

Program Code: **XX M.Tech. (Data Science)**
 Centre: **AID Centre for Artificial Intelligence and Data Science**
 Year: **I**

[illegible]

**CENTRE FOR ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **XX M.Tech. (Data Science)**
 Centre: **AID Centre for Artificial Intelligence and Data Science**
 Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester-I (Autumn)														
1.	AID-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.														
Semester-II (Spring)														
1.	AID-701B	Dissertation Stage-II (continued from III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

There are two baskets for electives: “Core DS” and “Applications of DS”. A student needs to take 5electives, of which, at least two electives should be from the Core DS basket and at least two electives should be from the Applications of DS basket.

Program Elective Courses M.Tech. (Data Science)

(B1.Core DS Elective Courses)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	AID-571	Big Data Analytics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
2.	CSN-515	Data Mining and Warehousing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	AID-552	Deep Learning	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
4.	AID-572	Ethics in Data Science	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	MAN-628	Evolutionary Algorithms	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
6..	AID-573	Intrusion Detection Systems	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7.	CSN-528	Natural Language Processing	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
8.	MAN-613	Operations Research	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9.	AID-554	Reinforcement Learning	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
10.	AID-574	Spreadsheet Modeling and Simulation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11.	MAN-526	Soft Computing	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
12.	MAN-507	Statistical Inference	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
13.	AID-555	Time Series Data Analysis	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-

Program Elective Courses M.Tech. (Data Science)
(B2. Applications-based DS Elective Courses)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	AID-575	Blockchain Technology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
2.	AID-568	ML and AI Applications in Earth Sciences	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
3.	AID-576	Data Science in Bioinformatics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
4.	AID-577	Data Science for Decision Making	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	AID-562	AI for investment	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
6..	AID-553	Digital Image Processing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7.	AID-578	Graphs Algorithms in Data Science	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
8.	CSN-527	Internet of Things	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9.	AID-579	Leveraging Data Science for Finance	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
10.	AID-580	Multi-Objective and Multi-Criteria Decision Making	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11.	MAN-634	Parallel Computing	PEC	3	3	0	0	3	-	20-35	-	20-30	40-50	-
12.	AID-581	Pattern Recognition	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
13.	AID-582	Recommender Systems	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
14.	CSN-519	Social Network Analysis	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
15.	AID-583	Data-driven Analytics for Smart Transportation Systems	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-