

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

**PROGRAMME STRUCTURE**

**M.TECH. COMPUTER SCIENCE AND ENGINEERING  
SPECIALIZATION : DATA SCIENCE**

**2024-2026**



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

**SEMESTER I**

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CS521	Advanced Data Base Management System	3	0	0	3	CC1
2	CS523	Design and Architecture for Software Systems	3	0	0	3	CC2
3	CS525	Advanced Data Structure and Algorithm	3	1	0	4	CC3
4	CS527	Research Techniques in ICT	3	0	0	3	CC4
5	CS529	Java Programming	3	0	0	3	CC5
6	ES415	Energy and Environment	3	0	0	3	OE1 /AECC
7	EN531	Language, Culture and Society	3	0	0	3	OE2 /AECC
8	CS581	Advanced Data Base Management System Lab	0	0	3	2	CC-L1
9	CS583	Java Programming Lab	0	0	3	2	CC-L2 / SEC
10	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>21</b>	<b>1</b>	<b>6</b>	<b>26</b>	

**SEMESTER II**

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CD522	Python Programming for Data Science	3	0	0	3	CC6
2	CD524	AI Enabled Data Science	3	0	0	3	CC7
3	CD526	Optimization Techniques for Data Science	3	0	0	3	CC8
4	CD528	Advanced MS Excel	3	0	0	3	CC9
5		Elective-1	3	0	0	3	E1 / DSE
6		Elective-2	3	0	0	3	E2 / DSE
7		Generic Elective	3	1	0	4	GE1
8	CD582	Python Programming for Data Science Lab	0	0	3	2	CC-L3 / SEC
9	CD584	Advanced MS Excel Lab	0	0	3	2	CC-L4
10	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>21</b>	<b>1</b>	<b>6</b>	<b>26</b>	

**Summer Project in Industry** will be done individually after Fourth Year of Integrated B.Tech. - M.Tech. CSE and after Second semester of M.Tech. during the summer break and it will be of minimum 4 weeks. It will be evaluated as per University Examination Rules in III semester of M.Tech. and IX semester for Integrated B.Tech. - M.Tech. CSE .

**SEMESTER III**

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CD621	Machine Learning Algorithms	3	0	0	3	CC10
2	CD623	Big Data Framework for Data Science	3	0	0	3	CC11
3		Elective-3	3	0	0	3	E3 / DSE
4		Elective-4	3	0	0	3	E4 / DSE
5	CD681	Big Data Framework for Data Science Lab	0	0	3	2	CC-L5
6	CD683	Summer Project	0	0	8	4	SP / E
7	CD691	Dissertation Part - I	0	0	16	8	DP1 / E
8	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>12</b>	<b>0</b>	<b>27</b>	<b>26</b>	DP2 / E

**SEMESTER IV**

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CD692	Dissertation Part - II	0	0	52	26	DP2 / E
2	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>0</b>	<b>0</b>	<b>52</b>	<b>26</b>	

**GRAND TOTAL OF CREDITS = 104**

**Summer Project** will be done individually and It will be evaluated as per University Examination Rules.

**Dissertation** will be done individually and It will be evaluated as per University Examination Rules.

USICT will provide a mentor/supervisor for summer project, and dissertation.

**ELECTIVES FROM DCSE**

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	CD530	Modelling Process in Data Science	3	0	0	3	E1
2	CD532	Data Security	3	0	0	3	E1
3	CD534	Parallel and Distributed Computing	3	0	0	3	E1
4	CD536	Data Stream Management	3	0	0	3	E1
5	CD538	Predictive Analytics and Data Visualization	3	0	0	3	E2
6	CD540	Business Acumen and Intelligence	3	0	0	3	E2
7	CD542	Data Science for Business Analytics	3	0	0	3	E2
8	CD544	Advanced Semantics Web Technology	3	0	0	3	E2
9	CD625	Big Data Analytics	3	0	0	3	E3
10	CD627	Advanced Metrics for Economics	3	0	0	3	E3
11	CD629	Multivariate Techniques for Data Science	3	0	0	3	E3
12	CD631	Blockchain Technology for Data Science	3	0	0	3	E3
13	CD633	Deep Learning in Biomedical and Genomics	3	0	0	3	E4
14	CD635	Data Analytics for Healthcare	3	0	0	3	E4
15	CD637	Regression for Time Series Analysis	3	0	0	3	E4
16	CD639	Internet of Things	3	0	0	3	E4

**OPEN AND GENERIC ELECTIVES FROM OTHER SCHOOLS**

17	ES415	Energy and Environment	3	0	0	3	OE1
18	EN531	Language, Culture and Society	3	0	0	3	OE2
19	MA402	Modeling and Simulation	3	1	0	4	GE1
20	MA416	Probability and Stochastic Process	3	1	0	4	GE1

**CD** Computer Science and Data Science for Course Code**CS** Computer Science for Course Code**CC** Core Course from USICT for Type of Course**CC-L** Core Course Lab from USICT for Type of Course**GE** General Elective from related discipline of other Deptt./School**AECC** Ability Enhancement Compulsary Course**OE** Open Elective from other discipline of other Deptt./School**FC** Foundation Course**DSC** Discipline Specific Course**SEC** Skill Enhancement Course**E** Elective**DP1** Dissertation Part 1**DP2** Dissertation Part 2**SP** Summer Project