

13. COURSES OF STUDY AND SCHEME OF ASSESSMENT

MSc DATA SCIENCE

(2018 REGULATIONS)
(Minimum No. of Credits to be Earned: 210*)

MSc DATA SCIENCE

(2018 REGULATIONS)

Course Code	Course Title	Hours/Week			Credits	Maximum marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
IX SEMESTER									
18XD91	DATA PRIVACY AND SECURITY	3	0	0	3	50	50	100	PC
18XD92	NETWORK SCIENCE	3	0	0	3	50	50	100	PC
18XD93	INFORMATION RETRIEVAL	3	0	0	3	50	50	100	PC
18XD94	PROFESSIONAL ELECTIVE – IV (SELF STUDY)	3	2	0	4	50	50	100	PE
18XD95	OPEN ELECTIVE-II	3	2	0	4	50	50	100	PE
18XD96	INFORMATION RETRIEVAL LAB	0	0	4	2	100	-	100	PC
18XD97	DATA PRIVACY AND SECURITY LAB	0	0	4	2	100	-	100	PC
18XD98	NETWORK SCIENCE LAB	0	0	4	2	100	-	100	PC
Total 31 Hrs		15	4	12	23	550	250	800	
X SEMESTER									
18XDP2	PROJECT WORK II	0	0	-	12	50	50	100	EEC

CA – Continuous Assessment ; FE - Final Examination; CAT – Category; BS –Basic Sciences; HS- Humanities & Social Sciences; ES- Engineering Sciences; PC – Professional Core; PE - Professional Elective; OE-Open Elective; EEC – Employability Enhancement Course, MC – Mandatory Course.

MSc DATA SCIENCE
(2018 REGULATIONS)

Course Code	Course Title	Hours/Week			Credits	Maximum marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
PROFESSIONAL ELECTIVE (Four to be opted)									
18XDA1	DATA COMPRESSION	3	2	0	4	50	50	100	PE
18XDA2	MOBILE COMPUTING	3	2	0	4	50	50	100	PE
18XDA3	DIGITAL IMAGE PROCESSING	3	2	0	4	50	50	100	PE
18XDA4	MULTIMEDIA ANALYTICS	3	2	0	4	50	50	100	PE
18XDA5	COMPUTATIONAL NEUROSCIENCE	3	2	0	4	50	50	100	PE
18XDA6	PERVASIVE COMPUTING	3	2	0	4	50	50	100	PE
18XDA7	MARKETING ANALYTICS	3	2	0	4	50	50	100	PE
18XDA8	WEB ANALYTICS	3	2	0	4	50	50	100	PE
18XDA9	SOFT COMPUTING	3	2	0	4	50	50	100	PE
18XDAA	COMPUTER GRAPHICS	3	2	0	4	50	50	100	PE
18XDAB	ALGORITHMS FOR BIOINFORMATICS	3	2	0	4	50	50	100	PE
18XDAC	MATHEMATICAL MODELING	3	2	0	4	50	50	100	PE
18XDAD	SOFTWARE ENGINEERING	3	2	0	4	50	50	100	PE
18XDAE	SOFTWARE PATTERNS	3	2	0	4	50	50	100	PE
18XDADF	APPLIED GRAPH ALGORITHMS	3	2	0	4	50	50	100	PE
18XDAG	GAME THEORY	3	2	0	4	50	50	100	PE
18XDAH	SOCIAL NETWORK DATA ANALYTICS	3	2	0	4	50	50	100	PE
18XDAI	SURVIVAL ANALYTICS	3	2	0	4	50	50	100	PE
18XDAJ	DEEP LEARNING	3	2	0	4	50	50	100	PE
18XDAK	HEALTH ANALYTICS	3	2	0	4	50	50	100	PE
18XDAL	CYBER SECURITY ANALYTICS	3	2	0	4	50	50	100	PE
18XDAM	INTERNET OF THINGS	3	2	0	4	50	50	100	PE

Course Code	Course Title	Hours/Week			Credit	Maximum marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
OPEN ELECTIVES (Two to be opted)									
18XDO1	COMPUTATIONAL FINANCE	3	2	0	4	50	50	100	OE
18XDO2	COMPUTATIONAL GEOMETRY	3	2	0	4	50	50	100	OE
18XDO3	RANDOMIZED ALGORITHMS	3	2	0	4	50	50	100	OE
18XDO4	PRINCIPLES OF MANAGEMENT AND BEHAVIOURAL SCIENCES	3	2	0	4	50	50	100	OE
18XDO5	ENTREPRENEURSHIP	3	2	0	4	50	50	100	OE
18XDO6	INFORMATION THEORY AND ERROR CONTROL CODING	3	2	0	4	50	50	100	OE
18XDO7	ACCOUNTING AND FINANCIAL MANAGEMENT	3	2	0	4	50	50	100	OE
18XDO8	WIRELESS NETWORKS	3	2	0	4	50	50	100	OE
18XDO9	ENVIRONMENTAL SCIENCE AND GREEN COMPUTING	3	2	0	4	50	50	100	OE

Labeling & Group of Courses

PROFESSIONAL CORE (PC)				
Sl. No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1.	18XD14	PROBLEM SOLVING & C PROGRAMMING	3:0:0:3	I
2.	18XD17	C PROGRAMMING LAB	0:0:4:2	I
3.	18XD23	DATA STRUCTURES	3:0:0:3	II
4.	18XD24	OBJECT ORIENTED PROGRAMMING	3:0:0:3	II
5.	18XD25	THEORY OF PROBABILITY	3:2:0:4	II
6.	18XD26	OBJECT COMPUTING LAB	0:0:4:2	II
7.	18XD27	DATA STRUCTURES LAB	0:0:4:2	II
8.	18XD28	PYTHON PROGRAMMING LAB	0:0:4:2	II
9.	18XD31	APPLIED STATISTICS	3:0:0:3	III
10.	18XD34	ADVANCED DATA STRUCTURES	3:0:0:3	III
11.	18XD35	COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING	3:0:0:3	III
12.	18XD36	APPLIED STATISTICS AND R PROGRAMMING LAB	0:0:4:2	III
13.	18XD37	ADVANCED DATA STRUCTURES LAB	0:0:4:2	III
14.	18XD38	ASSEMBLY LANGUAGE PROGRAMMING LAB	0:0:4:2	III
15.	18XD41	OPTIMIZATION TECHNIQUES	4:0:0:4	IV
16.	18XD42	DATABASE DESIGN	3:0:0:3	IV
17.	18XD43	PREDICTIVE ANALYTICS	3:0:0:3	IV
18.	18XD44	OPERATING SYSTEMS	3:2:0:4	IV
19.	18XD46	DATA VISUALIZATION LAB	0:0:4:2	IV
20.	18XD47	RDBMS LAB	0:0:4:2	IV
21.	18XD48	JAVA PROGRAMMING LAB	0:0:4:2	IV
22.	18XD51	DESIGN AND ANALYSIS OF ALGORITHMS	3:0:0:3	V
23.	18XD52	STOCHASTIC MODELS	4:0:0:4	V
24.	18XD53	COMPUTER NETWORKS	3:0:0:3	V
25.	18XD54	SUPERVISED AND UNSUPERVISED LEARNING	3:0:0:3	V
26.	18XD56	DESIGN AND ANALYSIS OF ALGORITHMS LAB	0:0:4:2	V
27.	18XD57	COMPUTER NETWORKS LAB	0:0:4:2	V
28.	18XD58	SUPERVISED AND UNSUPERVISED LEARNING LAB	0:0:4:2	V
29.	18XD61	PARALLEL AND DISTRIBUTED COMPUTING	3:0:0:3	VI
30.	18XD62	DATA MINING	3:0:0:3	VI
31.	18XD63	BIG DATA & MODERN DATABASE SYSTEMS	3:0:0:3	VI
32.	18XD64	ARTIFICIAL INTELLIGENCE	3:2:0:4	VI
33.	18XD66	PARALLEL AND DISTRIBUTED COMPUTING LAB	0:0:4:2	VI
34.	18XD67	BIG DATA & MODERN DATABASE SYSTEMS LAB	0:0:4:2	VI
35.	18XD68	SCIENTIFIC COMPUTING LAB	0:0:4:2	VI
36.	18XD81	REINFORCEMENT LEARNING	3:0:0:3	VIII
37.	18XD82	NATURAL LANGUAGE PROCESSING	3:0:0:3	VIII
38.	18XD83	CLOUD COMPUTING	3:0:0:3	VIII
39.	18XD86	REINFORCEMENT LEARNING LAB	0:0:4:2	VIII
40.	18XD87	NATURAL LANGUAGE PROCESSING LAB	0:0:4:2	VIII
41.	18XD88	CLOUD COMPUTING LAB	0:0:4:2	VIII
42.	18XD91	DATA PRIVACY AND SECURITY	3:0:0:3	IX
43.	18XD92	NETWORK SCIENCE	3:0:0:3	IX
44.	18XD93	INFORMATION RETRIEVAL	3:0:0:3	IX
45.	18XD96	INFORMATION RETRIEVAL LAB	0:0:4:2	IX
46.	18XD97	DATA PRIVACY AND SECURITY LAB	0:0:4:2	IX
47.	18XD98	NETWORK SCIENCE LAB	0:0:4:2	IX

PROFESSIONAL ELECTIVES (PE)				
Sl. No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1.	18XDA1	DATA COMPRESSION	3:2:0:4	V
2.	18XDA2	MOBILE COMPUTING	3:2:0:4	V
3.	18XDA3	DIGITAL IMAGE PROCESSING	3:2:0:4	V
4.	18XDA4	MULTIMEDIA ANALYTICS	3:2:0:4	VIII
5.	18XDA5	COMPUTATIONAL NEUROSCIENCE	3:2:0:4	VIII
6.	18XDA6	PERVASIVE COMPUTING	3:2:0:4	VIII
7.	18XDA7	MARKETING ANALYTICS	3:2:0:4	VIII
8.	18XDA8	WEB ANALYTICS	3:2:0:4	VI
9.	18XDA9	SOFT COMPUTING	3:2:0:4	VI
10.	18XDAA	COMPUTER GRAPHICS	3:2:0:4	VI
11.	18XDAB	ALGORITHMS FOR BIOINFORMATICS	3:2:0:4	VIII
12.	18XDAC	MATHEMATICAL MODELING	3:2:0:4	VI
13.	18XDAD	SOFTWARE ENGINEERING	3:2:0:4	VI
14.	18XDAE	SOFTWARE PATTERNS	3:2:0:4	IX
15.	18XDAF	APPLIED GRAPH ALGORITHMS	3:2:0:4	IX
16.	18XDAG	GAME THEORY	3:2:0:4	IX
17.	18XDAH	SOCIAL NETWORK DATA ANALYTICS	3:2:0:4	IX
19.	18XDAI	SURVIVAL ANALYTICS	3:2:0:4	IX
20.	18XDAJ	DEEP LEARNING	3:2:0:4	VIII
21.	18XDAK	HEALTH ANALYTICS	3:2:0:4	VIII
22.	18XDAL	CYBER SECURITY ANALYTICS	3:2:0:4	VIII
24.	18XDAM	INTERNET OF THINGS	3:2:0:4	VIII

OPEN ELECTIVES (OE)				
S.No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1	18XDO1	COMPUTATIONAL FINANCE	3:2:0:4	VIII or IX
2	18XDO2	COMPUTATIONAL GEOMETRY	3:2:0:4	VIII or IX
3	18XDO3	RANDOMIZED ALGORITHMS	3:2:0:4	VIII or IX
4	18XDO4	PRINCIPLES OF MANAGEMENT AND BEHAVIOURAL SCIENCES	3:2:0:4	VIII or IX
5	18XDO5	ENTREPRENEURSHIP	3:2:0:4	VIII or IX
6	18XDO6	INFORMATION THEORY AND ERROR CONTROL CODING	3:2:0:4	VIII or IX
7	18XDO8	ACCOUNTING AND FINANCIAL MANAGEMENT	3:2:0:4	VIII or IX
8	18XDO9	WIRELESS NETWORKS	3:2:0:4	VIII or IX
9	18XD10	ENVIRONMENTAL SCIENCE AND GREEN COMPUTING	3:2:0:4	VIII or IX

BASIC SCIENCES (BS)				
Sl. No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1.	18XD12	CALCULUS AND ITS APPLICATIONS	3:2:0:4	I
2.	18XD14	DIGITAL ELECTRONICS	3:0:0:3	I
3.	18XD18	DIGITAL ELECTRONICS LAB	0:0:4:2	I
4.	18XD21	DISCRETE STRUCTURES	3:2:0:4	II
5.	18XD22	ABSTRACT ALGEBRA	3:2:0:4	II
7.	18XD32	LINEAR ALGEBRA	4:0:0:4	III
8.	18XD33	GRAPH THEORY	3:2:0:4	III

ENGINEERING SCIENCES (ES)				
Sl. No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1.	18XD16	ENGINEERING GRAPHICS AND GEOMETRIC MODELING	0:0:4:2	I
2.	18XD13	BASICS OF COMPUTATIONAL BIOLOGY	3:2:0:4	i

HUMANITIES AND SOCIAL SCIENCES (HS)				
Sl. No.	Course Code	Course Title	L:T:P:C	Preferred Semester
1.	18XD11	ENGLISH FOR PROFESSIONAL SKILLS	3:0:0:3	I

EMPLOYMENT ENHANCEMENT COURSES (EEC)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	18XDP1	PROJECT WORK-I	0:0:0:12	VII
2.	18XDP2	PROJECT WORK – II	0:0:0:12	X