

MCA - MASTER OF COMPUTER APPLICATIONS

Curriculum & Syllabus for Semester I and II

REGULATIONS 2024 (Academic Year 2024-25 Onwards)





K.S.R. COLLEGE OF ENGINEERING: TIRUCHENGODE – 637215
(Autonomous)
DEPARTMENT OF COMPUTER APPLICATIONS
M.C.A. – Master of Computer Applications
(Regulations – 2024)

Vision of the institution

IV	We envision to achieve status as an excellent educational institution in the global knowledge hub, making self-learners, experts, ethical and responsible engineers, technologists, scientists, managers, administrators and entrepreneurs who will significantly contribute to research and environment friendly sustainable growth of the nation and the world.
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Mission of the institution

IM 1	To inculcate in the students self-learning abilities that enable them to become competitive and considerate engineers, technologists, scientists, managers, administrators and entrepreneurs by diligently imparting the best of education, nurturing environmental and social needs.
IM 2	To foster and maintain a mutually beneficial partnership with global industries and institutions through knowledge sharing, collaborative research and innovation.

Vision of the Department/Programme: (Master of Computer Applications)

DV	To develop professionals having good knowledge, skills and attitude in the field of computer applications for the betterment of industry and society.
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Mission of the Department/Programme: (Master of Computer Applications)


DM 1	To provide high quality education in the field of computer applications and there by create computer professionals with proper leadership skills, commitment and moral values.
DM 2	To educate students to be successful, ethical, and effective problem-solvers and life-long learners who will contribute positively to the economic well-being of our region and nation.

Program Educational Objectives (PEOs) : (Master of Computer Applications)

PEO 1	Demonstrate high quality fundamental knowledge in varied sectors and have the ability to develop innovative software on emerging technologies and provide access to higher degree by research programs.
PEO 1	Work as teams on multi-disciplinary projects with effective communication skills, critical thinking, individual, team work and leadership qualities necessary to function productively and professionally.
PEO 1	Understand the social and ethical professionalism, public policy and aesthetics that allows them to develop sufficient awareness of the societal impact of technology and the life-long learning needed for a successful professional career as a scientist / technocrat / an entrepreneur.

Program Outcomes (POs) : (Master of Computer Applications)

PO 1	(Foundation Knowledge): Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.
PO 2	(Problem Analysis): Identify, review, formulate and analyse problems for primarily focussing on customer requirements using critical thinking frameworks.
PO 3	(Development of Solutions): Design, develop and investigate problems with as an innovative approach for solutions incorporating ESG/SDG goals.
PO 4	(Modern Tool Usage): Select, adapt and apply modern computational tools such as development of algorithms with an understanding of the limitations including human biases.
PO 5	(Individual and Teamwork): Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups. Use methodologies such as agile.
PO 6	(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.
PO 7	(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
PO 8	(Life-long learning): Change management skills and the ability to learn, keep up with contemporary technologies and ways of working.

		K.S.R. COLLEGE OF ENGINEERING (Autonomous) (Approved by AICTE & Affiliated to Anna University) K.S.R. Kalvi Nagar, Tiruchengode - 637 215						CURRICULUM PG R - 2024			
Department		Computer Applications									
Programme		Master of Computer Applications									
SEMESTER - I											
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks			
				L	T	P	C	CA	ES	Total	
THEORY COURSES											
1.	MA24T14	Mathematical Foundation for Computer Applications	FC	3	0	0	3	40	60	100	
2.	CA24T11	Advanced Data Structures and Algorithms	PCC	3	0	0	3	40	60	100	
3.	CA24T13	Advanced Database Management Systems	PCC	3	0	0	3	40	60	100	
4.	CA24T14	Python Programming	PCC	3	0	0	3	40	60	100	
5.	CA24T15	Research Methodology and IPR	RMC	3	0	0	3	40	60	100	
THEORY COURSES WITH LABORATORY COMPONENT											
6.	CA24T12	Computer Networks and Management	PCC	3	0	2	4	50	50	100	
LABORATORY COURSES											
7.	CA24P11	Advanced Data Structures and Algorithms Laboratory	PCC	0	0	4	2	60	40	100	
8.	CA24P12	Advanced Database Management Systems Laboratory	PCC	0	0	4	2	60	40	100	
9.	CA24P13	Python Programming Laboratory	PCC	0	0	4	2	60	40	100	
Total				18	0	14	25	900			


SEMESTER - II										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P	C	CA	ES	Total
THEORY COURSES										
1.	CA24T21	Advanced Java Programming	PCC	3	0	0	3	40	60	100
2.	CA24T22	Internet of Things	PCC	3	0	0	3	40	60	100
3.	CA24T23	Artificial Intelligence and Machine Learning	PCC	3	1	0	4	40	60	100
4.	CA24T24	Full Stack Development	PCC	3	0	0	3	40	60	100
5.		Professional Elective I	PEC	3	0	0	3	40	60	100
6.		Professional Elective II	PEC	3	0	0	3	40	60	100
LABORATORY COURSES										
7.	CA24P21	Internet of Things Laboratory	PCC	0	0	4	2	60	40	100

8.	CA24P22	Advanced Java Programming Laboratory	PCC	0	0	4	2	60	40	100
9.	CA24P23	Full Stack Development Laboratory	PCC	0	0	4	2	60	40	100
Total				18	1	12	25	900		

SEMESTER – III										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P	C	CA	ES	Total
THEORY COURSES										
1.	CA24T31	Cloud Computing	PCC	3	0	0	3	40	60	100
2.	CA24T32	Big Data Analytics	PCC	3	0	0	3	40	60	100
3.	CA24T33	Software Testing & Quality Assurance	PCC	3	0	0	3	40	60	100
4.	CA24T34	Cryptography and Network Security	PCC	3	0	0	3	40	60	100
5.		Professional Elective III	PEC	3	0	0	3	40	60	100
LABORATORY COURSES										
6.	CA24P31	Cloud Computing Laboratory	PCC	0	0	4	2	60	40	100
7.	CA24P32	Big Data Analytics Laboratory	PCC	0	0	4	2	60	40	100
8.	CA24P33	Mobile Application Development Laboratory	PCC	0	0	4	2	60	40	100
Total				15	0	12	21	800		


SEMESTER – IV										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P	C	CA	ES	Total
EMPLOYABILITY ENHANCEMENT COURSES										
1.	CA24P41	Project work	EEC	0	0	24	12	60	40	100
Total				0	0	24	12	100		

Total Credits: 83

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Department		Computer Applications								
Programme		Master of Computer Applications								
List of Electives										
PROFESSIONAL ELECTIVE - I										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
1.	MA24E01	Probability and Statistics	PEC	3	0	0	3	40	60	100
2.	CA24E01	TCP/IP	PEC	3	0	0	3	40	60	100
3.	CA24E02	Unix and Network Programming	PEC	3	0	0	3	40	60	100
4.	CA24E03	Web Programming Essential	PEC	3	0	0	3	40	60	100
5.	CA24E04	Middleware Technology	PEC	3	0	0	3	40	60	100
6.	CA24E05	Devops	PEC	3	0	0	3	40	60	100
7.	BA24E51	Health Care Information Systems	PEC	3	0	0	3	40	60	100

PROFESSIONAL ELECTIVE - II										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
1.	MA24E02	Resource Management Techniques	PEC	3	0	0	3	40	60	100
2.	CA24E06	Software Project Management	PEC	3	0	0	3	40	60	100
3.	CA24E07	Advanced Operating Systems	PEC	3	0	0	3	40	60	100
4.	CA24E08	E-Learning Techniques	PEC	3	0	0	3	40	60	100
5.	CA24E09	Soft Computing	PEC	3	0	0	3	40	60	100
6.	CA24E10	Object Oriented Analysis and Design	PEC	3	0	0	3	40	60	100
7.	BA24E52	Organizational Behavior	PEC	3	0	0	3	40	60	100

PROFESSIONAL ELECTIVE - III										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
1.	CA24E11	M-Commerce	PEC	3	0	0	3	40	60	100
2.	CA24E12	Block Chain Technology	PEC	3	0	0	3	40	60	100
3.	CA24E13	Robotic Process Automation	PEC	3	0	0	3	40	60	100
4.	CA24E14	Data Visualization Techniques	PEC	3	0	0	3	40	60	100
5.	CA24E15	Data Science	PEC	3	0	0	3	40	60	100
6.	CA24E16	Deep Learning	PEC	3	0	0	3	40	60	100
7.	CA24E17	Mobile Computing	PEC	3	0	0	3	40	60	100

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	Department	Computer Applications	
	Programme	Master of Computer Applications	

BRIDGE COURSES

BRIDGE COURSES (SEMESTER - I)							
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit
				L	T	P	C
01	BC5001	Computer Fundamentals	BC	2	0	0	0
02	BC5002	Problem Solving and Programming in C	BC	2	0	0	0
BRIDGE COURSES (SEMESTER -II)							
04	BC5003	Core Java Programming	BC	2	0	0	0
05	BC5004	Software Engineering	BC	2	0	0	0

Master of Computer Applications						
S.No.	Subject Area	Credit Per Semester				Credits Total
		Semester 1	Semester II	Semester III	Semester 4	
1	FC	3				3
2	PCC	19	19	18		56
3	PEC		6	3		9
4	EEC				12	12
5	RMC	3				3
Total		25	25	21	12	83
FC – Foundation Course, PC – Professional Core Courses, PE – Professional Elective Courses, EEC – Employability Enhancement Courses, RMC -Methodology and IPR Courses						