



**BRAINWARE UNIVERSITY**  
**SCHOOL OF COMPUTATIONAL & APPLIED SCIENCES**  
**DEPARTMENT OF COMPUTATIONAL SCIENCE**  
**Master of Computer Application**  
**Curriculum Structure 2020**

**SEMESTER – I**

Course Code	Course Name	L – T – P	Credits	Total Marks
MCA101	Fundamental of Computers & Emerging Technologies	4 – 0 – 0	4	100
MCA102	Principles of Programming using C	3 – 1 – 0	4	100
MCA103	Computer Architecture and Microprocessor	4 – 0 – 0	4	100
MCA104	Discrete Mathematics	3 – 1 – 0	4	100
MCA(MC)105	Principles of Management	3 – 1 – 0	4	100
MCA(HU)191	Communication Lab	0 – 0 – 4	2	100
MCA192	Principles of Programming Using C Lab	0 – 0 – 4	2	100
MCA193	Computer Architecture and Microprocessor Lab	0 – 0 – 4	2	100
<b>Total</b>			<b>26</b>	<b>800</b>

**SEMESTER – II**

Course Code	Course Name	L – T – P	Credits	Total Marks
MCA201	Object Oriented Programming Using Java	3 – 1 – 0	4	100
MCA202	Operating Systems	3 – 1 – 0	4	100
MCA203	Database Management Systems	3 – 1 – 0	4	100
MCA204	Design and analysis of algorithms	3 – 1 – 0	4	100
MCA205	Formal language and automata theory	3 – 1 – 0	4	100
MCA291	Object Oriented Programming Using Java Lab	0 – 0 – 4	2	100
MCA293	DBMS Lab	0 – 0 – 4	2	100
MCA294	Design and analysis of algorithm Lab	0 – 0 – 4	2	100
<b>Total</b>			<b>26</b>	<b>800</b>



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**SEMESTER – III**

Course Code	Course Name	L – T – P	Credits	Total Marks
MCA301	Data Communication & Computer Networks	4 – 0 – 0	4	100
MCA302	Artificial Intelligence	4 – 0 – 0	4	100
MCA303	Software Engineering and TQM	4 – 0 – 0	4	100
MCA304 (Elective – I)	A. Cryptography & Network Security	4 – 0 – 0	4	100
	B. Cloud Computing			
MCA305 (Elective – II)	A. Big Data Analysis	4 – 0 – 0	4	100
	B. Image Processing			
MCA392	Artificial Intelligence Lab	0 – 0 – 4	2	100
MCA393	Software Engineering and TQM Lab	0 – 0 – 4	2	100
MCA381	Minor Project	0 – 0 – 2	1	100
MCA382	Industrial training		1	100
	<b>Total</b>		<b>26</b>	<b>900</b>

**SEMESTER – IV**

Course Code	Course Name	L – T – P	Credits	Total Marks
MCA401 (Elective 3)	A. Machine Learning	4 – 0 – 0	4	100
	B. Data science			
MCA402 (Elective 4)	A. Internet of things	4 – 0 – 0	4	100
	B. Embedded System Development			
MCA403 (Elective 5)	A. Mobile computing	4 – 0 – 0	4	100
	B. Natural language processing			
MCA491 (Elective 3)	A. Machine Learning Lab	0 – 0 – 4	2	100
	B. Data science Lab			
MCA492 (Elective 4)	A. Internet of things Lab	0 – 0 – 4	2	100
	B. Embedded System Development Lab			
MCA481	Major project	0 – 0 – 12	6	100
MCA482	Grand Viva		4	100
	<b>Total</b>		<b>26</b>	<b>700</b>