Course Structure of M.Tech. (Data Science)

FIRST SEMESTER

S. No.	Paper Code	Paper Name	L	T	P	End Term	Mid Term	Credit
THEORY								
1.	MDS-101	Mathematics for Data Science	3	1	-	60	40	4
2.	MDS-102	Distributed and Cloud Computing	3	1	-	60	40	4
3.	MDS-103	Programming for Data Science (Python, R, tensor flow, etc)	3	1	-	60	40	4
4.	MDS-104	Computational Thinking(DS, Algorithm, problem solving)	3	1	-	60	40	4
5.	MDS-105	Data Mining & Data Analysis	3	1	-	60	40	4
PRACTICAL LAB								
6.	MDS –191	Data Mining & Data Analysis lab	-	-	2	10	15	1
7.	MDS –192	Computational Thinking Lab	-	-	2	10	15	1
8.	MDS –193	Python Programming Lab	-	-	3	20	30	2
9.	MDS –194	R- Programming Lab			3	20	30	2
TOTAL			15	5	10	650		26

SECOND SEMESTER

S. No.	Paper Code	Paper Name	L	T	P	End Term	Mid Term	Credit
THEORY								
1.	MDS-201	Machine Learning (CBCS)	3	1	-	60	40	4
2.	MDS-202	Elective 1- Statics for Business Analytics	3	1	-	60	40	4
3.	MDS-203	IOT	3	1	-	60	40	4
4.	MDS-204	Elective 2- Multimedia System	3	1	-	60	40	4
5.	MDS-205	Big Data System and Analytics	3	1	-	60	40	4
PRACTICAL LAB								
6.	MDS-292	BIG Data & Visual Analytics Lab	-	-	3	20	30	2
7.	MDS-293	IOT lab	-	-	3	20	30	2
8.	MDS-294	Machine Learning Lab	-	-	3	20	30	2
TOTAL			15	5	9	650		26

THIRD SEMSTER

S. No.	Paper Code	Paper Name	L	T	P	End Term	Mid Term	Credit
THEORY								
1.	MDS-301	Elective 3- Natural Language Processing	3	1	-	60	40	4
2.	MDS-302	Elective 4 - Deep Learning	3	1	-	60	40	4
3.	MDS-303	Elective 5- Evolutionary algorithm	3	1	-	60	40	4
PRACTICAL LAB								
4.	MDS-392	NLP Lab	-	-	4	20	30	2
5.	MDS-393	Minor Project	-	-	4	60	40	4
6.	MDS-394	Deep Learning Lab	-	-	4	20	30	2
TOTAL			9	3	12	500		20

FOURTH SEMSTER

S. No.	Paper Code	Paper Name	L	T	P	End Term	Mid Term	Credit
THEORY								
PRACTICAL LAB								
1.	MDS-491	Dissertation	-	-	20	120	180	12
TOTAL			-	-	20	300		12

Total Credits: 82

Total Marks: 2100

List of Elective Papers

Elective-I
1. Statics for Business Analytics
2. Business Data Management & Analytics
3. Spreadsheet Modeling and Simulation
4. Statistical Inference
5. Data Science for Decision Making
6. Leveraging Data Science for Finance
7. AI for investment
8. Market Analytics
9. Computational social Science
10. Statistical Methods and Time Series Analysis
11. Ethics in Data Science

Elective-II
1. Multimedia System
2. Digital Image Processing
3. Block Chain Technology
4. Multimedia System
5. Information Security
6. Cyber security & IT Act
7. Intrusion Detection Systems
8. Image and Video Analytics
9. Stream Processing and Analytics
10. Speech Processing
11. Biomedical Signal Processing

Elective-III

1. Natural Language Processing
2. Pattern Recognition
3. Recommender Systems
4. Social Network Analysis
5. Web Analytics
6. Artificial Intelligence
7. Fuzzy Systems
8. Information Retrieval
9. Artificial and Computational Intelligence
10. Computer Vision Using Machine Learning

Elective-IV

1. Deep Learning
2. Reinforcement Learning
3. Time Series Data Analysis
4. ML and AI Applications in Earth Sciences
5. Data Science in Bioinformatics
6. Graphs Algorithms in Data Science
7. Network Sciences
8. Probabilistic Graphical Models
9. Data Visualization and Interpretation
10. Learning With Kernels

Elective-IV

1. Evolutionary Algorithm
2. Optimization Techniques
3. Multi-Objective and Multi-Criteria Decision Making
4. Operations Research
5. Soft Computing
6. Mobile Computing
7. Parallel computing
8. Advanced strategies for data processing
9. Graphs - Algorithms and Mining
10. Computational System Biology