

**PANDIT DEENDAYAL PETROLEUM UNIVERSITY GANDHINAGAR**  
**SCHOOL OF TECHNOLOGY**

**COURSE STRUCTURE FOR M.TECH - DATA SCIENCE**

Semester I			M. Tech. - Data Science										
Sr. No.	Course/ Lab Code	Course/ Lab Name	Teaching Scheme					Examination Scheme					Total Marks
			L	T	P	C	Hrs/ Wk	Theory			Practical		
								CE	MS	ES	LW	LE/ Viva	
1	DS XXXT	Mathematics for Data Science	3	0	0	3	3	25	25	50			100
2	DS XXXT	Foundation of Data Science	2	0	0	2	2	25	25	50			100
3	DS XXXT	Probability & Statistics for Data Science	3	0	0	3	3	25	25	50			100
4	DS XXXT	Machine Learning	3	0	0	3	3	25	25	50			100
5	DS XXXP	Machine Learning Lab	0	0	2	1	2				50	50	100
6	DS XXXT	Exploratory Data Analysis & Data Visualization	3	0	0	3	3	25	25	50			100
7	DS XXXP	Exploratory Data Analysis & Data Visualization Lab	0	0	2	1	2				50	50	100
8	DS XXXP	Data Science Lab	0	0	4	2	4				50	50	100
9	DS XXXP	Colloquium/Technical Paper presentation	0	0	4	2	4				50	50	100
		TOTAL	14	0	12	20	26	100	100	200	250	250	900

CE- Continuous Evaluation, MS-Mid Semester; ES – End Semester Exam

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**COURSE STRUCTURE FOR M. TECH - DATA SCIENCE**

Semester II		M. Tech. - Data Science											
Sr. No.	Course/ Lab Code	Course/ Lab Name	Teaching Scheme					Examination Scheme					Total Marks
			L	T	P	C	Hrs/ Week	Theory			Practical		
								CE	MS	ES	LW	LE/ Viva	
1	DS XXXT	Neural Network & Deep Learning	3	0	0	3	3	25	50	25			100
2	DS XXXP	Neural Network & Deep Learning LAB	0	0	2	1	2				50	50	100
3	DS XXXT	Data Authorization & Privacy preservation	3	0	0	3	3	25	50	25			100
4	DS XXXXT	Department Elective-A	3	1	0	4	4	25	50	25			100
5	DSXXXT	Department Elective-B	3	0	0	3	3	25	50	25			100
6	DSXXXP	Department Elective-B LAB	0	0	2	1	2				50	50	100
7	DSXXXL	High Performance Computing LAB	0	0	4	2	4				50	50	100
8	DS XXXP	*Research Project / Capstone Project	0	0	6	3	6				50	50	100
9		Successful Research and Development Program	2	0	0	2	2						NP/PP
		TOTAL	14	1	14	22	29	100	200	100	200	200	800

MS = Mid Semester, ES = End Semester; IA = Internal assessment (like Test/quizzes, assignments etc.)

LW = Laboratory work; LE = Laboratory Exam

**Department Elective-A**

	Subject Code	Subject
<b>Elective – A (3-1-0)</b>	20DSE151	Advanced Algorithms and Optimization
	20DSE152	Time Series Analysis and Forecasting
	20DSE153	Applied Machine learning
	20DSE154	Mining Massive Data Sets

**Department Elective-B**

	Subject Code	Subject
<b>Elective-B (3-0-2)</b>	20DSE251	Computer Vision
	20DSE252	Big Data Analytics
	20DSE253	Social Network Analysis
	20DSE254	Natural Language & Text Mining
	20DSE255	Machine Learning in Cyber Security

**\*Industry Domain Track-Capstone Course (Any-One)**

Sl. No.	Domain	Sl. No.	Domain
1.	Information Security	4.	Agriculture
2.	Real time streaming analysis	5.	Healthcare
3.	Banking & Financial	6.	E-Commerce

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COURSE STRUCTURE FOR M. TECH - DATA SCIENCE													
Semester III			M. Tech. - Data Science										
Sr. No.	Course/Lab Code	Course/Lab Name	Teaching Scheme					Examination Scheme					
			L	T	P	C	Hrs./Week	Theory			Practical		Total Marks
								CE	MS	ES	CE	ES	
1	DS XXX	Seminar				5		40	60	--			100
2	DS XXX	Project				14		40	60	--			100
		Industrial Training											NP/PP
		TOTAL				19	0						200

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**COURSE STRUCTURE FOR M.TECH - DATA SCIENCE**

Semester IV			M. Tech. - Data Science											
Sr. No.	Course/Lab Code	Course/Lab Name	Teaching Scheme					Examination Scheme						
			L	T	P	C	Hrs./Week	Theory			Practical		Total Marks	
								CE	MS	ES	CE	ES		
1	DS XXX	Seminar				5						60	40	100
2	DS XXX	Project and Dissertation				24						60	40	100
		TOTAL				29						120	80	200

CE- Continuous Evaluation, MS-Mid Semester; ES – End Semester Exam

For Seminar, Project and Dissertation work there would be Three reviews of 30, 30 and 40 marks.