

**Syllabus**  
**for**  
**M.Sc. in Data Science**

**Under**  
**The Choice Based Credit System**



**School of Interdisciplinary Studies**  
**University of Kalyani**  
**(2019 onwards)**

## Syllabus of M.Sc. in Data Science

Semester	Paper Code	Paper Name	Theory/Practical	Credit	Points	Hrs/Wk [L-T-P]
I	DST 101	Mathematics & Statistics - I	Theory	4	100	3-1-0
	DST 102	Algorithms & Data Structure		4	100	3-1-0
	DST 103	Database Management Systems		4	100	3-1-0
	DST 104	Introduction to Data Science & Artificial Intelligence		4	100	3-1-0
	DSP 111	Algorithms & Data Structure Laboratory with C	Practical	3	75	0-0-9
	DSP 112	Database Management Systems Laboratory		2	50	0-0-6
	DSP 113	Statistics & Data Analysis Laboratory with R/Excel/SPSS		2	50	0-0-6
	DSS 121	Communicative English & HR Management – I	Sessional	1	25	0-0-3
Total				24	600	12-4-24
II	DSTO 201	CBCS Open Choice Course	Theory	4	100	3-1-0
	DST 202	Mathematics & Statistics - II		4	100	3-1-0
	DST 203	Machine Learning		4	100	3-1-0
	DST 204	Big Data Analytics & Cloud Computing		4	100	3-1-0
	DSP 211	Machine Learning Laboratory with Python	Practical	3	75	0-0-9
	DSP 212	Information Visualization Laboratory		2	50	0-0-6
	DSP 213	Big Data Analytics & Cloud Computing Laboratory		2	50	0-0-6
	DSS 221	Communicative English & HR Management – II	Sessional	1	25	0-0-3
Total				24	600	12-4-24
III	DST 301	Entrepreneurship & IPR	Theory/Tutorial	3	75	2-1-0
	DST 302	Research Methodology		3	75	2-1-0
	DSE 303	Elective – I		2	50	0-2-0
	DSE 304	Elective – II		2	50	0-2-0
	DSE 305	Elective-III (Student's choice)		2	50	0-2-0
	DSS 321	Review on Frontiers in Data Science	Sessional	2	50	0-0-6
	DSS 322	Project/Training/Seminar		2	50	-
Total				16	400	4-8-6
IV	DSS 421	Dissertation (Final)	Sessional	10	250	0-0-40
	DSS 422	Seminar		2	50	0-0-6
	DSS 423	Grand Viva		4	100	--
	Total				16	400

## **Details of abbreviated paper codes**

<b>DST</b>	Data Science Theory
<b>DSP</b>	Data Science Practical
<b>DSS</b>	Data Science Sessional
<b>DSTO</b>	Data Science Theory (Open Choice)
<b>DSE</b>	Data Science Elective
<b>1st Digit</b>	No. of Semester [1= Semester I, 2= Semester II, 3= Semester III, 4= Semester IV]
<b>2nd Digit</b>	Type of paper [0 = Theory paper; 1 = Practical paper; 2 = Sessional Paper]
<b>3rd Digit</b>	No. of paper in each category (Theory, Practical and Sessional)

### **DSTO 201 – CBCS Open choice course offered to other departments' students:**

Fundamentals of Data Science

### **List of Electives (May be augmented as per requirement and availability) for DSTE 303 & 304**

1. Time Series Analysis
2. Natural Language Processing
3. Computational Biology
4. Complex Network Analysis
5. Image Processing & Computer Vision
6. Information Security
7. Multicriteria Decision Making