SYLLABUS STRUCTURE

(Effective from academic session 2023-24)

FOR THE DEGREE OF Bachelor of Computer Applications (BCA Honours)

(Software Product Engineering)

in Association with Kalvium

Eight-Semester Full Time Programme

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: At the end of this program, the students will be able:

[PSO1]: To apply the principles of software engineering and design to develop, test, and maintain high-quality software products.

[PSO2]: To effectively communicate and collaborate with team members, stakeholders, and clients to develop and deliver software products that meet their needs and requirements.

[PSO3]: To apply critical thinking, problem-solving skills, and ethical considerations to address complex issues related to software development, deployment, and maintenance.

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 Discrete Mathematics	3	1	0	4	CH1201	Full Stack Web Development	2	4	0	6
	CH1101	C, C++ and Python - Problem solving using Programming	3	1	0	4	CH1202	Professional skills for the workplace	3	1	0	4
	CH1102	Critical Thinking	3	1	0	4	CH1203	Learning how to learn	3	1	0	4
	CH1103	Fundamentals of Computers & Digital Systems - Breadth of computer science	3	1	0	4	CH1230	Full Stack Web Development Lab	0	0	8	4
	CH1104	Introduction to Web Programming - Front end development	3	1	0	4			8	5	8	18
	CH1105	Design for Developers	3	0	0	3	Total Contact hours (L + T + P)		21			
	CH1130	C, C++ and Python - Problem solving using Programming Lab	0	0	2	1						
	CH1131	Introduction to Web Programming - Front end development Lab	0	0	2	1						
			18	5	4	25						
	Total Contact hours (L + T + P)		27									
II	Third Semester						Fourth Semester					
	Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C
	CH2101	Database Management System	3	1	0	4	CH2201	Data Structure and Algorithm	3	1	0	4
	LLC****	Technical communication - English LSRW	3	0	0	3	CH2202	Computer Organization and Architecture	3	1	0	4
	CH2102	Object Oriented Programming	3	0	0	3	CH2203	Operating System	3	0	0	3
	CH2130	Database Management System Lab	0	0	2	1	CH2204	How Human Languages Work	3	0	0	3
	CH2131	Object-Oriented Programming Lab	0	0	2	1	CH2230	Operating System Lab	0	0	2	1
	CH2170	WIP-I* (Work integration project)	0	0	14	7	CH2270	WIP-II*(Work integration project)	0	0	14	7

		9	1	18	19		12	2	15	22
	Total Contact hours (L + T + P)	28				Total Contact hours (L + T + P)	30			
III	Fifth Semester					Sixth Semester				
	Course Code	Course Name	L	T	P	C	Course Code	Course Name	L	T	P	C
	CH3101	Computer Network	3	1	0	4	CH3201	Design and Analysis of Algorithm	3	1	0	4
	CH3102	Formal language & automata Theory	3	1	0	4	CH3202	Tools and Techniques of Creative Thinking	3	1	0	4
	XXXXXX	Introduction to Philosophy	3	0	0	3	CH3203	Compiler Design	3	1	0	4
	XXXXXX	Environmental Science	2	0	0	2	XXXXX	Fundamentals of Business Management	3	1	0	4
	CH3170	WIP-III*(Work integration project)	0	0	14	7	CH3270	WIP-IV*(Work integration project)	0	0	14	7
			11	2	14	20			12	4	14	23
	Total Contact Hours (L + T + P)		27				Total Contact Hour (L + T + P)		30			
IV	Seventh Semester						Eight Semester					
	Course Name	Course Name	L	T	P	C	Course Name	Course Name	L	T	P	C
	CH41XX	Program Elective-I	3	0	0	3	CH4270	Capstone project/ Internship	0	0	28	14
	CH41XX	Program Elective-II	3	0	0	3			0	0	28	14
	CH41XX	Foundation Elective -I	4	0	0	3	Total Contact hour		28			
	CH41XX	Skilling Elective	3	0	0	3						
	CH4170	WIP-V*(Work integration project)	0	0	14	7						
			8	0	14	19						
	Total Contact Hours		26									

Academic Elective 1:

Course Code	Course Name
CH41**	Cloud computing
CH41**	Distributed systems
CH41**	Data Mining and Warehousing

Academic Elective II:

Course Code	Course Name
CH41**	Cryptography
CH41**	Internet of Things
CH41**	System Design

Foundation Elective 1:

Course Code	Course Name
CH41**	Human Mind and Behaviour
CH41**	Organization Behaviour
CH41**	Foreign language
CH41**	Design Thinking 101

Skilling Elective 1:

Course Code	Course Name
CH41**	Unix Shell Programming
CH41**	AWS and AWS Security
CH41**	Data Modelling and Visualization