

**SYLLABUS STRUCTURE
(Effective from academic session 2023-24)**

FOR THE DEGREE

OF

**Master of Computer Applications
(MCA)**

**Four-Semester Full Time
Programme**

SCHOOL OF BASIC SCIENCES



**MANIPAL UNIVERSITY
JAIPUR**

ELIGIBILITY OF THE CANDIDATES:

Passed BCA / bachelor's degree in computer science engineering or equivalent Degree.

OR

Passed B.Sc./ B.Com./ B.A. with Mathematics at 10+2 level or at Graduation Level (with additional bridge courses as per the norms of the concerned university).

Obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying examination.

Program specific outcomes for Bachelor of Computer applications (BCA) program:

- [PSO.1.]** To work productively as IT professional both at supportive and leadership roles.
- [PSO.2.]** To advance successfully in their chosen career path utilizing technical abilities, leadership qualities, communication and interpersonal skills with high regard to legal and ethical responsibilities.
- [PSO.3.]** To build their profession adaptable to the changes in the technology with lifelong learning.

YEAR	FIRST SEMESTER						SECOND SEMESTER					
	Course Code	Subject Name	L	T	P	C	Course Code	Subject Name	L	T	P	C
I	XXXXXXXX	Discrete Mathematical Structures with Graph Theory	3	1	0	4	CAP6201	Computer Networks & Protocols	3	1	0	4
	CAP6101	Web Technologies	3	1	0	4	CAP6202	Object Oriented Programming using JAVA	3	1	0	4
	CAP6102	Programming & Problem-Solving using C	3	1	0	4	CAP6203	Operating System	3	1	0	4
	CAP6103	Relational Database Management Systems	3	1	0	4	CAP6204	Data Structures and Algorithms	3	1	0	4
	CAP6104	Data Visualization	3	1	0	4	CAP62XX	Program Elective-I	3	0	0	3
	CAP6130	Web Technology Lab	0	0	2	1	CAP6230	Object Oriented Programming using Java LAB	0	0	2	1
	CAP6131	Programming & Problem-Solving using C Lab	0	0	2	1	CAP6231	Data Structures and Algorithms Lab	0	0	2	1
	CAP6132	Relational Database Management Systems Lab	0	0	2	1	CAP6232	Pragmatic Learning	0	0	2	1
							CAP6210	Aptitude & Technical Development	1	1	0	2
		15	5	6	23			16	5	6	24	
	Total Contact Hours (L+T+P)			26			Total Contact Hours (L+T+P) + OE			27		
YEAR	THIRD SEMESTER						FOURTH SEMESTER					
	Course Code	Subject Name	L	T	P	C	Course Code	Subject Name	L	T	P	C
II	CAP7101	Unix & Shell Programming	3	1	0	4	CAP7270	Major Project	0	0	0	16
	CAP7102	Android Application Development	3	1	0	4						
	CAP7103	Software Engineering & Project Management	3	1	0	4						
	CAP71XX	Program Elective-II	3	0	0	3						
	CAP71XX	Program Elective-III	3	0	0	3						
	CAP7170	Minor Project	0	0	4	2						
	CAP7171	Unix & Shell Programming Lab	0	0	2	1						
	CAP7172	Android Application Development Lab	0	0	2	1						

		15	3	8	22		0	0	0	16
	Total Contact Hours (L+T+P)	26				Total Contact Hours (L+T+P)	00			
Total Credit= 85										

Program Electives – I

CAP6240 CRYPTOGRAPHY AND NETWORK SECURITY

CAP6241 ARTIFICIAL INTELLIGENCE

CAP6242 INTERNET OF THINGS

Program Electives – II

CAP7140 DATA MINING TECHNIQUES

CAP7141 CLOUD COMPUTING & INFRASTRUCTURE SERVICES

CAP7142 ADVANCED COMPUTER NETWORKS

Program Electives – III

CAP7143 ADVANCES IN MACHINE LEARNING

CAP7144 BLOCKCHAIN TECHNOLOGIES

CAP7145 DATA SCIENC

