FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)
(An Autonomous Institution)



INTEGRATED MCA

CURRICULUM – 2026

SEMESTER I TO X

CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS)

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Preface to the Curriculum:

The Integrated Master of Computer Applications (IMCA) programme at FISAT, launched in 2025, is a five-year programme designed to produce industry-ready professionals in computer science. Affiliated with Kerala Technological University and approved by AICTE, the curriculum emphasizes excellence, innovation, and relevance to the evolving IT landscape, while also preparing students for higher studies and successful careers in IT industry.

Curriculum Structure & Semester Wise Credit Distribution:

The curriculum has a total of 214 credits, spans five academic years, comprising ten semesters. The courses are grouped into different heads such as:

- Programme Core Course (PCC): Program specific theory courses.
- Programme Elective Course (PEC): Specialized theory courses chosen by students
- Project Based Course (PBC): Courses incorporating a project-based learning element.
- Program Core Laboratory Courses (PCL): Core lab courses in Computer Applications
- Project (PRJ): Mini/Main Project Courses
- Programme Seminar (PSR) – Seminar Course on Recent Technologies
- Value Added Course (VAC) - Additional courses enhancing domain expertise
- Ability Enhancement Courses (AEC)- Courses developing essential skills
- Skill Enhancement Course (SEC) – Technical & Professional skill enhancement courses.

Abbreviations Used:

L-T-P-R Lecture-Tutorial-Practical-Research/Project-Based Learning
CIA – Continuous Internal Assessment
ESE – End Semester Examination

Self Study (SS) Hours Calculation

$$SS = 1.5L + 0.5T + 0.5P + R$$

Self-Study (SS) hours represent the estimated time a student is expected to spend outside regular contact hours for effective learning, preparation and reinforcement of course content. These hours are calculated based on the instructional components of the course to ensure adequate academic engagement and attainment of Course Outcomes.

SEMESTER – 1													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAAE1001	AEC	Professional English	2	0	2	0	4	40	60	2	4
2	B	26CAPC1001	PCC	Discrete Mathematics	3	1	0	0	5	40	60	4	4
3	C	26CAPC1002	PCC	Programming in C	3	1	0	0	5	40	60	4	4
4	D	26CAPC1003	PCC	Digital Fundamentals & PC Hardware	3	1	0	0	5	40	60	4	4
5	E	26CAVA1001	VAC	Introduction to Indian Knowledge System	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL1001	PCL	Problem Solving Lab using C	0	0	4	0	2	50	50	2	4
7	T	26CAPL1002	PCL	Office Automation Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE1001	SEC	Skill Enhancement Course 1	2	0	0	0	-	-	-	1	2
				Total:	14	3	12	0	27.5	**360**	**340**	**20**	**29**

L-T-P-R Lecture-Tutorial-Practical-Research/Project-Based Learning,

CIA – Continuous Internal Assessment Marks,

ESE – End Semester Examination Marks

Note 1: *Induction Programme at the beginning of the semester.*

Note 2: *Students who have not studied Mathematics at the higher secondary level will be required to complete a compulsory bridge course. The Syllabus of the Bridge Course includes,*

- *Mathematics- (Lecture- 10 Hours)*
- *Basics of Programming - (Lecture - 12 Hours)*

SEMESTER – 2													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAAE2001	AEC	Technical Communication	2	0	2	0	4	40	60	2	4
2	B	26CAPC2001	PCC	Computer Organization	3	1	0	0	5	40	60	4	4
3	C	26CAPC2002	PCC	Data Structures	3	1	0	0	5	40	60	4	4
4	D	26CAPC2003	PCC	Introduction to RDBMS & SQL	3	1	0	0	5	40	60	4	4
5	E	26CAVA2001	VAC	Professional Ethics & Sustainability	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL2001	PCL	Data Structures Lab	0	0	4	0	2	50	50	2	4
7	T	26CAPL2002	PCL	RDBMS Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE2001	SEC	Skill Enhancement Course 2	2	0	0	0	-	-	-	1	2
				Total:	14	3	12	0	27.5	**360**	**340**	**20**	**29**

Note: *During the 2nd semester break, the students are advised to take Social Responsibility & Community Engagement (SRCE), an experiential learning program that contributes to community well-being and supports the UN Sustainable Development Goals (SDGs). A reflection report highlighting the activities and related SDGs must be submitted upon completion.*

SEMESTER – 3												
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAPC3001	PCC	Web Technology	3	1	0	0	5	40	60	4	4
2	B	26CAPC3002	PCC	Object Oriented Programming using Java	3	1	0	0	5	40	60	4	4
3	C	26CAPC3003	PCC	Probability & Statistics	3	1	0	0	5	40	60	4	4
4	D	26CAPB3001	PBC	Operating Systems	3	0	0	1	5.5	60	40	4	4
5	E	26CAVA3001	VAC	Entrepreneurship & Start-up Ecosystem	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL3001	PCL	Object Oriented Programming Lab	0	0	4	0	2	50	50	2	4
7	T	26CAPL3002	PCL	Web Technology Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE3001	SEC	Skill Enhancement Course 3	2	0	0	0	-	-	-	1	2
				Total:	15	3	9	2	29	**380**	**320**	**22**	**29**

Note: *During the 3rd semester break, students are encouraged to visit a start-up and prepare a real-world start-up case study report.*

SEMESTER – 4													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAPB4001	PBC	Artificial Intelligence	3	0	0	1	5.5	60	40	4	4
2	B	26CAPC4001	PCC	Computer Networks	3	1	0	0	5	40	60	4	4
3	C	26CAPC4002	PCC	Linux and Shell Programming	3	1	0	0	5	40	60	4	4
4	D	26CAPC4003	PCC	Business Management	3	1	0	0	5	40	60	4	4
5	E	26CAVA4001	VAC	Constitution of India	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL4001	PCL	Networks Lab	0	0	4	0	2	50	50	2	4
7	T	26CAPL4002	PCL	Linux Scripting Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE4001	SEC	Skill Enhancement Course 4	2	0	0	0	-	-	-	1	2
				Total:	15	3	10	1	29	**380**	**320**	**22**	**29**

Note: *After completing the fourth or fifth semester, during the semester break, every student shall undergo a mandatory internship of 2 to 6 weeks with Industry/ R&D organizations/ academic institutions of national importance/ IDEA lab/Centre for Future Skills(CFS), NGOs, Govt. Organizations/Micro, Small and Medium Enterprises(MSMEs) to gain practical and industry-oriented exposure. The internship report must be submitted in the sixth semester. This report will be evaluated by a panel constituted by the department and will carry 25 marks, which will be considered as a component of the Mini Project-1 course in the sixth Semester.*

SEMESTER – 5													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAPC5001	PCC	Python for Data Science	3	1	0	0	5	40	60	4	4
2	B	26CAPB5001	PBC	Cryptography	3	0	0	1	5.5	60	40	4	4
3	C	26CAPC5002	PCC	Cloud Computing	3	1	0	0	5	40	60	4	4
4	D	26CAPC5003	PCC	User Interface Design	3	1	0	0	5	40	60	4	4
5	E	26CAVA5001	VAC	IPR & Cyber Laws	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL5001	PCL	Machine Learning Lab	0	0	4	0	2	50	50	2	4
7	T	26CAPL5002	PCL	UI/UX Design Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE5001	SEC	Skill Enhancement Course 5	2	0	0	0	-	-	-	1	2
				Total:	15	3	9	2	29	**380**	**320**	**22**	**29**

SEMESTER – 6													
No	Slot	Course Code	Course Type	Course Name	Hours/Week				SS	Total Marks		Credits	Hrs./ Week
					L	T	P	R		CIA	ESE		
1	A	26CAPC6001	PCC	Compiler Design	3	1	0	0	5	40	60	4	4
2	B	26CAPC6002	PCC	Operations Research	3	1	0	0	5	40	60	4	4
3	C	26CAPE610X	PEC	Elective 1	3	1	0	0	5	40	60	4	4
4	D	26CAPE620X	PEC	Elective 2	3	1	0	0	5	40	60	4	4
5	E	26CAVA6001	VAC	Organizational Behaviour	3	0	0	0	4.5	100	-	1	3
6	S	26CAPL6001	PCL	Compiler Design Lab	0	0	4	0	2	50	50	2	4
7	T	26CAPR6001	PRJ	Mini Project-1	0	0	0	4	4	100	-	2	4
8	-	26CASE6001	SEC	Skill Enhancement Course 6	2	0	0	0	-	-	-	1	2
				Total:	15	4	5	5	30.5	**410**	**290**	**22**	**29**

ELECTIVE 1 - ARTIFICIAL INTELLIGENCE		
No	**Course Code**	**Course Name**
1	26CAPE6101	Responsible AI
2	26CAPE6102	Prompt Engineering
3	26CAPE6103	Expert System
4	26CAPE6104	Knowledge Engineering
5	26CAPE6105	Advanced AI
ELECTIVE 2 - DATA SCIENCE		
No	**Course Code**	**Course Name**
1	26CAPE6201	Big Data Analytics
2	26CAPE6202	Social Network Analysis
3	26CAPE6203	Pattern Recognition
4	26CAPE6204	Computer Vision
5	26CAPE6205	Neural Network

SEMESTER – 7												
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAPC7001	PCC	Mathematical Foundations for Computing	3	1	0	0	5	40	60	4	4
2	B	26CAPC7002	PCC	Advanced Database Management Systems	3	1	0	0	5	40	60	4	4
3	C	26CAPC7003	PCC	Advanced Python Programming	3	1	0	0	5	40	60	4	4
4	D	26CAPC7004	PCC	Advanced Software Engineering	3	1	0	0	5	40	60	4	4
5	S	26CAPL7001	PCL	Advance DBMS Lab	0	0	4	0	2	50	50	2	4
6	T	26CAPL7002	PCL	Python Programming Lab	0	0	4	0	2	50	50	2	4
7	U	26CAPL7003	PCL	Advanced Web Programming Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE7001	SEC	Skill Enhancement Course 7	2	0	0	0	-	-	-	1	2
				Total:	12	4	12	2	26	**310**	**390**	**23**	**30**

Note : *The students shall enrol in and successfully complete one MOOC course during the fourth or fifth year of study. Submission of 'Successful Course Completion Certificate' is mandatory to publish their results.*

SEMESTER – 8													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAPC8001	PCC	Advanced Java Programming	3	1	0	0	5	40	60	4	4
2	B	26CAPC8002	PCC	Data Science with Deep Learning	3	1	0	0	5	40	60	4	4
3	C	26CAPC8003	PCC	Mobile Computing	3	1	0	0	5	40	60	4	4
4	D	26CAPC8004	PCC	Generative AI	3	1	0	0	5	40	60	4	4
5	S	26CAPL8001	PCL	Java Programming Lab	0	0	4	0	2	50	50	2	4
6	T	26CAPL8002	PCL	Data Science Lab	0	0	4	0	2	50	50	2	4
7	U	26CAPL8003	PCL	Mobile Computing Lab	0	0	4	0	2	50	50	2	4
8	-	26CASE8001	SEC	Skill Enhancement Course 8	2	0	0	0	-	-	-	1	2
				Total:	12	4	12	2	26	**310**	**390**	**23**	**30**

SEMESTER – 9												
No	Slot	Course Code	Course Type	Course Name	Hours/Week				SS	Total Marks		Credits	Hrs./ Week
					L	T	P	R		CIA	ESE		
1	A	26CAPC9001	PCC	Design & Analysis of Algorithms	3	1	0	0	5	40	60	4	4
2	B	26CAPC9002	PCC	Research Methodology	3	1	0	0	5	40	60	4	4
3	C	26CAPE930X	PEC	Elective 3	3	1	0	0	5	40	60	4	4
4	D	26CAPE940X	PEC	Elective 4	3	1	0	0	5	40	60	4	4
5	S	26CAPL9001	PCL	Full Stack Development	0	0	4	0	2	50	50	2	4
6	T	26CAPL9002	PCL	Technical Writing and Research Tools Lab	0	0	4	0	2	50	50	2	4
7	U	26CAPR9001	PRJ	Mini Project-2	0	0	0	4	4	100	-	2	4
8	-	26CASE9001	SEC	Skill Enhancement Course 9	2	0	0	0	-	-	-	1	2
				Total:	14	4	8	4	28	**360**	**340**	**23**	**30**

ELECTIVE 3 - CYBERSECURITY		
No	**Course Code**	**Course Name**
1	26CAPE9301	Ethical Hacking
2	26CAPE9302	Privacy & Security for Social Networks
3	26CAPE9303	Cyber Forensics
4	26CAPE9304	Blockchain Technology
5	26CAPE9305	Security of E-Based Systems

ELECTIVE 4 - EMERGING TECHNOLOGIES		
No	**Course Code**	**Course Name**
1	26CAPE9401	Virtualization & Containers
2	26CAPE9402	Microservices Architectures
3	26CAPE9403	AR/VR
4	26CAPE9404	Internet of Things
5	26CAPE9405	Digital Marketing

SEMESTER – 10													
No	**Slot**	**Course Code**	**Course Type**	**Course Name**	**Hours/Week**				**SS**	**Total Marks**		**Credits**	**Hrs./ Week**
					L	**T**	**P**	**R**		**CIA**	**ESE**		
1	A	26CAVAX001	VAC	Computational Intelligence for Indian Art Studies (Internship Students: *Self Study/ Online Classes / MOOC Approved by the College)*	2	0	2	0	4	100	-	1	4
2	B	26CAPSX001	PSR	Seminar	0	0	2	0	1	50	-	2	2
3	C	26CAPRX001	PRJ	Research Project/ Internship	0	0	0	24	24	70	30	14	24
				Total:	3	0	3	24	29	**220**	**30**	**17**	**30**

The curriculum is designed to offer a seamless learning experience, blending core concepts in computer science, programming, and mathematics with emerging areas such as Artificial Intelligence, Data Analytics, and Cloud Computing. Strong emphasis is placed on practical learning through lab sessions, projects, and internships.

Credit Distribution Overview:

The credit allocation across S1-S10 semesters is structured based on different course types, as detailed below.

Semester	Details of Courses & Credits (INMCA)									Total Credits Semester Wise
	PCC	PEC	PBC	PCL	PRJ	PSR	VAC	AEC	SEC	
S1	12	–	–	4	–	–	1	2	1	20
S2	12	–	–	4	–	–	1	2	1	20
S3	12	–	4	4	–	–	1	–	1	22
S4	12	–	4	4	–	–	1	–	1	22
S5	12	–	4	4	–	–	1	–	1	22
S6	8	8	–	2	2	–	1	–	1	22
S7	16	–	–	6	–	–	_	–	1	23
S8	16	–	–	6	–	–	_	–	1	23
S9	8	8	–	4	2	–	_	–	1	23
S10	–	–	–		14	2	1	–	–	17
Total Credits-Course Type wise	108	16	12	38	18	2	7	4	9	214
TOTAL CREDITS							214			