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Curriculum Structure and Syllabus
of
Third Year B. Tech. Artificial Intelligence and 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

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
	TOTAL	**86**	**172**	**100**

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science

SEMESTER-WISE COURSE DISTRIBUTION

<table>
<tr><td colspan="12">COURSE DISTRIBUTION:
SEMESTER WISE</td></tr>
<tr><td rowspan="2">SR NO.</td><td rowspan="2">TYPE OF COURSE</td><td colspan="8">NO. OF COURSES / SEMESTER</td><td rowspan="2">Total</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>1.</td><td>Basic Science Course (BSC)</td><td>4</td><td>4</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>8</td></tr>
<tr><td>2.</td><td>Engineering Science Course (ESC)</td><td>6</td><td>4</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>10</td></tr>
<tr><td>3.</td><td>Programme Core Course (PCC)</td><td>-</td><td>2</td><td>5</td><td>5</td><td>5</td><td>5</td><td>4</td><td>2</td><td>28</td></tr>
<tr><td>4.</td><td>Programme Elective Course (PEC)</td><td>-</td><td>2</td><td>-</td><td>-</td><td>2</td><td>3</td><td>2</td><td>2</td><td>11</td></tr>
<tr><td>5.</td><td>Multidisciplinary Minor (MDM)</td><td>-</td><td>-</td><td>1</td><td>1</td><td>2</td><td>1</td><td>-</td><td>2</td><td>7</td></tr>
<tr><td>6.</td><td>Open Elective Course (OEC)</td><td>-</td><td>-</td><td>1</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td><td>3</td></tr>
<tr><td>7.</td><td>Vocational and Skill Enhancement Course (VSEC)</td><td>1</td><td>1</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>4</td></tr>
<tr><td>8.</td><td>Ability Enhancement Course (AEC)</td><td>1</td><td>1</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>3</td></tr>
<tr><td>9.</td><td>Entrepreneurship / Management Course(EMC)</td><td>-</td><td>-</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>10.</td><td>Value Education Course (VEC)</td><td>-</td><td>-</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>11.</td><td>Experiential Learning Courses</td><td>-</td><td>-</td><td>-</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>5</td></tr>
<tr><td>12.</td><td>Indian Knowledge System</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr>
<tr><td>13.</td><td>Co-curricular Courses</td><td>1</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td colspan="2">Total</td><td>13</td><td>16</td><td>10</td><td>12</td><td>11</td><td>10</td><td>07</td><td>07</td><td>86</td></tr>
</table>

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science

SEMESTER-WISE CREDIT DISTRIBUTION

		NO. OF COURSES / SEMESTER								Total
COURSE DISTRIBUTION: SEMESTER WISE										
1 Lecture hour = 1 Credit, 2 Lab Hours = 1 Credit, 1 Tutorial Hour = 1 Credit										
SR NO.	**TYPE OF COURSE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
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: T.Y. B.Tech. Artificial Intelligence and Data Science

CURRICULUM STRUCTURE
Third Year B. Tech. Artificial Intelligence and Data Science

Semester – V

				Credits			Teaching Scheme (Hours/Week)			Examination Scheme and Marks						
Level 5.5																
Third Year B. Tech Artificial Intelligence and Data Science																
Semester V																
										CCE		ESE				
Sr. No.	Course Code	Course Type	Course Name	TH	TUT	PR	L	T	P	UT	FA	SA	PR	OR	TW	TOTAL
										25	25	50				
1	CE25PCC-301	Programme Core Course	Data science and Bigdata Analytics	2			2			25	25	50				100
2	CE25PCC-302	Programme Core Course	Cloud Computing	2			2			25	25	50				100
3	CE25PCC-303	Programme Core Course	Data science and Bigdata Analytics Laboratory			2			4				50		25	75
4	CE25PCC-304	Programme Core Course	Deep Learning and Applications	2			2			25	25	50				100
5	CE25PCC-305	Programme Core Course	Deep Learning and Applications Lab			2			4				25		25	50
6	CE25PEC-306	Programme Elective Course	Programme Elective Course - I	3			3			25	25	50				100
7	CE25PEC-307	Programme Elective Course	Programme Elective Course Laboratory - I			1			2					50		50
8	CE25MDM-308	Multi-disciplinary Minor	Internet of Things	3			3			25	25	50				100
9	CE25MDM-309	Multi-disciplinary Minor	Internet of Things Lab			1			2						25	25
10	--	Open Elective Course	Open Elective Course -III		1	1		1	2						25	25
11	CE25ELC-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, **TH-** Theory, **L-**Lecture, **T/TUT-**Tutorial, **UT-** Unit Test, **FA–**Formative Assessment, **SA –** Summative Assessment

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science

Basket: List of Courses – Programme Elective Course-I

Course Code	Course Name	
AIDS25PEC-306A	AI Powered Cybersecurity	
AIDS25PEC-306B	AI Digital Health Technologies	Choose Any One
AIDS25PEC-306C	Sensors & Actuators	

Basket: List of Courses – Open Elective Course-II

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

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science

CURRICULUM STRUCTURE
Third Year B. Tech. Artificial Intelligence and Data Science

Semester – VI

				Credits			Teaching Scheme (Hours/Week)			Examination Scheme and Marks						
Level 5.5																
Third Year B. Tech Artificial Intelligence and Data Science																
Semester VI																
										CCE		ESE				
Sr. No.	Course Code	Course Type	Course Name	TH	TUT	PR	L	T	P	UT	FA	SA	PR	OR	TW	TOTAL
										25	25	50				
1	AIDS25PCC-351	Programme Core Course	Design and Analysis of Algorithms	2			2			25	25	50				100
2	AIDS25PCC-352	Programme Core Course	Lab Practice-I			1			2				25		25	50
3	AIDS25PCC-353	Programme Core Course	Data Modelling & Visualization	2			2			25	25	50				100
4	AIDS25PCC-354	Programme Core Course	Data Modelling & Visualization Lab			1			2				25		25	50
5	AIDS25PCC-355	Programme Core Course	Theory of Computation	2			2			25	25	50				100
6	AIDS25PEC-356	Programme Elective Course	Programme Elective Course -II	3			3			25	25	50				100
7	AIDS25PEC-357	Programme Elective Course	Programme Elective Course -II Laboratory			2			4					50		50
8	AIDS25PEC-358	Programme Elective Course	Programme Elective Course -III	3			3			25	25	50				100
9	CE25MDM-359	Multi-disciplinary Minor	Internet of Things Security & Simulation Lab		1	1		1	2						25	25
10	CE25VSEC-360	Vocational and Skill Enhancement Course	Vocational & Skill Enhancement Course (VSEC)-II			2			4						25	25
11	CE25ELC-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, **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.

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science

Basket: List of Courses – Programme Elective Course-II

Course Code	Course Name	
AIDS25PEC-356A	Information System Management	
AIDS25PEC-356B	Medical Image Processing	Choose Any One
AIDS25PEC-356C	Intelligent System Robotics	

Basket: List of Courses – Programme Elective Course-III

Course Code	Course Name	
AIDS25PEC-358A	Reinforcement Learning	
AIDS25PEC-358B	Quantum Computing	Choose Any One
AIDS25PEC-358C	Business Intelligence	

Basket: List of Courses – Vocational & Skill Enhancement Course (VSEC)-II

Course Code	Course Name	
AIDS25VSEC-360A	Android App Development with Kotlin	Choose Any One
AIDS25VSEC-360B	Full Stack Development	

Curriculum Structure: T.Y. B.Tech. Artificial Intelligence and Data Science