

SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

VIDYA NAGAR, PALISSERY, KARUKUTTY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Curriculum for Master of Computer Applications (MCA)

2026 Scheme • Semesters S1 – S4

Vision

- To be among the leading CSE departments, developing ethical engineers and impactful research aligned with societal and sustainable development goals.

Mission

- Provide Computer Science education that cultivates creativity, problem-solving, and a passion for lifelong learning.
- Develop competent Computer Science professionals by fostering teamwork, leadership and ethical responsibility.
- Promote impactful research in cybersecurity to address societal challenges and support sustainable development.

Program Outcomes (POs)

PO1 (Foundation Knowledge): Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.

PO2 (Problem Analysis): Identify, review, formulate and analyse problems for primarily focussing on customer requirements using critical thinking frameworks.

PO3 (Development of Solutions): Design, develop and investigate problems with as an innovative approach for solutions incorporating ESG/SDG goals.

PO4 (Modern Tool Usage): Select, adapt and apply modern computational tools such as development of algorithms with an understanding of the limitations including human biases.

PO5 (Individual and Teamwork): Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups. Use methodologies such as agile.

PO6 (Project Management and Finance): Use the principles of project management such as scheduling, work breakdown structure and be conversant with the principles of Finance for profitable project management.

PO7 (Ethics): Commit to professional ethics in managing software projects with financial aspects. Learn to use new technologies for cyber security and insulate customers from malware

PO8 (Life-long learning): Change management skills and the ability to learn, keep up with contemporary technologies and ways of working.

ABBREVIATIONS & COURSE CATEGORIES

L – Lecture (hours)	T – Tutorial (hours)	P – Practical (hours)
SL – Self-Learning (hours)	MC – Massive Open Online Course (MOOC)	Cr. - Credits
IAT-1 / IAT-2 – Internal Assessment Test 1 / 2	CIA – Continuous Internal Assessment	SEE – Semester End Examination
CC – Common Courses	CC-PC Common Courses— Programme Core	PC - Programme Core Courses
PE – Programme Elective Courses	CC-SEC Common Course-Skill Enhancement Course	PS – Project Work / Seminar/ Comprehensive Viva
MOOC – Massive Open Online Course	PCL – Programme Core Laboratory Courses	

SEMESTER 1 (S1)

Sl.	Slot	Course Code	Course Title	Type	Category	Cr.	Hour Structure				Total Hrs	CIA	SEE	Total Marks
							L	T	P	SL				
1	A	26PCMCA101	Mathematical Foundations for Computing	CC	PC	4	45	15	-	60	120	40	60	100
2	B	26PCMCA102	Digital Fundamentals & Computer Architecture	PC	PC	4	45	15	-	60	120	40	60	100
3	C	26PCMCA103	Advanced Data Structures	PC	PC	4	45	15	-	60	120	40	60	100
4	D	26PCMCA104	Advanced Software Engineering	PC	PC	4	45	15	-	60	120	40	60	100
5	R	26PLMCA105	Programming Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
6	T	26PLMCA106	Data Structures Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
7		26SEMCA107	Entrepreneurship & Innovations in Technology	CC	SEC	1	15	-	-	15	30	100	-	100
8			Minimum one MOOC Course is to be completed	MC	MC	2	-	-	-	60	60	-	-	-
TOTAL						23	195	60	90	345	690	360	340	700

SEMESTER 2 (S2)

Sl.	Slot	Course Code	Course Title	Type	Category	Cr.	Hour Structure				Total Hrs	CIA	SEE	Total Marks
							L	T	P	SL				
1	A	26PCMCA201	Advanced Database Management Systems	PC	PC	4	45	15	-	60	120	40	60	100
2	B	26PCMCA202	Advanced Computer Networks	PC	PC	4	45	15	-	60	120	40	60	100
3	C	26PEMCA21N	Elective 1	PE	PE	3	45	-	-	45	90	40	60	100
4	D	26PEMCA22N	Elective 2	PE	PE	3	45	-	-	45	90	40	60	100
5	R	26PLMCA203	Object Oriented Programming Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
6	S	26PLMCA204	Advanced DBMS Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
7		26SEMCA205	Industrial Readiness Training	CC	SEC	1	15	-	-	15	30	100	-	100
8			Second MOOC Course is to be completed	MC	MC	2	-	-	-	60	60	-	-	-
TOTAL						21	195	30	90	315	630	360	340	700

SEMESTER 3 (S3)

Sl.	Slot	Course Code	Course Title	Type	C at .	Cr.	Hour Structure				Total hrs	CIA	SEE	Total Marks
							L	T	P	SL				
1	A	26PCMCA301	Data Science & Machine Learning	PC	PC	4	45	15	-	60	120	40	60	100
2	B	26PCMCA302	Design & Analysis of Algorithms	PC	PC	4	45	15	-	60	120	40	60	100
3	C	26PEMCA31N	Elective 3	PE	PE	3	45	-	-	45	90	40	60	100
4	D	26PEMCA32N	Elective 4	PE	PE	3	45	-	-	45	90	40	60	100
5	R	26PLMCA303	Data Science Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
6	S	26PLMCA304	Mobile Application Development Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
7	T	26PSMCA305	Mini Project	PS	PS	2	-	-	60	-	60	100	-	100
8		26SEMCA306	Domain Expertise Workshops	CC	SE C	1	15	-	-	15	30	100	-	100
TOTAL						21	195	30	150	255	630	460	340	800

SEMESTER 4 (S4)

Sl.	Slot	Course Code	Course Title	Type	C at .	Cr.	Hour Structure				Total hrs	CIA	SEE	Total Marks
							L	T	P	SL				
1		26PSMCA401	Comprehensive Viva	PS	PS	4	-	-	-	120	120	-	100	100
2		26PSMCA402	Seminar	PS	PS	2	-	-	60	-	60	50	-	50
3		26PSMCA403	Main Project	PS	PS	8	-	-	240	-	240	70	30	100
4	S	26PLMCA404	Web Programming Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
5	T	26PLMCA405	Networking & System Administration Lab	PC L	PC L	2	-	-	45	15	60	50	50	100
TOTAL						18	0	0	390	150	540	220	230	450

TOTAL PROGRAMME CREDITS (S1 – S4): 83

PROGRAMME ELECTIVES

PROGRAM ELECTIVE-1

Sl.	Course Code	Course Title	Type	Cat.	Cr.	Hour Structure					Total Marks	
						L	T	P	SL	Total Hrs	CIA	SEE
1	26PEMCA211	Applied Statistics	PE	PE	3	45	-	-	45	90	40	60
2	26PEMCA212	Organizational Behaviour	PE	PE	3	45	-	-	45	90	40	60
3	26PEMCA213	Functional Programming	PE	PE	3	45	-	-	45	90	40	60
4	26PEMCA214	Virtualisation and Containers	PE	PE	3	45	-	-	45	90	40	60
5	26PEMCA215	Advanced Operating Systems	PE	PE	3	45	-	-	45	90	40	60
6	26PEMCA216	Soft Computing	PE	PE	3	45	-	-	45	90	40	60

PROGRAM ELECTIVE-2

Sl.	Course Code	Course Title	Type	Cat.	Cr.	Hour Structure					Total Marks	
						L	T	P	SL	Total Hrs	CIA	SEE
1	26PEMCA221	Business Management	PE	PE	3	45	-	-	45	90	40	60
2	26PEMCA222	Embedded Systems	PE	PE	3	45	-	-	45	90	40	60
3	26PEMCA223	Computer Graphics	PE	PE	3	45	-	-	45	90	40	60
4	26PEMCA224	Artificial Intelligence	PE	PE	3	45	-	-	45	90	40	60
5	26PEMCA225	IPR and Cyber Laws	PE	PE	3	45	-	-	45	90	40	60
6	26PEMCA226	Data Analytics	PE	PE	3	45	-	-	45	90	40	60

PROGRAM ELECTIVE-3

Sl.	Course Code	Course Title	Type	Cat.	Cr.	Hour Structure					Total Marks	
						L	T	P	SL	Total Hrs	CIA	SEE
1	26PEMCA311	Operations Research	PE	PE	3	45	-	-	45	90	40	60
2	26PEMCA312	Cyber Security & Cryptography	PE	PE	3	45	-	-	45	90	40	60
3	26PEMCA313	Cloud Computing	PE	PE	3	45	-	-	45	90	40	60
4	26PEMCA314	Cyber Forensics	PE	PE	3	45	-	-	45	90	40	60
5	26PEMCA315	Compiler Design	PE	PE	3	45	-	-	45	90	40	60

PROGRAM ELECTIVE-4

Sl.	Course Code	Course Title	Type	Cat.	Cr.	Hour Structure					Total Marks	
						L	T	P	SL	Total Hrs	CIA	SEE
1	26PEMCA321	Internet of Things	PE	PE	3	45	-	-	45	90	40	60
2	26PEMCA322	Deep Learning	PE	PE	3	45	-	-	45	90	40	60
3	26PEMCA323	Digital Image Processing	PE	PE	3	45	-	-	45	90	40	60
4	26PEMCA324	Bioinformatics	PE	PE	3	45	-	-	45	90	40	60
5	26PEMCA325	Social Network Analysis	PE	PE	3	45	-	-	45	90	40	60