Indian Institute of Information Technology, Surat

Curriculum: M.Tech. Data Science & Artificial Intelligence /Machine Learning (DS & AI/ML)

Regular Entry to the Course

Semester-1

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Linear Algebra and Mathematical Foundations of Data Science	CS 911	4	3	0	2	100	0	50	150
2	Applied Data Analytics	CS 912	2	0	0	4	0	0	50	50
3	Natural Language Processing	CS 913	4	3	0	2	100	0	50	150
4	Research Methodology	HS 911	2	2	0	0	50	0	50	50
5	Elective 1	CS 91XX	3	3	0	0	100	0	100	100
6	Elective 2	CS 91XX	3	3	0	0	100	0	100	100
7	Elective 3	CS 91XX	3	3	0	0	100	0	100	100
	Total		21	14	0	10	-	0	-	650
	Total Contact Hours per Week			-						

Semester-2

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Advanced Artificial Intelligence -Machine Learning	CS 921	3	3	0	0	100	0	0	100
2	Deep Learning and Generative AI	CS 922	4	3	0	2	100	0	50	150
3	Mini Project	CS 923	3	0	0	6	0	0	100	100
4	Advanced AI-ML Communication Systems	CS 924	4	3	0	2	100	0	50	150
5	Elective 3	CS 92XX	3	3	0	0	100	0	-	100
6	Elective 4	CS 92XX	3	3	0	0	100	0	-	100
	Total		20	-	0	-	-	0	-	700
	Total Contact Hours per Week			-						

Semester-3

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Project Phase 1	CS 931	20	0	0	40	0	0	800	800
	Total		20	0	0	40	0	0	800	800
	Total Contact Hours per Week			40						

Semester-4

Sr. No	Course	Code	Credit	Teaching Scheme			Examination Scheme			Total
				L	T	P	L	T	P	
1	Project Phase 2	CS 941	20	0	0	40	0	0	800	800
	Total		20	0	0	40	0	0	800	800
	Total Contact Hours per Week			40						

List of Electives for 1st Semester		
S. No.	**Subject Code**	**Electives**
1.	CS 9101	Social Network Analysis
2.	CS 9102	AI Ethics and Safety
3.	CS 9103	Artificial Intelligence and Its Applications
4.	CS 9104	Agentic AI
5.	CS 9105	Mobile Computing
6.	CS 9106	IoT
7.	CS 9107	Information Retrieval
8.	CS 9108	Introduction To Industry 4.0/5.0 And Industrial IoT
9.	CS 9109	Intelligent Transportation System (Smart Mobility)
10.	CS 9110	High Performance Computing
11.	CS 9111	Augmented and Virtual Reality
12.	CS9112	Smart grid analysis & Energy system
13.	CS 9113	Federated Learning
14.	CS 9114	Blockchain and Ledger
15.	CS 9115	Speech Processing

List of Electives for 2nd Semester		
S. No.	**Subject Code**	**Electives**
1.	CS 9201	Robotics and Automation (Intelligent Systems)
2.	CS 9202	Data Science in Bioinformatics
3.	CS 9203	Computational Video Conferencing
4.	CS 9204	Data Mining and Warehousing
5.	CS 9205	Digital Forensics
6.	CS 9206	Sustainability (AI for Environment & Climate Change)
7.	CS 9207	Computational Molecular Biology