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 .Computer Science and Engineering (Artificial Intelligence) (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 COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE)

Excellence in the domain of Artificial Intelligence towards serving the greater cause of society and globally recognized for contributing professional engineers with a commitment to readiness of industry-oriented skill through potential research.

MISSION OF COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE)

- To develop skill-based education and ethical professionals for students that will enhance expertise in the field of AI through industry-institute interaction and research.
- To apply new optimized advanced methods in problem solutions for various challenges in society.
- To contribute towards innovation through interdisciplinary and analytical skills.

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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. Computer Science and Engineering (Artificial Intelligence)																		
Semester VII																		
Sl. No.	**Course Code**	**Course Type**	**Course Name**	**Credit Scheme**			**Teaching Scheme (Hours/Week)**			**Examination Scheme and Marks**								
										CCE		**ESE**						
				TH	**TUT**	**PR**	**L**	**T**	**P**	**UT**	**FA**	**SA**	**PR**	**OR**	**TW**	**TOTAL**		
										25	**25**	**50**						
1	CAI25PCC-401	Programme Core Course	Natural Language Processing	2			2			25	25	50				100		
2	CAI25PCC-402	Programme Core Course	Natural Language Processing Laboratory			2			4				25		25	50		
3	CAI25PCC-403	Programme Core Course	Big Data Systems and Frameworks	2			2			25	25	50				100		
4	CAI25PCC-404	Programme Core Course	Big Data Systems and Frameworks Laboratory			2			4				25		25	50		
5	CAI25PEC-405	Programme Elective Course	Programme Elective Course -IV	3			3			25	25	50				100		
6	CAI25PEC-406	Programme Elective Course	Programme Elective Course- IV Laboratory			1			2					25	25	50		
7	CAI25ELC-407	Experiential Learning/Internship/OJT	Internship			6			12					100	100	200		
8	CAI25ELC-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	
CAI25PEC-405A	Cyber Laws, Ethics, and Digital Forensics	Choose Any One
CAI25PEC-405B	DevOps and Machine Learning in Cloud Environments	
CAI25PEC-405C	Financial Data Analytics	

CURRICULUM STRUCTURE

Fourth Year B.Tech.

Computer Science and Engineering (Artificial Intelligence)

Semester – VIII

Level 6.0																	
Fourth Year B. Tech. Computer Science and Engineering (Artificial Intelligence)																	
Semester VIII																	
Sl. No.	**Course Code**	**Course Type**	**Course Name**	**Credit Scheme**			**Teaching Scheme (Hours/Week)**			**Examination Scheme and Marks**							
										CCE		**ESE**					
				TH	**TUT**	**PR**	**L**	**T**	**P**	**UT**	**FA**	**SA**	**PR**	**OR**	**TW**	**TOTAL**	
										25	**25**	**50**					
1	CAI25PCC - 451	Programme Core Course	Generative AI and Prompt Engineering	2			2			25	25	50				100	
2	CAI25PCC-452	Programme Core Course	Generative AI and Prompt Engineering Laboratory			2			4				25		25	50	
3	CAI25PEC-453	Programme Elective Course	Programme Elective Course -V	3			3			25	25	50				100	
4	CAI25PEC-454	Programme Elective Course	Programme Elective Course- V Laboratory			1			2				25		25	50	
5	CAI25MDM-455	Multidisciplinary Course	Industrial IoT	2			2			25	25	50				100	
6	CAI25MDM-456	Multidisciplinary Course	Industrial IoT Laboratory			2			4					25	25	50	
7	CAI25ELC-457	Experiential Learning Course /Internship /OJT	Internship			4			8					100	50	150	
8	IL25ELC-458		Research Methodology - II			2			4						50	50	
9	CAI25ELC-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	
CAI25PEC-453A	Predictive Healthcare Analytics & Disease Modelling	Choose Any One
CAI25PEC-453B	AR and VR Applications	
CAI25PEC-453C	Advanced Databases	