St. John College of Engineering and Management
Autonomous Institute
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DTE Code : 3218 AICTE Permanent ID : 1-4790201
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Bachelor of Technology

In

Artificial Intelligence and Machine Learning

Second Year

Semester – III

SJCEM: R–25

Effective from Academic Year 2026-27

Program Structure for Second Year Artificial Intelligence and Machine Learning
(With Effect from 2026-27)
Semester-III

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
25AIMLPCC301	PCC	Linear Algebra &Optimization for AI	3	-	-	3	-	-	3
25AIMLPCC302	PCC	Data Structures	3	-	2	3	-	1	4
25AIMLPCC303	PCC	Microprocessor and Computer Architecture	3	-	2	3	-	1	4
25AIMLPCC304	PCC	Database Management System	2	-	2	2	-	1	3
25AIMLPCC305	PCC	Foundations of Artificial Intelligence	2	-	-	2	-	-	2
25AIMLPCC306	PCC	Programming Language I (Python)	1	1	2	1	-	1	2
25AIMLVEC301	VEC	Universal Human Values	2	1	-	2	1	-	3
25AIMLAEC301	AEC	Employability Enhancement Program -I (Communication)	-	1	-	-	1	-	1
		Total	**16**	**3**	**8**	**16**	**2**	**4**	**22**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	Or / Pr / Tut	
25AIMLPCC301	PCC	Linear Algebra &Optimization for AI	20	20	60	-	-	100
25AIMLPCC302	PCC	Data Structures	20	20	60	25	25	150
25AIMLPCC303	PCC	Microprocessor and Computer Architecture	20	20	60	25	-	125
25AIMLPCC304	PCC	Database Management System	20	20	60	25	-	125
25AIMLPCC305	PCC	Foundations of Artificial Intelligence	20	20	60	-	-	100
25AIMLPCC306	PCC	Programming Language I (Python)	-	-	-	25	25	50
25AIMLVEC301	VEC	Universal human Values	10	10	30	25	-	75
25AIMLAEC301	AEC	Employability Enhancement Program -I (Communication)	-	-	-	25	-	25
		Total	**110**	**110**	**330**	**150**	**50**	**750**

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In

Artificial Intelligence and Machine Learning

Second Year

Semester – IV

SJCEM: R–25

Effective from Academic Year 2026-27

Program Structure for Second Year AIML Engineering
(With Effect from 2026-27)
Semester-IV

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
25AIMLPCC401	PCC	Probability & Statistics for ML	3	-	-	3	-	-	3
25AIMLPCC402	PCC	Analysis of Algorithm	3	-	2	3	-	1	4
25AIMLPCC403	PCC	Computer Network	2	-	1	2	-	1	3
25AIMLPCC404	PCC	Operating System	3	-	2	3	-	1	4
25AIMLPCC405	PCC	Programming Language II (Advanced Python for AI)	-	-	2	-	-	1	1
25AIMLVSE401	VSEC	Employability Enhancement Program -II (Industry Certification)	-	-	2	-	-	1	1
25AIMLAEC401	AEC	Employability Enhancement Program -III (Communication)	-	-	2	-	-	1	1
25MDM401X	MDM	Multidisciplinary Minor	3	-	2	3	-	1	4
25AIMLOJT401	OJT	Internship-I	-	-	3	-	-	1	1
25AIMLVEC401	VEC	Environmental Studies	-	1	-	-	-	-	-
		Total	14	1	16	14	-	8	**22**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	Or / Pr / Tut	
25AIMLPCC401	PCC	Probability & Statistics for ML	20	20	60	-	-	100
25AIMLPCC402	PCC	Analysis of Algorithm	20	20	60	25	25	150
25AIMLPCC403	PCC	Computer Network	20	20	60	25	-	125
25AIMLPCC404	PCC	Operating System	20	20	60	25	-	125
25AIMLPCC405	PCC	Programming Language II (Advanced Python for AI)	-	-	-	25	25	50
25AIMLVSE401	VSEC	Employability Enhancement Program -II (Industry Certification)	-	-	-	-	25	25
25AIMLAEC401	AEC	Employability Enhancement Program -III (Communication)	-	-	-	25	-	25
25MDM401X	MDM	Multidisciplinary Minor	20	20	60	25		125
25AIMLOJT401	OJT	Internship-I	-	-	-	-	25	25
25AIMLVEC401	VEC	Environmental Studies	-	-	-	-	G	G
		Total	100	100	300	150	100	**750**

Multidisciplinary Minor

Semester	MDM	Course Code	Vertical	Course Name
IV	AIML	24MDM401AIMLC	MDM	Introduction To AI

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Third Year

Semester – V

SJCEM: R–24C

Effective from Academic Year 2026-27

Program Structure for Third Year AIML Engineering
(With Effect from 2026-27)
Semester-V

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24AIMLPCC501C	PCC	Machine Learning Fundamentals	3	-	2	3	-	1	4
24AIMLPCC502C	PCC	Data Analytics & Visualization	3	-	-	3	-	-	3
24AIMLPEC501XC	PEC	Professional Elective I	3	-	2	3	-	1	4
24AIMLPEC502XC	PEC	Professional Elective II	3	-	-	3	-	-	3
24MDM501AIMLC	MDM	Multidisciplinary Minor	3	-	2	3	-	1	4
24OE501XC	OE	Open Elective I	3	-	-	3	-	-	3
24AIMLVSE501C	VSEC	Employability Enhancement Program – IV (Prompt Engineering)	-	-	2	-	-	1	1
		Total	18	-	8	18	-	4	**22**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24AIMLPCC501C	PCC	Machine Learning Fundamentals	20	20	60	25	25	150
24AIMLPCC502C	PCC	Data Analytics & Visualization	20	20	60	-	-	100
24AIMLPEC501XC	PEC	Professional Elective- I	20	20	60	25	25	150
24AIMLPEC502XC	PEC	Professional Elective- II	20	20	60	-	-	100
24MDM501AIMLC	MDM	Multidisciplinary Minor	20	20	60	25	-	125
24OE501XC	OE	Open Elective- I	20	20	60	-	-	100
24AIMLVSE501C	VSEC	Employability Enhancement Program – IV (Prompt Engineering)	-	-	-	25	-	25
		Total	120	120	360	100	50	**750**

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Artificial Intelligence and Machine Learning

Third Year

Semester – VI

SJCEM: R–24C

Effective from Academic Year 2026-27

Program Structure for Third Year AIML Engineering
(With Effect from 2026-27) Semester-VI

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24AIMLPCC601C	PCC	Software Engineering and Project Management	2	-	2	2	-	1	3
24AIMLPCC602C	PCC	Machine Learning Systems and Deployment	3	-	2	3	-	1	4
24AIMLPEC601XC	PEC	Professional Elective- III	3	-	2	3	-	1	4
24AIMLPEC602XC	PEC	Professional Elective- IV	3	-	-	3	-	-	3
24MDM601XC	MDM	Multidisciplinary Minor	-	-	4	-	-	2	2
24AIMLVSE601C	VSEC	Employability Enhancement Program-V (Industry Certification)	-	-	2	-	-	1	1
24OE601XC	OE	Open Elective - II	1	2	-	1	2	-	3
24AIMLPRJ601C	PRJ	Major Project Phase-I	-	-	2	-	-	1	1
24AIMLOJT601C	OJT	Internship - II	-	-	3	-	-	1	1
		Total	12	2	17	12	2	8	**22**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	Or / Pr / Tut	
24AIMLPCC601C	PCC	Software Engineering and Project Management	20	20	60	25	-	125
24AIMLPCC602C	PCC	Machine Learning Systems and Deployment	20	20	60	25	25	150
24AIMLPEC601XC	PEC	Professional Elective- III	20	20	60	25	-	125
24AIMLPEC602XC	PEC	Professional Elective- IV	20	20	60	-	-	100
24MDM601XC	MDM	Multidisciplinary Minor	-	-	-	50	-	50
24AIMLVSE601C	VSEC	Employability Enhancement Program-V (Industry Certification)	-	-	-	-	25	25
24OE601XC	OE	Open Elective - II	10	10	30	50	-	100
24AIMLPRJ601C	PRJ	Major Project Phase-I	-	-	-	50		50
24AIMLOJT601C	OJT	Internship - II	-	-	-	-	25	25
		Total	90	90	270	225	75	750

Professional Electives Courses

Semester	PEC	Professional Elective-I/II/III/IV/V/VI				
		Track 1(T1)	Track 2 (T2)	Track 3 (T3)	Track 4 (T4)	Track 5(T5)
		Computational Operations	Operational Security	Data Engineering	Advanced Artificial Intelligence	AI-Driven Web Systems
Sem V	Professional Elective I/II	Agile & Project Management	Information and Network Security	Data Engineering for Power BI	AI&ML for Health and Social Care	Full Stack Web Development

Professional Electives Courses

Semester	Program Elective III	
	Track 01	
Sem VI	24AIMLPEC6012C	Blockchain Technologies

Semester	Program Elective IV	
	Track 02	
Sem VI	24AIMLPEC6021C	Web Data Engineering & Cloud Deployment

Multidisciplinary Minor

Semester	MDM	Course Code	Vertical	Course Name
VI	AIML	24MDM601AIMLC	MDM	Python for Artificial Intelligence

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Fourth Year

Semester – VII

SJCEM: R–24C

Effective from Academic Year 2026-27

Program Structure for Final Year AIML Engineering(With Effect from 2026-27)
Semester: VII

Course Code	Vertical	Course Name	Contact Hours			Credits Allotted			Total Credit
			Th	Tu	Pr	Th	Tu	Pr	Total
24AIMLPCC701C	PCC	Big Data Analytics	3	-	2	3	-	1	4
24AIMLPCC702C	PCC	Autonomous & Agent-Based AI Systems	3	-	-	3	-	-	3
24AIMLPEC701XC	PEC	Professional Elective- V	3	-	2	3	-	1	4
24AIMLPEC702XC	PEC	Professional Elective- VI	3	-	-	3	-	-	3
24IOE701XC	OE	Open Elective-III	3	-	-	3	-	-	3
24AIMLAEC701C	AEC	Employability Enhancement Program-VI (Communication)	-	-	2	-	-	1	1
24AIMLPRJC701C	PRJ	Capstone Project-I	-	-	4	-	-	2	2
Total			**15**	**-**	**10**	**15**	**-**	**5**	**20**

Course Code	Vertical	Course Name	Evaluation Scheme					
			IAE 1	IAE 2	ESE	CA	Or / Pr / Tut	Total
24AIMLPCC701C	PCC	Big Data Analytics	20	20	60	25	25	150
24AIMLPCC702C	PCC	Autonomous & Agent-Based AI Systems	20	20	60	-	-	100
24AIMLPEC701XC	PEC	Professional Elective-V	20	20	60	25	-	125
24AIMLPEC702XC	PEC	Professional Elective-VI	20	20	60	-	-	100
24IOE701XC	OE	Open Elective-III	20	20	60	-	-	100
24AIMLAEC701C	AEC	Employability Enhancement Program-VI (Communication)	-	-	-	25	-	25
24AIMLPRJC701C	PRJ	Capstone Project-I	-	-	-	50	50	100
Total			**100**	**100**	**300**	**125**	**75**	**700**

Professional Elective Courses

Elective	PEC	Professional Elective: V/VI		Professional Elective: VI
		Track 1		Track 4
Semester /Track	Professional Elective V / VI	Computational Operations	Operational Security	Advanced Artificial Intelligence
Sem VII		MLOps	Ethereum & Smart Contracts	Game Theory using AI&ML

Professional Elective: V/VI					
Track 1				Track 4	
Subject Code	Computational Operations	Subject Code	Operational Security	Subject Code	Advanced Artificial Intelligence
24AIMLPEC 7011C	MLOps	24AIMLPEC 7012C	Ethereum & Smart Contracts	24AIMLPEC 7021C	Game Theory using AI&ML

Open Elective Courses

Semester /Track	Track 1 : Entrepreneurship	Track 2: Research Methodology	Track 3: Foreign Language	Track 4 : Business Management
Sem V	Design Thinking	Research Methodology	Foreign Language – I Japanese L1 German L1	Basics of Marketing Management
Sem VII	Organizational Behavior	Publication Guidelines and Selection of Publishers	Foreign Language-II Japanese L2 German-L2	Basics of Finance Management
Sem VIII	Finance and Accounting	Intellectual Property Rights	Foreign Language-II Japanese L2 German-L2	Basics of HR Management

Open Elective: II

Semester /Track	Track 1 : Entrepreneurship	Track 2: Research Methodology	Track 3: Foreign Language	Track 4 : Business Management
Sem VII	24OE6011C Organizational Behavior	24OE6012C Publication Guidelines and Selection of Publishers	24OE60131C Foreign Language-(Japanese L2) 24OE60132C Foreign Language (German-L2)	24OE6014C Basics of Finance Management

Open Elective : III

Semester /Track	Track 1 : Entrepreneurship	Track 2: Research Methodology	Track 3: Foreign Language	Track 4 : Business Management
Sem VII	24OE7011C Finance and Accounting	24OE7012C Intellectual Property Rights	24OE70131C Foreign Language-III (Japanese 2) 24OE70132C Foreign Language-III (German 2)	24OE7014C Basics of HR Management

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Year

Semester – VIII

SJCEM: R–24C

Effective from Academic Year 2026-27

Program Structure for Final Year AIML Engineering
(With Effect from 2026-27)
Semester: VIII (A)

Course Code	Vertical	Course Name	Contact Hours			Credits Allotted			Total Credit
			Th	Tu	Pr	Th	Tu	Pr	Total
24AIMLPCC801C	PCC	Social Media Analytics	3	-	-	3	-	-	3
24AIMLPCC802C	PCC	Explainable & Responsible AI	3	-	2	3	-	1	4
24AIMLPEC801XC	PEC	Professional Elective-VII (MOOCs)	3	-	-	3	-	-	3
24AIMLPEC802XC	PEC	Professional Elective-VIII (MOOCs)	3	-	-	3	-	-	3
24AIMLVEC801C	VEC	Constitution of India (Self Study)	1	-	-	1	-	-	1
24AIMLPRJ801C	PRJ	Capstone Project-II	-	-	12	-	-	6	6
Total			**13**	**-**	**14**	**13**	**-**	**7**	**20**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24AIMLPCC801C	PCC	Social Media Analytics	20	20	60	--	--	100
24AIMLPCC802C	PCC	Explainable & Responsible AI	20	20	60	25	25	150
24AIMLPEC801XC	PEC	Professional Elective-VII (MOOCs)	20	20	60	--	--	100
24AIMLPEC802XC	PEC	Professional Elective-VIII (MOOCs)	20	20	60	--	--	100
24AIMLVEC801C	VEC	Constitution of India (Self Study)	10	10	30	--	--	50
24AIMLPRJ801C	PRJ	Capstone Project-II	-	-	-	100	100	200
Total			**90**	**90**	**270**	**125**	**125**	**700**

Semester: VIII (B)

Course Code	Vertical	Course Name	Contact Hours			Credits Allotted			Total Credit
			Th	Tu	Pr	Th	Tu	Pr	Total
24AIMLPECP801XC	PEC	Professional Elective-VII (MOOCs)	3	-	-	3	-	-	3
24AIMLPECP802XC	PEC	Professional Elective-VIII (MOOCs)	3	-	-	3	-	-	3
24AIMLVEC801C	VEC	Constitution of India (Self Study)	1	-	-	1	-	-	1
24AIMLOJT801C	OJT	Internship	-	-	39	-	-	13	13
Total			**07**	**-**	**39**	**07**	**-**	**13**	**20**

Course Code	Vertical	Course Name	Evaluation Scheme					
			Theory			Practical		Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24AIMLPECP801XC	PEC	Professional Elective-VII (MOOCs)	20	20	60	--	--	100
24AIMLPECP802XC	PEC	Professional Elective-VIII (MOOCs)	20	20	60	--	--	100
24AIMLVEC801C	VEC	Constitution of India (Self Study)	10	10	30	--	--	50
24AIMLOJT801C	OJT	Internship	-	-	-	300	150	450
Total			**50**	**50**	**150**	**300**	**150**	**700**

Professional Elective- VII (MOOCs)		Professional Elective- VIII (MOOCs)	
24AIMLPECP8011C	AI for Health Care	24AIMLPECP8021C	Data Engineering
24AIMLPECP8012C	Business Analyst	24AIMLPECP8022C	Cloud Technologies
24AIMLPECP8013C	Software Testing	24AIMLPECP8023C	AI Security

Mr. Ajay Sirsat — **Head of Department**

Dr. Kishor Rambhad — **Academic and Monitoring Coordinator**

Dr. Kamal Shah — **Principal**