COIMBATORE INSTITUTE OF TECHNOLOGY

(Government Aided Autonomous Institution Affiliated to Anna University, Chennai)

COIMBATORE - 641 014, TAMILNADU, INDIA

DIAMOND JUBILEE

(1956 - 2016)

Department of Computer Applications

Master of Computer Applications

Curriculum and Syllabi

Under Choice Based Credit System

(For the students admitted during 2018 - 2019 and onwards)

COIMBATORE INSTITUTE OF TECHNOLOGY

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VISION AND MISSION OF THE INSTITUTE

VISION

The Institute strives to inculcate a sound knowledge in Engineering along with realized social responsibilities to enable its students to combat the current and impending challenges faced by our country and to extend their expertise to the global arena.

MISSION

The Mission of CIT is to impart high quality education and training to its students to make them World-Class Engineers with a foresight to the changes and problems, and pioneers to offer innovative solutions to benefit the nation and the world at large.

DEPARTMENT OF COMPUTER APPLICATIONS

COIMBATORE INSTITUTE OF TECHNOLOGY

VISION AND MISSION

VISION

The Department of Computer Applications strives to groom students with diverse backgrounds into competitive software professionals and pioneering leaders in offering innovative solutions to dynamic global challenges in tune with the needs of the society.

MISSION

The Mission of Department of Computer Application is to :

M1 Provide an environment for students to gain expertise in theoretical foundations of computer applications with emphasis on strong practical training that will enable them to develop real world applications catering to the global needs.

M2 Offer students a quality learning process in a research oriented environment with industrial collaboration that motivates them to innovate and explore.

M3 Develop intellectual curiosity and a commitment to lifelong learning in students, with societal and environmental concerns.

DEPARTMENT OF COMPUTER APPLICATIONS

COIMBATORE INSTITUTE OF TECHNOLOGY

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs for MCA programme are designed based on the Department Mission.

MCA Graduates will be able to :

PEO 1 : Develop software solutions to problems across a broad range of application domains throughanalysis and design.

PEO 2 : Contribute to research of their chosen field and function and communicate effectively, toperform both individually and in a multi-disciplinary team.

PEO 3 : Continue the process of life-long learning through professional activities; adapt themselveswith ease to new technologies, while exhibiting high ethical and professional standards.

DEPARTMENT OF COMPUTER APPLICATIONS

COIMBATORE INSTITUTE OF TECHNOLOGY

PROGRAMME OUTCOMES (POs)

The following are Programme Outcomes for the MCA Programme :

PO1 : Graduates will be able to apply knowledge of computing fundamentals, computing specializationand domain knowledge for the abstraction and conceptualization of computing models from defined problems and requirements.

PO2 : Graduates will have the ability to understand and analyze a given real-world problem andpropose feasible computing solutions.

PO3 : Graduates will be able to analyze customer requirements, create high level design, implementand document robust and reliable software systems.

PO4 : Graduates will be able to transform complex business scenarios and contemporary issues intoproblems, investigate, understand and propose integrated solutions using emerging technologies.

PO5 : Graduates will be able to use the techniques, skills and modern hardware and software toolsnecessary for innovative software solutions.

PO6 : Graduates will possess leadership and managerial skills with best professional ethical practicesand social concern.

PO7 : Graduates will recognize the need for self-motivation to engage in lifelong learning.

PO8 : Graduates will be able to master fundamental project management skills, concepts andtechniques, set attainable objectives and ensure positive results, meeting scope, time and budget constraints.

PO9 : Graduates will be able to communicate technical information effectively, both orally and inwriting

PO10 : Graduates will be able to recognize the social, professional, cultural, and ethical issues involvedin the use of computer technology and give them due consideration in developing software systems.

PO11 : Graduates will be able to work collaboratively as a member or leader in multidisciplinary teams.

PO12 : Graduates will be able to assess the need for innovation and initiate the process throughentrepreneurship or otherwise.

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MASTER OF COMPUTER APPLICATIONS

Curriculum from the Academic Year 2018 - 2021 onwards

Semester I

Course Code	Course Name	L	T	P	C
	THEORY				
18MCA11	Theory of Computing	3	0	0	3
18MCA12	Data Structures	3	0	0	3
18MCA13	Programming in C	3	0	0	3
18MCA14	Computer Organization	3	0	0	3
18MCA15	Probability and Statistics	3	0	0	3
	PRACTICALS				
18MCA16	C Programming Lab	0	0	4	2
18MCA17	User Experience Lab	0	0	4	2
18MCA18	Statistics Lab	0	0	4	2
18MCA19*	Communication Skills	2	0	0	2
	TOTAL CREDITS				**23**

Semester II

Course Code	**Course Name**	**L**	**T**	**P**	**C**
	THEORY				
18MCA21	Design and Analysis of Algorithms	3	0	0	3
18MCA22	Object Oriented Principles and Programming in JAVA	3	0	0	3
18MCA23	Principles of Operating System	3	0	0	3
18MCA24	Database Management Systems	3	0	0	3
18MCA25	Software Engineering	3	0	0	3
	PRACTICAL				
18MCA26	Algorithms and Operating Systems Lab	0	0	4	2
18MCA27	Object Oriented Programming Lab	0	0	4	2
18MCA28	RDBMS Lab	0	0	4	2
18MCA29*	Professional English				
	TOTAL CREDITS				**21**

Semester III

Course Code	Course Name	L	T	P	C
	THEORY				
18MCA31	Numerical Methods and Applied Statistics	4	0	0	4
18MCA32	Computer Networks	3	0	0	3
18MCA33	Artificial Intelligence	3	0	0	3
18MCA34	SOA and Web Services	3	0	0	3
	Elective I	3	0	0	3
	PRACTICAL				
18MCA35	Advanced Programming Lab	0	0	4	2
18MCA36	Artificial Intelligence Lab	0	0	4	2
18MCA37	Network Programming Lab	0	0	4	2
18MCA38*	Personality Development				
	TOTAL CREDITS				**22**

Semester IV

Course Code	Course Name	L	T	P	C
	THEORY				
18MCA41	Operations Research	4	2	0	4
18MCA42	Data Mining and Warehousing	3	0	0	3
18MCA43	Accounting and Financial Management	4	0	0	4
	Elective II	3	0	0	3
	Elective III	3	0	0	3
	PRACTICAL				
18MCA44	Data Mining Lab	0	0	4	2
	Elective Lab	0	0	4	2
18MCA45	Mini Project	0	0	4	2
	TOTAL CREDITS				**22**

Semester V

Course Code	Course Name	L	T	P	C
	THEORY				
18MCA51	Software Testing and Quality Assurance	3	0	0	3
18MCA52	Cryptography and Network Security	3	0	0	3
	Elective IV	3	0	0	3
	Elective V	3	0	0	3
	Elective VI	3	0	0	3
	PRACTICAL				
18MCA53	Software Testing Lab	0	0	4	2
18MCA54	Cloud Computing and Security Lab	0	0	4	2
18MCA55*	Professional Ethics				
	TOTAL CREDITS				**19**

Semester VI

Course Code	Course Name	L	T	P	C
18MCA61	Project work and Viva voce				18
	TOTAL CREDITS				**123**

PROFESSIONAL ELECTIVES - Theory Subjects

Course Code	**Course Name**	**L**	**T**	**P**	**C**
	Information Technology Electives				
18MCAE01	Virtualization and Cloud Computing	3	0	0	3
18MCAE02	Graphics and Multimedia	3	0	0	3
18MCAE03	Advanced Database Management Systems	3	0	0	3
18MCAE04	Distributed Systems	3	0	0	3
18MCAE05	Grid and Cluster Computing	3	0	0	3
18MCAE06	Internet of Things	3	0	0	3
18MCAE07	Software Metrics and Measurement	3	0	0	3
18MCAE08	Agile Methods for Software Development	3	0	0	3
18MCAE09	Open Source Ecosystem	3	0	0	3
18MCAE10	Software Architecture and Design Patterns	3	0	0	3
18MCAE11	Enterprise Management and Computing	3	0	0	3
18MCAE12	Basics of Robotics	3	0	0	3
18MCAE13	GPU and Parallel Programming	3	0	0	3
18MCAE14	Digital Image Processing	3	0	0	3
	Management Electives				
18MCAE15	Organizational Behavior	3	0	0	3
18MCAE16	Principles of Management	3	0	0	3
18MCAE17	Principles of Environmental Science	3	0	0	3
18MCAE18	E-Commerce	3	0	0	3

18MCAE19	Decision Making	3	0	0	3
18MCAE20	Entrepreneurship Development	3	0	0	3
	Financial Technology Electives				
18MCAE21	E-Portfolio Management	3	0	0	3
18MCAE22	Financial Techniques and Analysis	3	0	0	3
	Data Science Electives				
18MCAE23	Machine Learning	3	0	0	3
18MCAE24	Data Analytics	3	0	0	3
18MCAE25	Business Intelligence	3	0	0	3
18MCAE26	Natural Language Processing	3	0	0	3
18MCAE27	Social Network Analysis	3	0	0	3
18MCAE28	Intelligent Information Retrieval	3	0	0	3
18MCAE29	Big Data Technologies	3	0	0	3
	Networking Technology Electives				
18MCAE30	Ad Hoc Networks	3	0	0	3
18MCAE31	Internetworking Protocols and Management	3	0	0	3
18MCAE32	Mobile Computing	3	0	0	3
	Language Electives				
18FY22F	Basic French				
18FY22G	Basic German				

PROFESSIONAL ELECTIVES - Labs

Course Code	Course Name	L	T	P	C
18MCAEL01	Mobile Application Development Lab	0	0	4	2
18MCAEL02	Graphics and Multimedia Lab	0	0	4	2
18MCAEL03	Internet of Things Lab	0	0	4	2
18MCAEL04	NLP and SNA Lab	0	0	4	2

OPEN ELECTIVES

Course Code	Course Name	L	T	P	C
18MCAOE01	Accounting and Financial Management	3	0	0	3
18MCAOE02	Basics of Java Programming	3	0	0	3
18MCAOE03	C# and Dot Net Programming	3	0	0	3
18MCAOE04	Python Programming	3	0	0	3
18MCAOE05	Data Mining and Warehousing	3	0	0	3
18MCAOE06	Natural Language Processing	3	0	0	3
18MCAOE07	Social Network Analysis	3	0	0	3

* Pass is required