



**PERIYAR MANIAMMAI INSTITUTE OF
SCIENCE & TECHNOLOGY**

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**Faculty of Computing Science and Applications
DEPARTMENT OF INFORMATICS**

**B.Sc. COMPUTER SCIENCE (AI Based Immersive Technologies)
Curriculum - Regulations 2024**

Category of courses and minimum credit requirement as per the new guidelines of UGC for B.Sc. Computer Science (AI Based Immersive Technologies) programme are outlined below:

Sl. No.	Category of Courses	Credits	
		UG 3-Years	UG 4-Years
1.	Major (Core)	60	80
2.	Minor Stream	24	32
3.	Multidisciplinary	09	09
4.	Ability Enhancement Courses	08	08
5.	Skill Enhancement Courses	09	09
6.	Value Added Courses	06 - 08	06 - 08
7.	Internship	02 - 04	02 - 04
8.	Research Project / Dissertation	-	12
Total Credits		120	160

SEMESTER I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24TA101	பொதுத்தமிழ் (General Tamil)	3	0	0	3
	U24TA102	அடிப்படைத் தமிழ் (Foundational Tamil)				
2	U24EN102	English for Communication - I	3	0	0	3
3	U24MA101	Matrices and Differential Calculus	3	1	0	4
4	U24CO101	Information Technology Essentials	3	1	0	4
5	U24PH103	Physical Science (Multidisciplinary - I)	3	0	0	3
6	U24EM101	Coding Techniques	3	0	0	3
Practical Courses						
7	U24EM102	Coding Techniques Laboratory	0	0	2	1
8	U24EM103	Speech Communication	0	0	2	1
Total			18	2	4	22

SEMESTER II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24TA151	அறிவியல் தமிழ் (Scientific Tamil)	3	0	0	3
	U24TA152	வளர்தமிழ் (Beginners Tamil)				
2	U24EN152	English for Communication - II	3	0	0	3
3	U24MA152	Vector Calculus	3	1	0	4
4	U24CO151	Scripting Paradigms	3	1	0	4
5	U24EM151	Programming in Practice	3	0	0	3
6	U24VA002	Universal Human Values	2	1	0	3
Practical Courses						
7	U24CO152	Scripting Paradigms Laboratory	0	0	2	1
8	U24EM152	Programming in Practice Laboratory	0	0	2	1
Total			17	3	4	22

SEMESTER III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24TA201	கணினித்தமிழ் (Computing Tamil)	3	0	0	3
2	U24EN201	English for Communication - III	3	0	0	3
3	U24MA201	Multivariate Calculus and Linear Algebra	3	1	0	4
4	U24IM201	Fundamentals of Artificial Intelligence	3	0	0	3
5	U24IM202	Computer Graphics and 3D Modelling	3	1	0	4
6	U24IM203	C# Fundamentals	3	0	2	4
Practical Courses						
7	U24IM204	Applied Skills in AI	0	0	2	1
8	U24IM205	Computer Graphics and 3D Modelling Lab	0	0	2	1
Total			18	2	6	23

SEMESTER IV

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24TA251	தொழில்நுட்பத் தமிழ் (Technical Tamil)	3	0	0	3
2	U24EN251	English for Communication - IV	3	0	0	3
3	U24IM251	Augmented Reality Systems	3	0	0	3
4	U24IM252	Human-Computer Interaction	3	0	0	3
5	U24IM253	Immersive Design Tools	3	0	0	3
6	U24IM254	Computer Vision and Image Processing	3	1	0	4
7	U24VA001	Environmental Studies	2	0	0	2
Practical Courses						
8	U24IM255	Immersive Design Tools Laboratory	0	0	2	1
9	U24IM256	Augmented Reality Systems Laboratory	0	0	2	1
10	U24EM256	Internship	0	0	4	2
Total			20	1	8	25

SEMESTER V

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24IM301	Machine Learning for Immersive Systems	3	0	2	4
2	U24IM302	Virtual Reality Design and Development	3	0	0	3
3	U24IM303	Data Analytics and Visualization	3	0	0	3
4	U24IM304	Cloud and Edge Computing for Immersive Applications	3	0	0	3
5	U24IM9XX	Programme Elective - I	3	0	0	3
6	U24IM7XX	Indian Knowledge System (IKS)	3	0	0	3
7	U24EM301	Community Engagement and Social Responsibility	1	0	2	2
Practical Courses						
8	U24IM305	Virtual Reality Design Laboratory	0	0	2	1
9	U24IM306	Data Visualization Laboratory	0	0	2	1
Audit Courses						
10	U24AUXXX	Audit Course - I	--	--	--	--
Total			19	0	8	23

SEMESTER VI

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Courses						
1	U24IM351	Deep Learning for Immersive Environments	3	0	0	3
2	U24IM352	Immersive Interaction Design and Simulation	3	0	0	3
3	U24IM353	IoT and Spatial Computing	3	1	0	4
4	U24IM354	Cyber Security	3	0	0	3
5	U24IM9XX	Programme Elective - II	3	0	0	3
6	U24IM8XX	Open Elective (Online) (Multidisciplinary - II)	3	0	0	3
Practical Courses						
7	U24IM355	Deep Learning Laboratory	0	0	2	1
8	U24IM356	Immersive Interaction Design Laboratory	0	0	2	1
9	U24IM357	Capstone Project	0	0	8	4
Audit Courses						
9	U24AUXXX	Audit Course - II	--	--	--	--
Total			18	1	12	25

SEMESTER VII

B.Sc. (Honours) Computer Science (AI Based Immersive Technologies)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Integrated with Practical Courses						
1	U24IM401	Generative AI for Immersive Content Creation	3	0	2	4
2	U24IM402	Multimodal AI Systems	3	0	2	4
3	U24IM403	Immersive Learning Systems	3	0	2	4
4	U24IM404	AI and Immersive Storytelling for Social Change	3	0	2	4
5	U24IM405	Extended Reality Systems and Metaverse Development	3	0	2	4
Total			15	0	10	20

SEMESTER VIII

B.Sc. (Honours) Computer Science (AI Based Immersive Technologies)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Integrated with Practical Courses						
1	U24IM451	Cognitive AI and Affective Computing	3	0	2	4
2	U24IM452	Reinforcement Learning in Immersive Systems	3	0	2	4
Project						
3	U24IM453	Project / Dissertation	0	0	24	12
Total			6	0	28	20

SEMESTER VII

B.Sc. (Honours with Research)

Computer Science (AI Based Immersive Technologies)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory Integrated with Practical Courses						
1	U24IM403	Immersive Learning Systems	3	0	2	4
2	U24IM405	Extended Reality Systems and Metaverse Development	3	0	2	4
3	U24IM406	Quantum Machine Learning for Immersive Systems	3	0	2	4
Theory Courses						
4	U24IM407	IPR and Research Methodology	3	1	0	4
Research Project						
5	U24IM408	Applicative Research on AI- Based Immersive Innovation	0	0	8	4
Total			12	1	14	20

SEMESTER VIII

B.Sc. (Honours with Research)

Computer Science (AI Based Immersive Technologies)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Research Project						
1	U24IM454	Research / Dissertation (With SCOPUS / SCI Publication)	0	0	40	20
Total			0	0	40	20

Actual Credit allotment for the course categories as per the UGC / TANSICHE guidelines for the B.Sc. Computer Science (AI Based Immersive Technologies) programme is given below:

Sl. No.	Category of Courses	Credits		
		3 Years	4 Years (Honours)	4 Years (Honours with Research)
1	Major (Core)	63	83	75
2	Minor Stream	26	34	34
3	Multidisciplinary	06	06	06
4	Ability Enhancement Courses	24	24	24
5	Skill Enhancement Courses	09	09	09
6	Value Added Courses	08	08	08
7	Internship	04	04	04
8	Research Project / Dissertation	-	12	20
Total		140	180	180

Semester wise Credit Distribution (In all Categories of Courses)
B.Sc. Computer Science (AI Based Immersive Technologies) - 3 Years

Sl. No.	Category of Courses	Credits	I	II	III	IV	V	VI
1	Major (Core)	63	4	4	17	15	11	12
2	Minor Stream	26	4	5	-	-	7	10
3	Multidisciplinary	06	3	-	-	-	-	3
4	Ability Enhancement Courses	24	6	6	6	6	-	-
5	Skill Enhancement Courses	09	5	4	-	-	-	-
6	Value Added Courses	08	-	3	-	2	3	-
7	Internship	04	-	-	-	2	2	-
8	Project / Dissertation	-	-	-	-	-	-	-
Total Credits		140	22	22	23	25	23	25

Semester wise Credit Distribution (In all Categories of Courses)

B.Sc. (Honours) Computer Science (AI Based Immersive Technologies) - 4 Years

Sl. No.	Category of Courses	Credits	I	II	III	IV	V	VI	VII	VIII
1	Major (Core)	83	4	4	17	15	11	12	16	4
2	Minor Stream	34	4	5	-	-	7	10	4	4
3	Multidisciplinary	06	3	-	-	-	-	3	-	-
4	Ability Enhancement Courses	24	6	6	6	6	-	-	-	-
5	Skill Enhancement Courses	09	5	4	-	-	-	-	-	-
6	Value Added Courses	08	-	3	-	2	3	-	-	-
7	Internship	04	-	-	-	2	2	-	-	-
8	Project / Dissertation	12	-	-	-	-	-	-	-	12
Total Credits		180	22	22	23	25	23	25	20	20

Semester wise Credit Distribution (In all Categories of Courses)

B.Sc. (Honours with Research)

Computer Science (AI Based Immersive Technologies) - 4 Years

Sl. No.	Category of Courses	Credits	I	II	III	IV	V	VI	VII	VIII
1	Major (Core)	75	4	4	17	15	11	12	12	-
2	Minor Stream	34	4	5	-	-	7	10	8	-
3	Multidisciplinary	06	3	-	-	-	-	3	-	-
4	Ability Enhancement Courses	24	6	6	6	6	-	-	-	-
5	Skill Enhancement Courses	09	5	4	-	-	-	-	-	-
6	Value Added Courses	08	-	3	-	2	3	-	-	-
7	Internship	04	-	-	-	2	2	-	-	-
8	Project / Dissertation	20	-	-	-	-	-	-	-	20
Total Credits		180	22	22	23	25	23	25	20	20

The number of credits in each semester is summarized as follows:

Programme	I	II	III	IV	V	VI	VII	VIII
B.Sc. Computer Science (AI Based Immersive Technologies)	22	22	23	25	23	25	20	20

Suggested List of Courses for Programme Elective - I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24IM901	AI Driven Game and Simulation Design	3	0	0	3
2	U24IM902	Explainable and Responsible AI	3	0	0	3
3	U24IM903	Full-Stack Application Development	3	0	0	3
4	U24IM904	Ethics and Sustainability in Immersive AI Systems	3	0	0	3
5	U24IM905	AI Agents and Intelligent Systems	3	0	0	3

Suggested List of Courses for Programme Elective - II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24IM951	AI-Driven Digital Twins	3	0	0	3
2	U24IM952	Design Thinking Principles for Immersive Applications	3	0	0	3
3	U24IM953	Mobile Application Development	3	0	0	3
4	U24IM954	Mixed Reality Interfaces and Haptic Technologies	3	0	0	3
5	U24IM955	Immersive Environment Optimization	3	0	0	3

Suggested List of Courses on Indian Knowledge System (IKS)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24IM701	Computing in Thirukkural	3	0	0	3
2	U24IM702	Ancient Indian Innovations in Computer Technology	3	0	0	3
3	U24IM703	Indian Knowledge System - Concepts and Applications	3	0	0	3
4	U24IM704	Scientific Thoughts of Periyar EVR	3	0	0	3

List of Courses under Each Category

Major (Core) Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24MA101	Matrices and Differential Calculus	3	1	0	4
2	U24MA152	Vector Calculus	3	1	0	4
3	U24MA201	Multivariate Calculus and Linear Algebra	3	1	0	4
4	U24IM201	Fundamentals of Artificial Intelligence	3	0	0	3
5	U24IM202	Computer Graphics and 3D Modelling	3	1	0	4
6	U24IM203	C# Fundamentals	3	0	2	4
7	U24IM204	Applied Skills in AI	0	0	2	1
8	U24IM205	Computer Graphics and 3D Modelling Lab	0	0	2	1
9	U24IM251	Augmented Reality Systems	3	0	0	3
10	U24IM252	Human-Computer Interaction	3	0	0	3
11	U24IM253	Immersive Design Tools	3	0	0	3
12	U24IM254	Computer Vision and Image Processing	3	1	0	4
13	U24IM255	Immersive Design Tools Laboratory	0	0	2	1
14	U24IM256	Augmented Reality Systems Laboratory	0	0	2	1
15	U24IM301	Machine Learning for Immersive Systems	3	0	2	4
16	U24IM302	Virtual Reality Design and Development	3	0	0	3
17	U24IM304	Cloud and Edge Computing for Immersive Applications	3	0	0	3
18	U24IM305	Virtual Reality Design Laboratory	0	0	2	1
19	U24IM351	Deep Learning for Immersive Environments	3	0	0	3

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
20	U24IM352	Immersive Interaction Design and Simulation	3	0	0	3
21	U24IM355	Deep Learning Laboratory	0	0	2	1
22	U24IM356	Immersive Interaction Design Laboratory	0	0	2	1
23	U24DS356	Capstone Project	0	0	8	4
Total			45	5	26	63
Additional Major (Core) Courses for 4 years B.Sc. (Honours)						
24	U24IM401	Generative AI for Immersive Content Creation	3	0	2	4
25	U24IM403	Immersive Learning Systems	3	0	2	4
26	U24IM404	AI and Immersive Storytelling for Social Change	3	0	2	4
27	U24IM405	Extended Reality Systems and Metaverse Development	3	0	2	4
28	U24IM452	Reinforcement Learning in Immersive Systems	3	0	2	4
Total			15	0	10	20
Additional Major (Core) Courses for 4 years B.Sc. (Honours with Research)						
24	U24IM403	Immersive Learning Systems	3	0	2	4
25	U24IM405	Extended Reality Systems and Metaverse Development	3	0	2	4
26	U24IM408	Applicative Research on AI Based Immersive Innovation	0	0	8	4
Total			6	0	12	12

Minor (Core) Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CO101	Information Technology Essentials	3	1	0	4
2	U24CO151	Scripting Paradigms	3	1	0	4
3	U24CO152	Scripting Paradigms Laboratory	0	0	2	1
4	U24IM303	Data Analytics and Visualization	3	0	0	3
5	U24IM9XX	Programme Elective - I	3	0	0	3
6	U24IM306	Data Visualization Laboratory	0	0	2	1
7	U24IM353	IoT and Spatial Computing	3	1	0	4
8	U24IM354	Cyber Security	3	0	0	3
9	U24IM9XX	Programme Elective - II	3	0	0	3
Total			21	3	4	26
Additional Minor (Core) Courses for 4 years B.Sc. (Honours)						
10	U24IM402	Multimodal AI Systems	3	0	2	4
11	U24IM451	Cognitive AI and Affective Computing	3	0	2	4
Total			6	0	4	8
Additional Minor (Core) Courses for 4 years B.Sc. (Honours with Research)						
10	U24IM406	Quantum Machine Learning for Immersive Systems	3	0	2	4
11	U24IM407	IPR and Research Methodology	3	1	0	4
Total			6	1	2	8

Multidisciplinary Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24PH103	Physical Sciences	3	0	0	3
2	U24IM8XX	Open Elective (Online)	3	0	0	3
Total			6	0	0	6

Ability Enhancement Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24TA101	பொதுத்தமிழ் (General Tamil)	3	0	0	3
	U24TA102	அடிப்படைத் தமிழ் (Foundational Tamil)				
2	U24EN102	English for Communication - I	3	0	0	3
3	U24TA151	அறிவியல் தமிழ் (Scientific Tamil)	3	0	0	3
	U24TA152	வளர்தமிழ் (Beginners Tamil)				
4	U24EN152	English for Communication - II	3	0	0	3
5	U24TA201	கணிணித்தமிழ் (Computing Tamil)	3	0	0	3
6	U24EN201	English for Communication - III	3	0	0	3
7	U24TA251	தொழில்நுட்பத் தமிழ் (Technical Tamil)	3	0	0	3
8	U24EN251	English for Communication - IV	3	0	0	3
Total			24	0	0	24

Skill Enhancement Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24EM101	Coding Techniques	3	0	0	3
2	U24EM102	Coding Techniques Laboratory	0	0	2	1
3	U24EM103	Speech Communication	0	0	2	1
4	U24EM151	Programming in Practice	3	0	0	3
5	U24EM152	Programming in Practice Laboratory	0	0	2	1
Total			6	0	6	9

Value Added Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24VA002	Universal Human Values	2	1	0	3
2	U24VA001	Environmental Studies	2	0	0	2
3	U24DS7XX	Indian Knowledge System (IKS)	3	0	0	3
Total			7	1	0	8

Internship

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24EM256	Internship	0	0	0	2
2	U24EM301	Community Engagement and Social Responsibility	0	0	4	2
Total			0	0	4	4

Research Project / Dissertation (Honours)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24IM453	Project / Dissertation	0	0	24	12
Total			0	0	24	12

Research Project / Dissertation (Honours with Research)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24IM454	Research / Dissertation (With SCOPUS / SCI Publication)	0	0	40	20
Total			0	0	40	20

Audit Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AU001	Disaster Management	--	--	--	--
2	U24AU003	Cyber Security	--	--	--	--
3	U24AU008	Entrepreneurship Development	--	--	--	--
4	U24AU009	Constitution of India	--	--	--	--
Total			--	--	--	--