

**UNIVERSITY SCHOOL
OF
INFORMATION AND COMMUNICATION TECHNOLOGY**

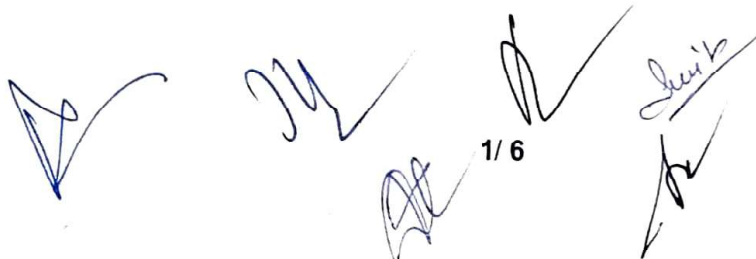
Department Of Computer Science & Engineering

**COURSE STRUCTURE
B. Tech. CSE
Specialization: Data Science**

2022-2026



**GAUTAM BUDDHA UNIVERSITY
GAUTAM BUDH NAGAR, GREATER NOIDA
UP (INDIA)**



1/6

29th BOS | Mar 25, 2023

SEMESTER I

Sr.No	Course Code	Courses	L-T-P	Credits
1	CS101	Fundamentals of Computer Programming	3-1-0	4
2	CD101	Fundamentals of Data Science and MS-Excel	2-0-0	2
3	MA101	Engineering Mathematics-1	3-1-0	4
4	PH102	Engineering Physics	3-1-0	4
5	EC101	Basic Electronics Engineering	3-1-0	4
6	EN101	English Proficiency	2-0-0	2
7	CE103	Engineering Graphics Lab	1-0-2	2
8	PH104	Engineering Physics Lab	0-0-2	1
9	CS181	Computer Programming Lab	0-0-2	1
10	EC181	Basic Electronics Engineering lab	0-0-2	1
11	GP	General Proficiency	Non-Credit	
Total Credits			25	
Total Contact Hours			17-4-8	

SEMESTER II

Sr.No	Course Code	Courses	L-T-P	Credits
1	CD102	Introduction to Python	2-0-0	2
2	CD104	Computer Organization & Architecture	3-0-0	3
3	MA102	Engineering Mathematics-II	3-1-0	4
4	EE102	Basic Electrical Engineering	3-1-0	4
5	ME101	Engineering Mechanics	3-1-0	4
6	ES 101	Environmental Studies	3-1-0	4
7	CD182	Python Programming Lab	0-0-2	1
8	EE104	Basic Electrical Engineering Lab	0-0-2	1
9	ME102	Workshop Practice	1-0-2	2
10	GP	General Proficiency	Non Credit	
Total Credits			26	
Total Contact Hours			18-4-8	

SEMESTER III

Sr.No	Course Code	Courses	L-T-P	Credits
1	CD201	Internet Technology	3-0-0	3
2	CD203	Operating Systems	3-0-0	3
3	CD205	Data Structure & Algorithms	3-0-0	3
4	CD207	Optimization Problems for data Science	3-0-0	3
5	CD209	Introduction to R Programming	3-0-0	3
6	MA201	Engineering Mathematics-III	3-1-0	4
7	CD281	R Programming Lab	0-0-3	2
8	CD283	Data Structure & Algorithms Lab	0-0-3	2
9	CD285	Internet Technology Lab	0-0-3	2
10	GP	General Proficiency	Non Credit	
Total Credits			25	
Total Contact Hours			18-1-9=28	

SEMESTER IV

Sr.No	Course Code	Courses	L-T-P	Credits
1	CD202	Software Engineering	3-0-0	3
2	CD204	Database Management System	3-0-0	3
3	CD206	Java Programming	3-0-0	3
4	CD208	Artificial Intelligence	3-0-0	3
5	CD210	Theory of Automata	3-0-0	3
6	CD212	Data Handling and Visualization	3-1-0	4
7	CD282	Database Management System Lab	0-0-3	2
8	CD284	Java Programming Lab	0-0-3	2
9	CD286	Tableau Lab	0-0-3	2
10	GP	General Proficiency	Non Credit	
Total Credits			25	
Total Contact Hours			18-1-9=28	

3/6

29th BOS | Mar 25, 2023

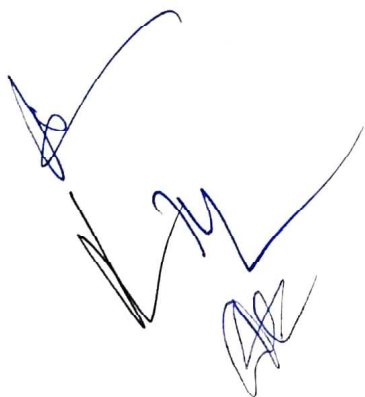
SEMESTER V

Sr.No	Course Code	Courses	L-T-P	Credits
1	CD301	Compiler Design	3-0-0	3
2	CD303	Soft Computing Techniques	3-0-0	3
3	CD305	Analysis and design of algorithms	3-0-0	3
4	CD307	SAS Programming	3-0-0	3
5	CD309	Machine Learning	3-1-0	4
6		Elective 1	3-0-0	3
7	CD381	Analysis and design of algorithms Lab	0-0-3	2
8	CD383	SAS Programming Lab	0-0-3	2
9	CD385	Machine Learning using Python	0-0-3	2
10	GP		Non Credit	
Total Credits			25	
Total Contact Hours			18-1-9=28	

SEMESTER-VI

Sr.No	CourseCode	Courses	L-T-P	Credits
1	CD302	Web Development using PHP	3-0-0	3
2	CD304	Introduction to Statistical Learning	3-0-0	3
3	CD306	Operation Research in Data Science	3-1-0	4
4	CD308	Quantum Computing	3-0-0	3
5	CD310	Data Privacy and Database Security	3-0-0	3
6		Elective 2	3-0-0	3
7	CD382	Web Development using PHP Lab	0-0-3	2
8	CD384	Statistical Learning Lab	0-0-3	2
9	CD386	Data Privacy and Database Security Lab	0-0-3	2
10	GP	General Proficiency	Non Credit	
Total Credits			25	
Total Contact Hours			18-1-9=28	

- 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

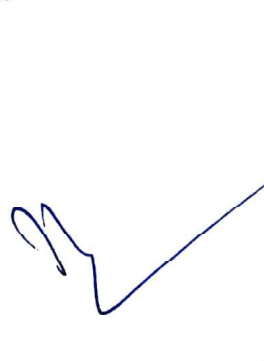
Sr.No	Course Code	Courses	L-T-P	Credits
1	MA401	Modelling and Simulation	3-1-0	4
2	CD401	Cryptography and Network Security	3-0-0	3
3	CD403	Data Analytics using R	2-0-0	2
4		Elective 3	3-0-0	3
5		Elective 4	3-0-0	3
7	CD481	Data Analytics using R Lab	0-0-3	2
8	CD491	Minor Project	0-0-10	5
9	CD493	Industrial Training	0-0-6	3
10	GP	General Proficiency	Non Credit	
Total Credits			25	
Total Contact Hours			14-1-19=28	

SEMESTER-VIII

Sr.No	CourseCode	Courses	L-T-P	Credits
1	CD490	Seminar	0-0-3	2
2	CD492	Major project	0-0-16	8
3	CD494	Internship	0-0-30	15
4	GP	General Proficiency	Non Credit	
Total Credits			25	
Total Contact Hours			0-0-49	

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 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.

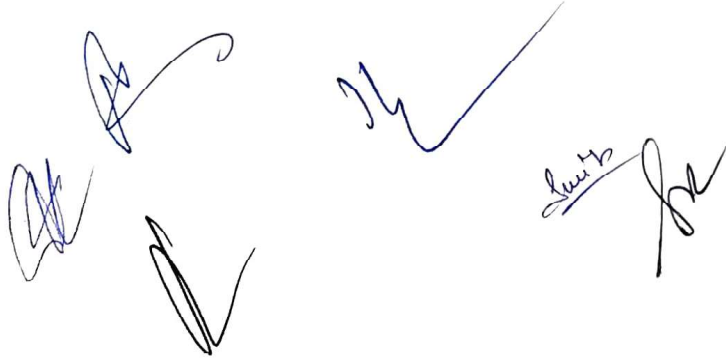
5/6



29th BOS | Mar 25, 2023

ELECTIVES

S.No.	Course Code	CourseName	L	T	P	Credits	Types
1	CD311	Pattern Recognition	3	0	0	3	E1
2	CD313	Deep Learning	3	0	0	3	E1
3	CD315	Data Science Life Cycle	3	0	0	3	E1
4	CD317	Data Storage Technologies and Networking	3	0	0	3	E1
5	CD319	Internet of Things	3	0	0	3	E2
6	CD312	Big Data Platforms	3	0	0	3	E2
7	CD314	Research Techniques for Data Science	3	0	0	3	E2
8	CD316	High Performance Computing	3	0	0	3	E2
9	CD318	Data Mining	3	0	0	3	E2
10	CD320	Information Retrieval System	3	0	0	3	E3
11	CD405	Business Intelligence	3	0	0	3	E3
12	CD407	Computer Vision with Machine Learning	3	0	0	3	E3
13	CD409	Digital Image Processing	3	0	0	3	E3
14	CD411	Mobile and Wireless Network Security	3	0	0	3	E3
15	CD413	Cloud Computing	3	0	0	3	E4
16	CD415	Big Data Analytics	3	0	0	3	E4
17	CD417	Biomedical Image and Signal Processing	3	0	0	3	E4
18	CD419	AI Enabled Data Science	3	0	0	3	E4
19	CD421	Web Analytics	3	0	0	3	E4
20	CD423	Social Media Analytics and Techniques	3	0	0	3	E4

The block contains several handwritten signatures and marks in blue ink. On the left, there are two distinct signatures. In the center, there is a large, stylized checkmark or 'M' shape. On the right, there is a signature that appears to be 'Suresh' followed by another signature.