SYLLABUS STRUCTURE
(Effective from academic session 2023-24)

FOR THE DEGREE

OF

Bachelor of Computer Applications
(BCA)
Specialization - Cyber Security

Six-Semester Full Time
Programme

SCHOOL OF BASIC SCIENCES

MANIPAL UNIVERSITY JAIPUR
INSPIRED BY LIFE

ELIGIBILITY OF THE CANDIDATES:

The candidate must have passed 10+2 or A level or IB examination in any discipline with at least 50% marks in aggregate.

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

[PSO.1.]   Prepare professionally trained in the areas of programming, databases, software engineering, web- designing and networking and other completer application areas to acquire knowledge in various domain-based prospects

[PSO.2.]   Encourage to communicate effectively and to improve their competency skills to solve real time problems

[PSO.3.]   Clarity on both conceptual and application-oriented skills of Computer Applications in Business context.

YEAR	FIRST SEMESTER						SECOND SEMESTER					
	Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C
I	XXXXXXX	Fundamentals of Mathematics	3	1	0	4	XXXXXXX	Basic Statistics and Probability	3	1	0	4
	LLC1108	Technical Communication	2	0	0	2	CAP1201	Data Structures	3	1	0	4
	CAP1101	C Programming	3	1	0	4	CAP1202	Database Management System	3	1	0	4
	CAP1102	Fundamentals of Computers & Digital Systems	3	1	0	4	CAP1203	Principle of Programming Languages	3	1	0	4
	CAP1103	Introduction to Web Programming	3	1	0	4	CAP1204	Object-Oriented Programming using C++	3	1	0	4
	CAP1130	C Programming Lab	0	0	2	1	CAP1230	Database Management System Lab	0	0	2	1
	CAP1131	Web Programming Lab	0	0	2	1	CAP1231	Data Structures using C++ Lab	0	0	2	1
			14	4	4	20			15	5	4	22
	Total Contact Hours (L + T + P)		22				Total Contact Hours (L + T + P)		24			

YEAR	THIRD SEMESTER						FOURTH SEMESTER					
II	Course Code	Subject Name	L	T	P	C	Course Code	Subject Name	L	T	P	C
	CAP2101	Computer Organization and Architecture	3	1	0	4	CAP2201	Python Programming	3	1	0	4
	CAP2102	Java Programming	3	1	0	4	CAP2202	Software Engineering	3	1	0	4
	CAP2103	Data Communication & Protocols	3	1	0	4	CAP2203	Data Mining & Visualization	3	1	0	4
	CAP2104	Operating Systems	3	1	0	4	CAP2204	Introduction to Network Security	3	1	0	4
	CAP2106	Introduction of Cyber Security	3	1	0	4	XXXXXXX	Open Elective / MOOC	3	0	0	3
	CAP2130	Java Programming Lab	0	0	2	1	CAP2230	Python Programming Lab	0	0	2	1
	CAP2131	Operating System Lab	0	0	2	1	CAP2232	Network Security Lab	0	0	2	1
							XXXXXX	Environmental Science	2	0	0	2
			15	5	4	22			17	4	4	23
	Total Contact Hours (L+T+P)		24				Total Contact Hours (L+T+P) + OE		25			
YEAR	FIFTH SEMESTER						SIXTH SEMESTER					
III	Course Code	Subject Name	L	T	P	C	Course Code	Subject Name	L	T	P	C
	CAP3101	Mobile Application Development	3	1	0	4	CAP3201	Wireless Communication	3	1	0	4
	CAP3102	Machine Learning	3	1	0	4	CAP3202	Unix and Shell Programming	3	1	0	4
	CAP3104	Information Security and Systems	3	1	0	4	CAP3204	Cyber Physical System	3	1	0	4
	CAP31XX	Program Elective-I	3	0	0	3	CAP32XX	Program Elective-II	3	0	0	3
	CAP3130	Mobile Application Development Lab	0	0	2	1	CAP3230	Unix and Shell Programming Lab	0	0	2	1
	CAP3131	Machine Learning Lab	0	0	2	1	CAP3270	Major Project	0	0	6	3
	CAP3170	Minor Project	0	0	4	2						
	CAP3110	Aptitude and Technical Development	1	1	0	2						
			13	4	8	21			12	3	8	19
	Total Contact Hours (L+T+P)		25				Total Contact Hours (L+T+P)		23			
Total Credit= 127 (including first year)												

Program Elective - I

CAP3140 INTERNET OF THINGS

CAP3143 CYBER LAW

CAP3144 CLOUD SECURITY

Program Elective - II

CAP3243 ETHICAL HACKING

CAP3244 WIRELESS SECURITY

CAP3245 CYBER FORENSICS