

**UNIVERSITY SCHOOL
OF
INFORMATION AND COMMUNICATION TECHNOLOGY**
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAMME STRUCTURE

B.TECH. COMPUTER SCIENCE AND ENGINEERING
2024-2028



GAUTAM BUDDHA UNIVERSITY
GAUTAM BUDH NAGAR, GREATER NOIDA, UP, INDIA

SEMESTER I

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA101	Engineering Mathematics-I	3	1	0	4	GE1
2	CS102	Computer Organisation and Architecture	3	1	0	4	CC1
3	EE102	Basic Electrical Engineering	3	1	0	4	GE2
4	ME101	Engineering Mechanics	3	1	0	4	GE3
5	ES101	Environmental Studies	3	1	0	4	OE1 / AECC
6	CS183	Computer Organisation and Architecture Lab	0	0	2	1	CC-L1/SEC
7	EE104	Basic Electrical Engineering Lab	0	0	2	1	GE-L1
8	EN151	Language Lab	0	0	2	1	OE-L1 / SEC
9	ME102	Workshop Practice	1	0	2	2	GE-L2 / SEC
10	GP	General Proficiency	Non Credit				
Total Hours and Credits			16	5	8	25	

SEMESTER II

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA102	Engineering Mathematics-II	3	1	0	4	GE4
2	CS101	Fundamentals of Computer Programming	3	1	0	4	CC2 /FC
3	PH102	Engineering Physics	3	1	0	4	GE5
4	EC101	Basic Electronics Engineering	3	1	0	4	GE6
5	CS105	Introduction of Artificial Intelligence	2	0	0	2	CC3 / FC
6	EN101	English Proficiency	2	0	0	2	OE2 / AECC
7	CE103	Engineering Graphics Lab	1	0	2	2	GE-L3
8	CS181	Computer Programming Lab	0	0	2	1	CC-L2 /SEC
9	EC181	Basic Electronics Engineering Lab	0	0	2	1	GE-L4
10	PH104	Engineering Physics Lab	0	0	2	1	GE-L5
11	GP	General Proficiency	Non Credit				
Total Hours and Credits			17	4	8	25	

SEMESTER III

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS201	Internet Technology	3	0	0	3	CC4
2	CS203	Concepts of Operating Systems	3	0	0	3	CC5
3	CS205	Data Structure & Algorithms	3	0	0	3	CC6
4	CS207	Problem Solving using C++	3	0	0	3	CC7 / SEC
5	CS209	Logic Design	3	0	0	3	GE7
6	MA201	Engineering Mathematics-III	3	1	0	4	GE8
7	CS281	Data Structure & Algorithms Lab	0	0	3	2	CC-L3 / SEC
8	CS283	Object-Oriented Programming Lab	0	0	3	2	CC-L4 / SEC
9	CS285	Logic Design Lab	0	0	3	2	CC-L5 / SEC
10	GP	General Proficiency	Non Credit				
Total Hours and Credits			18	1	9	25	

SEMESTER IV

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS202	Software Engineering	3	0	0	3	CC8
2	CS204	Database Management System	3	0	0	3	CC9
3	CS206	Java Programming	3	0	0	3	CC10 / SEC
4	CS208	Artificial Intelligence	3	0	0	3	CC11
5	CS210	Theory of Automata	3	0	0	3	CC12
6	CS212	Discrete Structures	3	1	0	4	CC13
7	CS282	Database Management System Lab	0	0	3	2	CC-L6 / SEC
8	CS284	Java Programming Lab	0	0	3	2	CC-L7 / SEC
9	CS286	Artificial Intelligence Lab	0	0	3	2	CC-L8 / SEC
10	GP	General Proficiency	Non Credit				
Total Hours and Credits			18	1	9	25	

SEMESTER V

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS301	Computer Networks	3	0	0	3	CC14
2	CS303	Compiler Design	3	0	0	3	CC15
3	CS305	Wireless Communication	3	0	0	3	CC16
4	CS307	Python	3	1	0	4	CC17
5		Elective 1	3	0	0	3	E1 / DSE
6		Elective 2	3	0	0	3	E2 / DSE
7	CS381	Computer Networks Lab	0	0	3	2	CC-L9
8	CS383	Compiler Design Lab	0	0	3	2	CC-L10
9	CS385	Python Programming Lab	0	0	3	2	CC-L11 / SEC
10	GP	General Proficiency	Non Credit				
Total Hours and Credits			18	1	9	25	

SEMESTER VI

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS302	Web Development using PHP	3	0	0	3	CC18 / SEC
2	CS304	Software Testing	3	0	0	3	CC19
3	CS306	Analysis & Design of Algorithms	3	1	0	4	CC20
4	CS308	Cyber Security	3	0	0	3	CC21
5		Elective 3	3	0	0	3	E3 / DSE
6		Elective 4	3	0	0	3	E4 / DSE
7	CS382	Web Development using PHP Lab	0	0	3	2	CC-L12 / SEC
8	CS384	Analysis & Design of Algorithms Lab	0	0	3	2	CC-L13 / SEC
9	CS386	Cyber Security Lab	0	0	3	2	CC-L14 / SEC
10	GP	General Proficiency	Non Credit				
Total Hours and Credits			18	1	9	25	

Industrial Training will be done by candidate individually after third year during the summer break and it will be of minimum 4 weeks. It will be evaluated as per University Examination in VII semester.

SEMESTER VII

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA402	Modeling and Simulation	3	1	0	3	GE9
2	CS401	Internet of Things	3	0	0	3	CC22
3	CS403	Soft Computing Techniques	3	0	0	3	CC23
4	CS405	Machine Learning	3	0	0	3	CC24 / SEC
5		Elective 5	3	0	0	3	E5 / DSE
6	CS481	Internet of Things Lab	0	0	3	2	CC-L15 / DSE
7	CS491	Minor Project	0	0	6	3	MP1 / E
8	CS493	Industrial Training	0	0	10	5	IT1 / E
9	GP	General Proficiency	Non Credit				
Total Hours and Credits			15	1	19	25	

SEMESTER VIII

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS490	Seminar	0	0	3	2	S / E
2	CS492	Major Project	0	0	16	8	MP2 / E
3	CS494	Internship	0	0	30	15	I / E
4	GP	General Proficiency	Non Credit				
Total Hours and Credits			0	0	49	25	

GRAND TOTAL OF CREDITS = 200

In the **Seminar**, student need to study and present individually, on latest research paper of their specialized area and It will be evaluated as per University Examination Rules.

The **Internship** in Industry will be done by candidate individually during the 8th semester and it will be for a minimum of 4 (-6) months. It will be evaluated as per University Examination Rules.

Minor and Major Project will be in a group and It will be evaluated as per University Examination Rules.

USICT will provide a mentor/supervisor for industrial training, seminar, internship, minor and major projects.

ELECTIVES FROM DCSE

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS309	Computer Graphics	3	0	0	3	E1
2	CS311	Computer Vision	3	0	0	3	E1
3	CS313	Android Operating System	3	0	0	3	E1
4	CS315	Computer Based Numerical & Statistical Techniques	3	0	0	3	E1
5	CS317	Data Mining	3	0	0	3	E1
6	CS319	System Analysis & Design	3	0	0	3	E2
7	CS321	Software Project Management	3	0	0	3	E2
8	CS323	Information Retrieval System	3	0	0	3	E2
9	CS325	Graph Theory	3	0	0	3	E2
10	CS327	Knowledge Engineering	3	0	0	3	E2
11	CS310	Digital Image Processing	3	0	0	3	E3
12	CS312	Adhoc & Sensor Networks	3	0	0	3	E3
13	CS314	Expert Systems	3	0	0	3	E3
14	CS316	Business Intelligence	3	0	0	3	E3
15	CS318	Mobile Computing	3	0	0	3	E3
16	CS320	Computer Security	3	0	0	3	E4
17	CS322	Management Information System	3	0	0	3	E4
18	CS324	Evolutionary Computation	3	0	0	3	E4
19	CS326	Fuzzy logic	3	0	0	3	E4
20	CS328	Big Data Analytics	3	0	0	3	E4
21	CS407	Pattern Recognition	3	0	0	3	E5
22	CS409	Robotics	3	0	0	3	E5
23	CS411	Optimization Techniques	3	0	0	3	E5
24	CS413	Cloud Computing	3	0	0	3	E5
25	CS415	Information Security	3	0	0	3	E5
26	CS417	Data Science Basics and Visualization	3	0	0	3	E5

CS Computer Science**CC** Core Course from USICT**GE** General Elective from related discipline of other Deptt./School**GE L** General Elective Lab from related discipline of other Deptt./School**OE** Open Elective from other discipline of other Deptt./School**AECC** Ability Enhancement Compulsary Course**DSE** Discipline Specific Course**SEC** Skill Enhancement Course**E** Elective from USICT**CC-L** Core Course Lab from USICT**IT1** Industrial Training**MP** Minor / Major Project**S** Seminar**I** Internship