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



MCA (Two-Year)

CURRICULUM – 2026

SEMESTER I TO IV

CHOICE BASED CREDIT AND SEMESTER SYSTEM (CBCSS)

HORMIS NAGAR, MOOKKANNOOR,
ANGAMALY, KERALA - 683 576

Preface to the Curriculum:

The MCA (Two-Year) programme, offered by the Department of Computer Applications at the Federal Institute of Science and Technology (FISAT), is a two-year academic initiative designed to develop competent, industry-ready professionals in computer science. Established in 2006, the programme is affiliated with Kerala Technological University and approved by AICTE, New Delhi. By integrating core concepts with emerging technologies, the programme equips students with the knowledge and skills essential for successful careers in the IT industry.

Curriculum Structure & Semester Wise Credit Distribution:

The curriculum has a total of 86 credits, spans two academic years, comprising four 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
- 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
- Skill Enhancement Course (SEC) – Technical & Professional skill enhancement courses.
- Value Added Course (VAC) - Additional courses enhancing domain expertise

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	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 1	2	0	0	0	-	-	-	1	2
				Total:	12	4	12	2	26	**310**	**390**	**23**	**30**

Note 1: *Induction Programme at the beginning of the semester as an optional component.*

Note 2: *Students are required to complete a compulsory bridge course. The Syllabus of the Bridge Course includes,*

- *Basic Mathematics*
- *Digital fundamentals & Computer Organization*
- *Introductory Concepts of Data Structures, DBMS, OS*

Note 3: *The students shall enrol in and successfully complete one MOOC course during the first or second year of study. Submission of 'Successful Course Completion Certificate' is mandatory to publish their results.*

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	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 2	2	0	0	0	-	-	-	1	2
				Total:	12	4	12	2	26	**310**	**390**	**23**	**30**

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	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 1	3	1	0	0	5	40	60	4	4
4	D	26CAPE940X	PEC	Elective 2	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	0	0	0	4	4	100	-	2	4
8	-	26CASE9001	SEC	Skill Enhancement Course 3	2	0	0	0	-	-	-	1	2
				Total:	14	4	8	4	28	**360**	**340**	**23**	**30**

ELECTIVE 1 - 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 2 - 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 – 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	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:	2	0	4	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-S4 semesters is structured based on different course types, as detailed below.

Semester	Details of Courses & Credits (MCA)							Total Credits Semester Wise
	PCC	PEC	PCL	PRJ	PSR	VAC	SEC	
S1	16	–	6	–	–	–	1	23
S2	16	–	6	–	–	–	1	23
S3	8	8	4	2	–	–	1	23
S4	–	–	–	14	2	1	–	17
Total Credits-CourseType wise	40	8	16	16	2	1	3	86
TOTAL CREDITS					86			