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. 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	-	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

Third Year B.Tech.

Computer Science and Engineering (Artificial Intelligence)

Semester – V

Level 5.5																	
Third Year B. Tech. Computer Science and Engineering (Artificial Intelligence)																	
Semester V																	
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-301	Programme Core Course	Theory of Computation	2			2			25	25	50				100	
2	CAI25PCC-302	Programme Core Course	Machine Learning	2			2			25	25	50				100	
3	CAI25PCC-303	Programme Core Course	Machine Learning Laboratory			2			4				50		25	75	
4	CAI25PCC-304	Programme Core Course	Data Science	2			2			25	25	50				100	
5	CAI25PCC-305	Programme Core Course	Data Science Laboratory			2			4				25		25	50	
6	CAI25PEC-306	Programme Elective Course	Programme Elective Course-I	3			3			25	25	50				100	
7	CAI25PEC-307	Programme Elective Course	Programme Elective Course-I Laboratory			1			2					50		50	
8	CAI25MDM-308	Multi-disciplinary Minor	Advanced Internet of Things System Design	3			3			25	25	50				100	
9	CAI25MDM-309	Multi-disciplinary Minor	Advanced Internet of Things System Design 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	
TOTAL				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

Course Code	Course Name	
CAI25PEC-306A	Foundations of Cybersecurity	Choose Any One
CAI25PEC-306B	Cloud Computing	
CAI25PEC-306C	Fundamentals of Modern Transaction Systems	

Basket: List of Open Elective Course-II

Course Code	Course Name	
CE25OEC-310	Fundamentals of FinTech	Choose Any One
ME25OEC-310	Supply Chain Management	
ETC25OEC-310	Industrial Organization and Management	

CURRICULUM STRUCTURE

Third Year B.Tech.

Computer Science and Engineering (Artificial Intelligence)

Semester – VI

Level 5.5																	
Third Year B. Tech. Computer Science and Engineering (Artificial Intelligence)																	
Semester VI																	
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	CAIE25PCC-351	Programme Core Course	Deep Learning	2			2			25	25	50				100	
2	CAI25PCC-352	Programme Core Course	Deep Learning Laboratory			1			2				25		25	50	
3	CAI25PCC-353	Programme Core Course	Data Modeling and Visualization	2			2			25	25	50				100	
4	CAI25PCC-354	Programme Core Course	Data Modeling and Visualization Laboratory			1			2				25		25	50	
5	CAI25PCC-355	Programme Core Course	Computer Networks	2			2			25	25	50				100	
6	CAI25PEC-356	Programme Elective Course	Programme Elective Course-II	3			3			25	25	50				100	
7	CAI25PEC-357	Programme Elective Course	Programme Elective Course-II Laboratory			2			4					50		50	
8	CAI25PEC-358	Programme Elective Course	Programme Elective Course-III	3			3			25	25	50				100	
9	CAI25MDM-359	Multi-disciplinary Minor	Enabling Technologies for IoT		1	1		1	2						25	25	
10	CAI25VSEC-360	Vocational and Skill Enhancement Course	Vocational and Skill Enhancement Course-II			2			4						25	25	
11	CAI25ELC-361	Experiential Learning Course	Internship			2			4					25	25	50	
TOTAL				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	
CAI25PEC-356A	Network Security and Protocols	Choose Any One
CAI25PEC-356B	Cloud Computing Tools and Techniques	
CAI25PEC-356C	Blockchain Technology	

Basket: List of Programme Elective Course - III

Course Code	Course Name	
CAI25PEC-358A	Introduction to AI in Healthcare	Choose Any One
CAI25PEC-358B	Augmented and Virtual Reality	
CAI25PEC-358C	Data Warehousing and Mining	

Basket: List of Vocational and Skill Enhancement Course-II

Course Code	Course Name	
CAI25PEC-360A	DevOps Essentials	Choose Any One
CAI25PEC-360B	Mobile App Development using Flutter	
CAI25PEC-360C	Software Design Principles	