

### B.E - Computer Science & Engineering

S. No.	Sub. Code	Mandatory Courses	Credit	Prerequisite
1	UBA01	Engineering Mathematics - I	4	-
2	UBA04	Discrete Mathematics	4	-
3	UBA09	Probability and Statistics	4	-
4	UBA20	Engineering Chemistry	4	-
5	UBA21	Applied Physics	4	-
6	UBA28	Professional Ethics and Legal Practices	4	-
7	UBA29	Technical English	4	-
8	UBA50	Numerical Methods	4	-
9	UBA51	Engineering Mathematics II	4	UBA01
10	BTA01	Biology and Environmental Science for Engineers	4	-
11	DSA01	Object Oriented Programming using C++	4	-
12	EEA01	Basic Electrical and Electronics Engineering	4	-
13	ECA47	Principles of Digital System Design	4	-
14	CSA02	C Programming	4	-
15	CSA03	Data Structures	4	CSA02
16	CSA04	Operating Systems	4	-
17	CSA05	Database Management Systems	4	-
18	CSA06	Design and Analysis of Algorithms	4	CSA03
19	CSA07	Computer Networks	4	-
20	CSA08	Python Programming	4	-
21	CSA09	Programming in Java	4	-
22	CSA10	Software Engineering	4	-
23	CSA11	Object Oriented Analysis and Design	4	-
24	CSA12	Computer Architecture	4	-
25	CSA13	Theory of Computation	4	UBA04
26	CSA14	Compiler Design	4	CSA02
27	CSA15	Cloud Computing and Big Data Analytics	4	CSA07
28	CSA16	Data Warehousing and Data Mining	4	CSA05
29	CSA17	Artificial Intelligence	4	CSA08
30	CSA42	Parallel Computing	4	CSA12
31	CSA43	Internet programming	4	CSA09
32	CSA51	Cryptography and Network Security	4	CSA07
33	SPIC 11	Product Development	4	-
34	SPIC 12	Research Project	12	-
35	SPIC 1	Industrial Internship - I	4	-
36	SPIC 2	Industrial Internship - II	4	-
37	UBA30	Soft Skill and Aptitude	NC	-
<b>Elective Courses (Any 10 Courses)</b>				

S. No	Sub. Code	Elective Courses	Credit	Prerequisite
<b>Program Electives (Min 6 Courses)</b>				
1	CSA18	Human Computer Interaction	4	-
2	CSA19	High Performance Networks	4	CSA07
3	CSA20	Graphics and Animation	4	-
4	CSA21	Human Centered Design	4	-
5	CSA22	Applied Medical Image Processing	4	-
6	CSA23	Information Centric Networking	4	CSA07
7	CSA24	Data Modelling and Processing	4	CSA05
8	CSA25	Social Computing	4	-
9	CSA26	Content Based Image Retrieval	4	-
10	CSA27	Health Care Analytics	4	CSA16
11	CSA28	Multimedia Databases	4	CSA05
12	CSA29	Programming Usable Interface	4	-
13	CSA30	Digital watermarking and steganalysis	4	-
14	CSA31	Cloud storage and security	4	CSA15
15	CSA32	Multimedia Security	4	-
16	CSA33	C# and .Net Framework	4	-
17	CSA34	XML and Web Services	4	-
18	CSA35	Advanced Databases	4	CSA05
19	CSA36	Advanced Java	4	CSA09
20	CSA37	Software Testing	4	CSA10
21	CSA38	Software Quality Assurance and Management	4	CSA10
22	CSA39	Mobile Commerce	4	-
23	CSA40	Management Information Systems	4	-
24	CSA41	Internet of Things	4	ECA47
25	CSA44	Distributed Systems	4	CSA04
26	CSA45	Neural Networks and Fuzzy Logic	4	CSA17
27	CSA46	Soft Computing	4	CSA17
28	CSA47	Deep Learning	4	UBA09
29	CSA48	Exploratory data Analysis	4	CSA16
30	CSA49	Text Analytics	4	CSA16
31	CSA50	Video Analytics	4	CSA16
32	CSA52	Computer Forensics	4	CSA51
33	CSA53	Mobile and Wireless Security	4	-
34	CSA54	Computer and Internet Security	4	-
35	CSA55	Business Analytics and Intelligence	4	CSA05

36	CSA56	Secure Coding Principles	4	-	
37	CSA62	User Interface (UI) and User Experience (UX) Design	4	-	
38	CSA63	Animation and Game Development	4	-	
39	ITA03	Mobile computing	4	CSA07	
40	ITA04	Statistics with R Programming	4	UBA09	
41	ITA05	Computer Vision	4	CSA08	
42	ITA06	Machine Learning	4	UBA09	
43	ITA14	Ethical Hacking	4	-	
44	ITA15	Block chain Technology	4	-	
45	ECA14	Embedded Systems	4	CSA12	
46	ECA34	Introduction to Robotics	4	-	
47	ECA36	Digital Image Processing	4	-	
OPEN ELECTIVE					
48	UBA30	Aptitude and Competency Skills	4	-	
49	UBA31	Foreign Language	4	-	
50	UBA32	Intellectual Property Rights	4	-	
51	UBA33	Principles of Management	4	-	
52	UBA34	Total Quality Management	4	-	
53	UBA35	Cyber Law	4	-	
54	UBA36	Organizational Behaviour	4	-	
55	UBA37	Multi Cuisine Cooking	4	-	
56	UBA38	Indian Music System	4	-	
57	UBA39	Short Film Making	4	-	
58	UBA40	Introduction to Art and Aesthetics	4	-	
59	UBA41	Classical and Western Dance	4	-	
60	UBA42	Art and Creativity	4	-	
61	UBA43	Economic Policies of India	4	-	
62	UBA44	ICT for Development	4	-	
63	UBA45	Life Science	4	-	
64	UBA46	Operations Research	4	-	
	Credits Distribution				
	S. No`s	Courses	Tot	Credit	Total
	1	Core Courses	32	4	128
	2	Product Development	1	4	4
	3	Industrial Internship	2	4	8
	4	Research Project	1	12	12
	5	Foreign language	1	4	4
	6	Program Elective / Open Elective/PC	9	4	36
			Total Credits		192

## Evaluation Rubrics

Assessment Tools	Weightage
Continuous Internal Assessment Test (CIA-1)	70%
Continuous Internal Assessment Test (CIA-2)	
Model Exam (Theory & Lab)	
Class Activities (MILA)	
Laboratory sessions	
Assignments	
Group Discussion	
End Semester Examination	30%