

B.E. – Computer Science and Engineering
Full Time Curriculum and Syllabus

Total Credits to be earned for the award of the Degree (Regular Students) : 184
Total Credits to be earned for the award of the Degree (Lateral Entry Students): 140

SEMESTER I										
Course Code	Course Name	L	T	P	C	Maximum Marks			Category	
						CA	ES	Total		
Theory Course										
1701MA101	Engineering Mathematics-I	3	2	0	4	40	60	100	BS	
1701PH101	Applied Physics for Engineers	3	0	0	3	40	60	100	BS	
1701CH101	Applied Chemistry in Informatics	3	0	0	3	40	60	100	BS	
1701EN101	Technical English	3	0	0	3	100	0	100	HSS	
1701GEX01	Basic Electrical and Electronics Engineering	3	0	0	3	40	60	100	ES	
1701GEX02	Engineering Graphics	2	2	0	3	50	50	100	ES	
1701GEX03	Programming in C	3	0	0	3	40	60	100	ES	
Laboratory Course										
1701HS151	Physics and Chemistry Laboratory –I	0	0	2	1	50	50	100	BS	
1701GEX51	Programming in C Laboratory	0	0	2	1	50	50	100	ES	
Total		20	4	4	24	450	450	900		

SEMESTER II										
Course Code	Course Name	L	T	P	C	Maximum Marks			Category	
						CA	ES	Total		
Theory Course										
1701MA201	Engineering Mathematics-II	3	2	0	4	40	60	100	BS	
1701PH201	Physics of Engineering Materials	3	0	0	3	40	60	100	BS	
1701CH201	Environmental Studies	3	0	0	3	40	60	100	BS	
1701GE201	Basic Civil and Mechanical Engineering	3	0	0	3	40	60	100	ES	
1702CS201	Programming in C++	3	0	0	3	40	60	100	PC	
1701LE201/ 1701LE202	Communicative English/Hindi	3	0	0	3	100		100	HSS	
Laboratory Course										
1701GEX53	Workshop Practice	0	0	2	1	50	50	100	ES	
1701HS251	Physics and Chemistry Laboratory –II	0	0	2	1	50	50	100	BS	
1702CS251	Programming in C++ Laboratory	0	0	2	1	50	50	100	PC	
1701GEX52	Communication Skills Laboratory	0	0	2	1	50	50	100	HSS	
Total		18	2	8	23	500	500	1000		

SEMESTER III										
Course Code	Course Name	L	T	P	C	Maximum Marks			Category	
						CA	ES	Total		
Theory Course										
1701MA301	Engineering Mathematics III	3	2	0	4	40	60	100	BS	
1702CS301	Data Structures	3	2	0	4	40	60	100	PC	
1702CS302	Computer Organization and Architecture	3	0	0	3	40	60	100	PC	
1702CS303	Software Engineering	3	0	0	3	40	60	100	PC	
1702CS304	Digital Systems	3	0	2	4	50	50	100	PC	
1702CS305	Operating Systems	3	0	0	3	40	60	100	PC	

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Laboratory Course										
1702CS351	Data Structures Laboratory	0	0	2	1	50	50	100	PC	
1702CS352	Operating Systems Laboratory	0	0	2	1	50	50	100	PC	
1704GE351	Life Skills: Soft Skills	0	0	2	1	100	-	100	EEC	
Total		18	4	8	24	450	450	900		

SEMESTER IV										
Course Code	Course Name	L	T	P	C	Maximum Marks			Category	
						CA	ES	Total		
Theory Course										
1701MA401	Probability and Queuing Theory	3	2	0	4	40	60	100	BS	
1702CS401	Computer Networks	3	0	0	3	40	60	100	PC	
1702CS402	Programming Paradigms	3	2	0	4	40	60	100	PC	
1702CS403	Design and Analysis of Algorithms	3	0	0	3	40	60	100	PC	
1702CS404	Microprocessors and Microcontrollers	3	0	2	4	50	50	100	PC	
1702CSX02	Database Management Systems	3	0	0	3	40	60	100	PC	
1701CH201*	Environmental Studies	3	0	0	3	40	60	100	BS	
Laboratory Course										
1702CS451	Networks Laboratory	0	0	2	1	50	50	100	PC	
1702CSX52	Database Management Systems Laboratory	0	0	2	1	50	50	100	PC	
1704GE451	Life Skills: Verbal Ability	0	0	2	1	100	-	100	EEC	
Total		18/21*	4	8	24/27*	450/ 490*	450/ 510*	900/ 1000*		

*Applicable for Lateral Entry students

SEMESTER V										
Course Code	Course Name	L	T	P	C	Maximum Marks			Category	
						CA	ES	Total		
Theory Course										
1701MA501	Discrete Mathematics	3	2	0	4	40	60	100	BS	
1702CS501	Object Oriented Analysis and Design	3	0	0	3	40	60	100	PC	
1702CS502	Theory of Computation	3	2	0	4	40	60	100	PC	
1702CS503	Computer Graphics and Multimedia	3	0	0	3	40	60	100	PC	
	Elective I	3	0	0	3	40	60	100	PE	
	Elective II	3	0	0	3	40	60	100	PE	
Laboratory Course										
1702CS551	Computer Graphics and Multimedia Laboratory	0	0	2	1	50	50	100	PC	
1704CS552	CASE Tools Laboratory (Mini Project I)	0	0	2	1	50	50	100	EEC	
1704CS553	Technical Seminar	0	0	2	1	100	-	100	EEC	
1704GE551	Life Skills: Aptitude-I	0	0	2	1	100	-	100	EEC	
Total		18	4	8	24	540	460	1000		

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SEMESTER VI									
Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
Theory Course									
1701MGX01	Professional Ethics	3	0	0	3	40	60	100	HSS
1702CS601	Web Technology	3	2	0	4	40	60	100	PC
1702CS602	Artificial Intelligence	3	0	0	3	40	60	100	PC
1702CS603	Distributed Systems	3	0	0	3	40	60	100	PC
	Elective III	3	0	0	3	40	60	100	PE
	Elective IV(Open)	3	0	0	3	40	60	100	OE
Laboratory Course									
1702CS651	Web Technology Laboratory	0	0	2	1	50	50	100	PC
1704CS652	Mobile Application Development Laboratory (Mini Project II)	0	0	2	1	50	50	100	EEC
1704CS653	Industrial Visit Presentation	0	0	0	1	100	-	100	EEC
1704GE651	Life Skills: Aptitude-II	0	0	2	1	100	-	100	EEC
	Total	18	2	6	23	540	460	1000	

SEMESTER VII									
Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
Theory Course									
1702CS701	Cryptography and Network Security	3	0	0	3	40	60	100	PC
1702CS702	Software Project Management	3	0	0	3	40	60	100	PC
1702CS703	Big Data Analytics	3	0	0	3	40	60	100	PC
1702CS704	Cloud Computing	3	0	0	3	40	60	100	PC
	Elective V	3	0	0	3	40	60	100	PE
	Elective VI(Open))	3	0	0	3	40	60	100	OE
Laboratory Course									
1702CS751	Cloud Computing Laboratory	0	0	2	1	50	50	100	PC
1702CS752	Network Security Laboratory	0	0	2	1	50	50	100	PC
1704CS753	Software Development Laboratory (Mini Project III)	0	0	2	1	50	50	100	EEC
1704GE751	Life Skills: Competitive Exams Preparation	2	0	0	2	100	-	100	EEC
1704CS754	In-plant Training / Internship Presentation	0	0	0	1	100	-	100	EEC
	Total	20	0	6	24	590	510	1100	

SEMESTER VIII									
Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
Theory Course									
	Elective VII	3	0	0	3	40	60	100	PE
	Elective VIII	3	0	0	3	40	60	100	PE
	Elective IX	3	0	0	3	40	60	100	PE
Laboratory Course									
1704CS851	Project Work	0	0	18	9	50	50	100	EEC
	Total	9	0	18	18	170	230	400	

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List of Programme Electives for B.E. – Computer Science and Engineering

Course Code	Course Name	L	T	P	C	Maximum Marks			Category
						CA	ES	Total	
ELECTIVE - I									
1703CS016	Wireless Communications	3	0	0	3	40	60	100	PE
1703CS002	Software Testing	3	0	0	3	40	60	100	PE
1703CS003	Information Management	3	0	0	3	40	60	100	PE
1703CS004	C# and .NET framework	3	0	0	3	40	60	100	PE
1703CS005	Advanced Database Technology	3	0	0	3	40	60	100	PE
ELECTIVE - II									
1703CS006	Mobile Computing	3	0	0	3	40	60	100	PE
1703CS007	Network Analysis and Management	3	0	0	3	40	60	100	PE
1703CS008	Open Source Programming	3	0	0	3	40	60	100	PE
1703CS009	Ad hoc and Sensor Networks	3	0	0	3	40	60	100	PE
1703CS010	Digital Signal Processing	3	0	0	3	40	60	100	PE
ELECTIVE - III									
1703CS011	Compiler Design	3	0	0	3	40	60	100	PE
1703MG002	Total Quality Management	3	0	0	3	40	60	100	PE
1703CS012	Data Warehousing and Data Mining	3	0	0	3	40	60	100	PE
1703CS014	Disaster Management	3	0	0	3	40	60	100	PE
1703MG008	Human Rights	3	0	0	3	40	60	100	PE
ELECTIVE - V									
1703CS001	Service Oriented Architecture	3	0	0	3	40	60	100	PE
1703CS017	Digital Image Processing	3	0	0	3	40	60	100	PE
1703CS018	Embedded and Real Time Systems	3	0	0	3	40	60	100	PE
1703CS019	Game Programming	3	0	0	3	40	60	100	PE
1703CS020	Knowledge Management	3	0	0	3	40	60	100	PE
ELECTIVE - VII									
1703CS021	Deep Learning	3	0	0	3	40	60	100	PE
1703CS022	Natural Language Processing	3	0	0	3	40	60	100	PE
1703CS023	Soft Computing	3	0	0	3	40	60	100	PE
1703CS024	Bioinformatics	3	0	0	3	40	60	100	PE
1703CS025	Human Computer Interaction	3	0	0	3	40	60	100	PE
ELECTIVE - VIII									
1703CS026	Enterprise Resource Planning	3	0	0	3	40	60	100	PE
1703CS027	Data Centre and Virtualization	3	0	0	3	40	60	100	PE
1703CS028	Growth Hacking	3	0	0	3	40	60	100	PE
1703CS029	Information Retrieval	3	0	0	3	40	60	100	PE
1703CS030	Cyber Forensics	3	0	0	3	40	60	100	PE
ELECTIVE - IX									
1703CS031	Internet of Things	3	0	0	3	40	60	100	PE
1703CS032	Mainframe Computing	3	0	0	3	40	60	100	PE
1703CS033	Multicore Architecture	3	0	0	3	40	60	100	PE
1703CS034	Graph Theory and Its Applications	3	0	0	3	40	60	100	PE
1703CS035	Social Network Analysis	3	0	0	3	40	60	100	PE
OPEN ELECTIVE									
1703CS036	Database Management Systems	3	0	0	3	40	60	100	OE
1703CS037	Web Technology	3	0	0	3	40	60	100	OE
1703CS038	Operating Systems	3	0	0	3	40	60	100	OE
1703CS039	Computer Graphics and Multimedia	3	0	0	3	40	60	100	OE
1703CS040	Software Engineering	3	0	0	3	40	60	100	OE
1703CS041	Artificial Intelligence	3	0	0	3	40	60	100	OE

ONE CREDIT COURSES									
1704CS042	Hardware and troubleshooting	-	-	-	1				OC
1704CS043	Networking Course	-	-	-	1				OC
1704CS044	Industrial Safety for Engineers	-	-	-	1				OC
1704CS045	Introduction to Fisheries Engineering	-	-	-	1				OC
1704CS046	Transport and Tourism	-	-	-	1				OC
VALUE ADDED COURSES									
1704CS047	Introduction to Data Centre Virtualization and Cloud Computing								VAC
1704CS048	Python Programming								VAC
1704CS049	Introduction to R								VAC
1704CS050	Python for Data Science								VAC

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