

MCA STUDY SCHEME (FOR 2023-25 Batch)

Course Type	Course Name	Course Code	L	T	P	Total	Int marks	Ext marks	Total	Duration of Exam	Credits
Core	Research Innovation Catalyst-I	MCA-RIC-I		1		1	50		50	-	1
Core	Linear Algebra & Statistical Techniques	MCA-DS-110	3			3	100	100	200	3	3
Core	Data Structures	MCA-DS-111	3			3	100	100	200	3	3
Core	Object oriented programming in Java	MCA-DS-112	3			3	100	100	200	3	3
Core	Python Programming	MCA-DS-113	2			2	100	100	200	3	3
Core	Data Structures Lab	MCA-DS-161			2	2	50	50	100	2	2
Core	Object oriented programming in Java Lab	MCA-DS-162			2	2	50	50	100	2	2
Core	Python Programming Lab	MCA-DS-163			2	2	50	50	100	2	2
Domain Elective	Elective-I		2			2	100	100	200	3	3
Domain Elective	Elective-II		2	1	1	2	100	100	200	3	3
Core	Placement Competency Enhancement -I	CDC 511		4		4	50	50	100	2	2
Bridge	Fundamentals of Computer Programming	MCA-DS-001	2			2	100	100	200	3	3
Bridge	Elements of Mathematics	MCA-DS-002	2			2	100	100	200	3	3
Total Credits											24

Semester-I

	General	Cloud Computing	Artificial Intelligence	Cyber Security	FSD	Mobile Computing	Multimedia
ELECTIVE -I	MATLAB (MCA-DS-115)	Cryptography (MCA-CC-001)	Introduction to Machine Learning. (MCA-AI-001)	Network Security (MCA-CS-001)	Gaming Technology – I (MCA-FSD-001)	Mobile Computing Basics (MCA-MC-001)	Digital methods I: Photoshop, Illustrator (MCA-MM-001)
	Soft Programming (MCA-DS-116)	Cloud Computing (MCA-CC-002)	Probabilistic Modeling & Reasoning (MCA-AI-002)	Cyber Security (MCA-CS-002)	Angular (MCA-FSD-002)	Mobile Software Technologies. (MCA-MC-002)	Animation Fundamentals (MCA-MM-002)
		IoT	Data Science	Block Chain	DevOps	Networking	Gaming with AR VR
ELECTIVE -II	Basics of E-Commerce (MCA-DS-117)	IoT Basics and Technology (MCA-IOT-001)	Probability and Statistics (MCA-DaS-001)	Introduction to block chain (MCA-BC-001)	DevOps Essentials (MCA-DO-001)	Computer Architecture & Microprocessor (MCA-CN-001)	Augmented Reality Foundations (MCA-AR-001)

	Introduction to Open Source Software and Open Standards (MCA-DS-118)	Hardware Architectures (MCA-IOT-002)	SQL for Data Science (MCA-DaS-002)	Block chain platform (MCA-BC-002)	AWS Services (MCA-DO-002)	Routing Protocols and Architectures (MCA-CN-002)	Animation and Rendering Techniques (MCA-AR-002)
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Semester-II

Course Type	Course Name	Course Code	L	T	P	Total	Int marks	Ext marks	Total	Duration of Exam	Credits
Fundamentals	Research Innovation Catalyst-II	MCA-RIC-II		1		1	50		50	-	0.5
Core	Data Communications	MCA-DS-210	3			3	100	100	200	3	3
Core	Analysis & Design of Algorithm	MCA-DS-211	3			3	100	100	200	3	3
Core	Introduction to Artificial Intelligence	MCA-DS-212	3			3	100	100	200	3	3
Core	Vocational Training	MCA-DS-213					100		100	2	2
Core	R Programming Lab	MCA-DS-263			2	2	50	50	100	2	1
Core	Android Application Development Lab	MCA-DS-264			2	2	50	50	100	2	1
Fundamentals	Placement Competency Enhancement-II	CDC 512		4		2	50	50	100	2	2
Domain Elective	Elective-III		2			2	100	100	200	3	2
Domain Elective	Elective-IV		2	1	1	2	100	100	200	3	2
Total Credits											19.5

	General	Cloud Computing	Artificial Intelligence	Cyber Security	FSD	Mobile Computing	Multimedia
Elective - III	Computer Graphics (MCA-DS-214)	Cloud Application Development (MCA-CC-003)	Advanced AI and ML Techniques (MCA-AI-003)	Cryptographic (MCA-CS-003)	Gaming Technology -II (MCA-FSD-003)	Automotive Computing (MCA-MC-003)	Compositing and Visual Effect (MCA-MM-003)
	Web Applications Development using PHP (MCA-DS-215)	Cloud Management (MCA-CC-004)	Web Applications using MLT. (MCA-AI-004)	Ethical Hacking. (MCA-CS-004)	Advanced Web Technologies. (MCA-FSD-004)	Mobile games (MCA-MC-004)	Modelling & Texturing (MCA-MM-004)
		IoT	Data Science	Block Chain	DevOps	Networking	Gaming with AR VR
Elective - IV	Advance Database Systems (MCA-DS-216)	Communication technologies in IoT (MCA-IOT-003)	Statistical Methods in Decision Making (MCA-DaS-003)	Blockchain architecture (MCA-BC-003)	Containerization with Docker (MCA-DO-003)	Networking Devices. (MCA-CN-003)	3D Models for Augmented and Virtual Reality (MCA-AR-003)

	Social Network Analytics (MCA-DS-217)	Software & Programming in IoT (MCA-IOT-004)	Data Visualization (MCA-DaS-004)	Theory of Computation (MCA-BC-004)	DevOps Process Simulation (MCA-DS-004)	Hardware Interface (MCA-CN-004)	VR and 360 Video Production (MCA-AR-004)
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Semester-III

Course Type	Course Name	Course Code	L	T	P	Total	Int marks	Ext marks	Total	Duration of Exam	Credits
Fundamentals	Research Innovation Catalyst-III	MCA-RIC-III		2	2		100		100	-	1
Core	Data Mining and warehousing	MCA-DS-310	3			3	100	100	200	3	3
Core	Software Engineering & Testing	MCA-DS-311	3			3	100	100	200	3	3
Core	Operations Research	MCA-DS-312	3			3	100	100	200	3	3
Core	Big Data Analytics	MCA-DS-314	2	1	1	2	100	100	200	3	2
Domain Elective	Elective-V		2			2	100	100	200	3	2
Domain Elective	Elective-VI		2			2	100	100	200	3	2
Core	Data Mining Lab	MCA-DS-360			2	2	50	50	100	2	1
Core	Big Data Analytics Lab	MCA-DS-364			2	2	50	50	100	2	1
Total Credits											18

	General	Cloud Computing	Artificial Intelligence	Cyber Security	FSD	Mobile Computing	Multimedia
Elective-V	Automata Theory (MCA-DS-316)	Cloud Threat Intelligence (MCA-CC-005)	Neural Networks and Deep Learning (MCA-AI-005)	Cyber Forensics (MCA-CS-005)	Agile, Design thinking and DevOps (MCA-FSD-005)	Smart Energy (MCA-MC-005)	Acting and Choreography (MCA-MM-005)
	Compiler Design (MCA-DS-317)	Cloud Vulnerability Analysis. (MCA-CC-006)	IoT with machine Learning (MCA-AI-006)	Web Application Security (MCA-CS-006)	Automated Testing Using Selenium. (MCA-FSD-006)	Logistics (MCA-MC-006)	Digital Character Animation (MCA-MM-006)
	General	IoT	Data Science	Block Chain	DevOps	Networking	Gaming with AR VR
Elective-VI	Multimedia Basics (MCA-DS-318)	IoT Security Management (MCA-IOT-005)	Predictive Analytics using Machine Learning (MCA-DaS-005)	Applications of Blockchain-Cryptocurrencies (MCA-BC-005)	Continuous integration & Version Control (MCA-DO-005)	Advanced Computer Network (MCA-CN-005)	Game Design Fundamentals (MCA-AR-005)

	Software Project Management (MCA-DS-319)	Data Management in IoT (MCA-IOT-006)	Time series Analytics-I (MCA-DaS-006)	Smart Contract Development (MCA-BC-006)	Web Application on Cloud (MCA-DO-006)	Network Management (MCA-CN-006)	Immersive Technology and Media (AR/VR) (MCA-AR-006)
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Semester-IV

Course Type	Course Name	Course Code	L	T	P	Total	Int marks	Ext marks	Total	Duration of Exam	Credits
Core	Introduction to .NET	MCA-DS-410	3			3	100	100	200	3	3
Core	Advanced Java	MCA-DS-411	3			3	100	100	200	3	3
Core	Introduction to .NET Lab	MCA-DS-460		4		4	50	50	100	2	2
Core	Advanced Java Lab	MCA-DS-461		2		2	50	50	100	2	1
Domain Elective	Elective-VII		2			2	100	100	200	3	2
Domain Elective	Elective-VIII		2			2	100	100	200	3	2
Core	Project	MCA-DS-462			10		300	200	500	2	5
OR											
Core	Major Project	MCA-DS-463	20-22 Week Industrial Training				600	300	900	-	18
Total Credits											18

	General	Cloud Computing	Artificial Intelligence	Cyber Security	FSD	Mobile Computing	Multi AR
Elective-VII	Digital Image Processing (MCA-DS-412)	Defensive Cyber Security Technologies (MCA-CC-007)	Machine Learning and Pattern Recognition (MCA-AI-007)	Cyber Laws (MCA-CS-007)	React JS (MCA-FSD-007)	Ambient Assisted Living/Mobile Health (MCA-MC-007)	Me Prod (MCA-I)
	Software API processes (MCA-DS-413)	Ethics and standard of cloud. (MCA-CC-008)	Business Intelligence (MCA-AI-008)	Information Security and Research (MCA-CS-008)	Cloud Security (MCA-FSD-008)	Mobile Infotainment (MCA-MC-008)	Multi Sec (MCA-I)
		IoT	Data Science	Block Chain	DevOps	Networking	Gaming AR

Elective-VIII	Decision Support System (MCA-DS-414)	Sensors, Actuators and Signal Processing (MCA-IOT-007)	Text Mining (MCA-DaS-007)	Spring framework (MCA-BC-007)	DevOps Software Engineering (MCA-DO-007)	Network Protocol (MCA-CN-007)	Virtual Inter Appli a Design R-C
	Simulation Modelling (MCA-DS-415)	IoT Applications (MCA-IOT-008)	Time series Analytics-II (MCA-DaS-008)	Introduction to cryptography (MCA-BC-008)	DevOps Project Management (MCA-DO-008)	TCP/IP (MCA-CN-008)	Inter Appli Develo (MCA-7

Note: For Successful completion of the MCA degree, the students need to earn the credits as per the following:

(a) For Major Project : 64 credits of compulsory courses and at least 16 of Elective Courses.

(b) For Semester Option: 60 credits of compulsory courses and at least 20 of Elective Courses