



**TECHNO INDIA UNIVERSITY**

W E S T B E N G A L

**COURSE CURRICULUM FOR 4-YEARS B.Sc. DATA  
SCIENCE (H)**



**DEPARTMENT OF DATA SCIENCE**

**Techno India University, West Bengal**

**EM-4, EM Block, Sector V, Bidhannagar,**

**Kolkata -700091, West Bengal**



## First Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MI-T11101	Descriptive Statistics	3	0	0	3
2	TIU-UDS-SEC-L1101	Fundamantals of MS Excel	0	0	4	2
3	TIU-UDS-MJ-T11102	Introduction to Database Management System and Data Warehousing	2	0	0	2
4	TIU-UDS-MD-T1101	Mathematics for Data Science - 1	1	1	0	2
5	TIU-UDS-AEC-T1101	Communicative English	2	0	0	2
6	TIU-UDS-CVA-T1101	Indian society and culture	1	0	0	1
7	TIU-UDS-MJ-L11104	Introduction to R Programming	0	0	8	4
8	TIU-UDS-CVA-L1191	Introduction to C Programming	0	0	4	2
9	TIU-UES-SEC-S1101	Entrepreneurship Skill Development	0	0	4	2
		<b>1st Semester Total</b>				<b>20</b>



## Second Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MD-T1202	Probability Theory 1	3	0	0	3
2	TIU-UDS-MI-T12101	Advanced Statistics	2	0	0	2
3	TIU-UDS-MJ-T12103	Introduction to Python Programming	2	1	0	3
4	TIU-UDS-MD-T1203	Business Accounting	2	0	0	2
5	TIU-UBC-CVA-T1201	Business Ethics and Governance	1	0	0	1
6	TIU-UDS-MJ-L12190	Introduction to Python Programming	0	0	6	3
7	TIU-UDS-AEC-L1290	Soft Skills	0	0	4	2
8	TIU-UDS-MD-L1290	Java Programming	0	0	4	2
9	TIU-UES-SEC-S1201	Entrepreneurship Skill Development	0	0	4	2
		<b>2<sup>nd</sup> Semester Total</b>				<b>20</b>



## Third Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MI-T21101	Probability Theory and Bayesian Statistics	3	0	0	3
2	TIU-UDS-MJ-T21104	Machine Learning	3	0	0	3
3	TIU-UDS-MJ-T21105	Data Processing using Python	3	0	0	3
4	TIU-UDS-MD-T2101	Mathematics for Data Science -II	2	1	0	3
5	TIU-UDS-CVA-T2101	Marketing Analytics	2	0	0	2
6	TIU-UDS-AEC-L2101	Data Processing using Python	0	0	4	2
7	TIU-UDS-SEC-L2101	Data Processing and EDA in Microsoft Power BI	0	0	4	2
8	TIU-UES-SEC-S2101	Entrepreneurship Skill Development	0	0	4	2
9	TIU-UBC-AEC-S2102	Foreign Language	0	0	0	0
		<b>3rd Semester Total</b>				<b>20</b>



## Fourth Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MI-T22201	Regression and Time Series	3	1	0	4
2	TIU-UDS-MJ-T22202	Introduction to Cloud Computing	3	0	0	3
3	TIU-UDS-MJ-T22203	Object Relational and NoSQL Databases	3	0	0	3
4	TIU-UDS-MD-T2201	HR Metrics and Analytics	2	0	0	2
5	TIU-UDS-CVA-T2201	Operations Research and Optimization Techniques	2	0	0	2
6	TIU-UDS-AEC-L2201	SQL and NoSQL Databases	0	0	4	2
7	TIU-UDS-MI-L22203	Data Visualization using Python Programming	0	0	4	2
8	TIU-UES-SEC-S2201	Entrepreneurship Skill Development	0	0	4	2
		<b>4th Semester Total</b>				<b>20</b>



## Fifth Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MI-T31201	Business Analysis	3	0	0	3
2	TIU-UDS-MJ-T31302	Data Mining and Visualization Using R Programming	3	0	0	3
3	TIU-UDS-MJ-T31303	Introduction to Artificial Intelligence	4	0	0	4
4	TIU-UDS-MD-S3101	Handling Human value in workplace	0	0	4	2
5	TIU-UDS-AEC-S3101	Leadership and Skill development at Workplace	0	0	8	4
6	TIU-UDS-MI-I31201	Internship, Project Work & Viva Voce	0	0	8	4
		<b>5th Semester Total</b>				<b>20</b>

**Sixth Semester**

<b>Sl. No.</b>	<b>COURSE CODE</b>	<b>COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Credit</b>
1	TIU-UDS-MJ-T32301	Big Data Processing Techniques and Platforms	3	1	0	4
2	TIU-UDS-MJ-T32305	Data Processing and Scrapping	4	0	0	4
3	TIU-UDS-MD-T3202	Ethical Hacking and Cyber Security	2	2	0	4
4	TIU-UDS-AEC-T3202	Capstone Project on Machine Learning	0	0	8	4
5	TIU-UDS-MI-I32201	Internship, Project Work & Viva Voce	0	0	8	4
		<b>6th Semester Total</b>				<b>20</b>



## Seventh Semester

Sl. No.	COURSE CODE	COURSE	L	T	P	Total Credit
1	TIU-UDS-MD-T4101	Research Methodology	3	1	0	4
2	TIU-UDS-MD-T4102	Software engineering and Project Management	3	1	0	4
3	TIU-UDS-MI-T41301	Real-Time Data Processing in Web Applications	3	1	0	4
4	TIU-UDS-AEC-T4101	Digital Marketing and E-Commerce in Data Science	2	2	0	4
5	TIU-UDS-MJ-T41401	Advance Machine Learning	3	1	0	4
		<b>7th Semester Total</b>				<b>20</b>

**Eighth Semester**

<b>Sl. No.</b>	<b>COURSE CODE</b>	<b>COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Credit</b>
1	TIU-UDS-MJ-T42401	Graph Theory and Image processing	3	1	0	4
2	TIU-UDS-AEC-T4201	Computer Application and Statistical Tools for Research	3	1	0	4
3	TIU-UDS-MD-T4201	Financial Analytics and Case Study	2	2	0	4
4	TIU-UDS-MD-T4202	Advance Deep Learning	3	1	0	4
5	TIU-UDS-MI-T42301	Natural Language Processing	3	1	0	4
		<b>8th Semester Total</b>				<b>20</b>