

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. Artificial Intelligence  
& Data Science (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 ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

To be a pioneer in Artificial Intelligence and Data Science education and research, empowering students to become innovators, entrepreneurs, and socially responsible leaders who create intelligent solutions for a sustainable and inclusive future.

## MISSION OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

- To deliver quality education in Artificial Intelligence and Data Science with strong theoretical and practical foundations.
- To promote research, innovation, and patents in emerging technologies for sustainable solutions.
- To strengthen industry collaboration through internships, projects, and skill-based training.
- To instill ethical values and social responsibility, applying AI for the benefit of society.

## **INDEX**

<b>Sr. No.</b>	<b>Content</b>	<b>Page No.</b>
1.	Course Wise Credit Distribution	1
2.	Semester Wise Course Distribution	2
3.	Semester Wise Credit Distribution	3
4.	Curriculum Structure – B.Tech. Semester VII	4
5.	List of Courses – Program Electives and Open Electives	5
6.	Curriculum Structure – B.Tech. Semester VIII	6
7.	List of Courses – Program Electives and Open Electives	7

## COURSE-WISE CREDIT DISTRIBUTION

Sr. 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

<b>COURSE DISTRIBUTION: SEMESTER WISE</b>										
<b>SR NO.</b>	<b>TYPE OF COURSE</b>	<b>NO. OF COURSES / SEMESTER</b>								<b>Total</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	
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										
SR 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**  
**Fourth Year B. Tech. Artificial Intelligence and Data Science**  
**Semester – VII**

Level 6.0																			
Fourth Year B. Tech Artificial Intelligence and Data Science																			
Semester VII																			
Sr. No.	Course Code	Course Type	Course Name	Credits			Teaching Scheme (Hours/Week)			Examination Scheme and Marks									
				TH	TUT	PR	L	T	P	CCE		ESE	UT	FA	SA	PR	OR	TW	TOTAL
										25	25								
1	AIDS25PC C-401	Programme Core Course	Natural Language Processing	2			2			25	25	50					100		
2	AIDS25PC C-402	Programme Core Course	Natural Language Processing Lab			2			4					25		25	50		
3	AIDS25PC C-403	Programme Core Course	Generative AI	2			2			25	25	50					100		
4	AIDS25PC C-404	Programme Core Course	Generative AI Lab			2			4					25		25	50		
5	AIDS25PE C-405	Programme Elective Course	Programme Elective Course -IV	3			3			25	25	50					100		
6	AIDS25PE C-406	Programme Elective Course	Programme Elective Course- IV Laboratory			1			2					25	25		50		
7	AIDS25EL C-407	Experiential Learning/Internship/OJT	Internship			6			12						100	100	200		
8	AIDS25EL C-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, **TH**- Theory, **L**-Lecture, **T/TUT**-Tutorial, **UT**- Unit Test, **FA**-Formative Assessment, **SA** – Summative Assessment

**\*Note:** Courses like Open Elective, Vocational & Skill Enhancement, Value Education Courses has to be selected from Basket.

**Basket: List of Courses – Programme Elective Course-IV**

Course Code	Course Name	
AIDS25PEC-405A	Block chain Technology	Choose Any One
AIDS25PEC-405B	Predictive Healthcare Analytics	
AIDS25PEC-405C	Mobile & Micro Robotics	

**CURRICULUM STRUCTURE**  
**Fourth Year B. Tech. Artificial Intelligence & Data Science**  
**Semester – VIII**

<b>Level 6.0</b>																				
<b>Fourth Year B. Tech Artificial Intelligence &amp; Data Science</b>																				
<b>Semester VIII</b>																				
Sr. No.	Course Code	Course Type	Course Name	Credits			Teaching Scheme (Hours/Week)				Examination Scheme and Marks									
				TH	TUT	PR	L	T	P	CCE		ESE	PR	OR	TW	TOTAL				
										UT		SA								
										25										
1	AIDS25PC C-451	Programme Core Course	Computational Intelligence	2			2			25	25	50					100			
2	AIDS25PC C-452	Programme Core Course	Lab Practice -II (Computational Intelligence & Prompt Engineering & Text Generation)			2			4				25		25		50			
3	AIDS25PE C-453	Programme Elective Course	Programme Elective Course -V	3			3			25	25	50					100			
4	AIDS25PE C-454	Programme Elective Course	Programme Elective Course –V Laboratory			1			2				25		25		50			
5	AIDS25MD M-455	Multidisciplinary Course	AI in Robotics & Automation	2			2			25	25	50					100			
6	AIDS25MD M-456	Multidisciplinary Course	AI in Robotics & Automation Laboratory			2			4					25	25		50			
7	AIDS25EL C-457	Experiential Learning Course /Internship /OJT	Internship			4			8					100	50		150			
8	AIDS25EL C-458		Research Methodology - II			2			4						50		50			
9	AIDS25EL C-459		Project Stage- II			2			4					50	50		100			
<b>TOTAL</b>				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, **TH**- Theory, **L**-Lecture, **T/TUT**-Tutorial, **UT**- Unit Test, **FA**-Formative Assessment, **SA** – Summative Assessment

**\*Note:** Courses like Open Elective, Vocational & Skill Enhancement, Value Education Courses has to be selected from Basket.

### **Basket: List of Courses – Programme Elective Course-V**

<b>Course Code</b>	<b>Course Name</b>	
AIDS25PEC-453A	Cyber Security & Data Forensics	Choose Any One
AIDS25PEC-453B	Bioinformatics	
AIDS25PEC-453C	Intelligent System Robotics(RIoT)	