Programme Elective Course	Programme Elective Course-III	3			3				25	25	50				100
9	ECE25MD M-359	Multi-disciplinary Minor	Embedded Systems		1	1		1	2							25	25
10	-	Vocational and Skill Enhancement Course	Vocational and Skill Enhancement Course-II			2			4							25	25
11	ECE25ELC-361	Experiential Learning Course	Internship			2			4						25	25	50
<b>TOTAL</b>				12	1	9	12	1	18		125	125	250	50	75	125	750
				22			31										

**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 - II**

Course Code	Course Name	Choose Any One
ECE25PEC-356A	Cyber security	
ECE25PEC-356B	Deep Learning	
ECE25PEC-356C	Computational Intelligence	

**Basket: List of Programme Elective Course - III**

Course Code	Course Name	Choose Any One
ECE25PEC-358A	Ethical and Responsible AI	
ECE25PEC-358B	Automotive Electronics	
ECE25PEC-358C	Sensors and Instrumentation Electronics	

**Basket: List of Vocational and Skill Enhancement Course-II**

Course Code	Course Name	Choose Any One
ECE25PEC-360A	Machine Learning Operations (MLOs)	
ECE25PEC-360B	Digital Design with Verilog	
ECE25PEC-360C	DevOps Engineering and Automation	