Master of Science in Data Science
(Data Science)
Regulations 2023

For students admitted from academic year 2023-24 onwards

Under Choice Based Credit System

PG Department of Computers
KBN COLLEGE
Vijayawada– 520001
Andhra Pradesh

1	**Title of the Course**	**M.Sc., (Data Science)**
2	Duration of the course	2 years (Four Semesters)
3	Eligibility criteria for admission	The candidate seeking admission in to M.Sc. (Data Science) should have passed an • Under graduation in mathematics/computer science/computer applications/statistics or • B.Voc with Computer Science/Computer Applications/Information Technology/Web Technologies, B.Sc (Data Science) & B.Sc(Artificial Intelligence/Machine Learning) (or) • UG Degree in Engineering or Technology in CSE/ECE/EEE/E&I/IT with 50% of marks (inclusive all subjects)
4	Level of the Course	Post Graduate
5	Mode of Admission	The mode of admission is through AP-PGCET /KRUCET conducted by Krishna University.
6	Objectives of the course	The Objective of M.Sc., Data Science course is to impart knowledge and skill-oriented training in the recent advancements in Data Science with an aim to develop research and innovations.
7	Course Requirement	The course shall include Theory papers, Labs, Assignments, Tests, Seminars and Project Work.
8	Number of working days	In each semester at least ninety working days must be dedicated for theory classes, practical classes and seminars.

KBN PG COLLEGE (AUTONOMUS): VIJAYAWADA
COURSE STRUCTURE FOR M.Sc. (Data Science) UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
W.E.F 2023-24 (R23 Regulations)

I SEMESTER

Course Code	Course Name	Teaching Hours/Week			CORE / IDC/DSE/ SEC/OEC/MOOCS	Internal Marks	External Marks	No. of Credits
		Lecture	Practical	Tutorial				
R23DS101	Programming with R and Python	4	0	0	Core	30	70	4
R23DS102	Data Structures	4	0	0	Core	30	70	4
R23DS103	Database Management Systems	4	0	0	Core	30	70	4
R23DS104	Probability and Statistics	4	0	0	Core	30	70	4
R23DS105	**Operating Systems**	3	1	0	Core	30	70	3
R23DS106	Python & R Lab	0	6	0	Core	30	70	3
R23DS107	Data Structures Lab	0	6	0	Core	30	70	3
TOTAL FOR FIRST SEMESTER						**210**	**490**	**25**

II SEMESTER

Course Code	Course Name	Teaching Hours/Week			CORE / IDC/DSE/ SEC/OEC/MOOCS	Internal Marks	External Marks	No. of Credits
		Lecture	Practical	Tutorial				
R23DS201	Statistical Methods for Machine Learning	4	0	0	Core	30	70	4
R23DS202	Data Processing, Data Mining & Data warehousing	4	0	0	Core	30	70	4
R23DS203	Web Technologies	4	0	0	Core	30	70	4
R23DS204	Distributed Algorithms & Optimization with Hadoop & Spark	3	1	0	SEC	30	70	3
DOMAIN SPECIFIC ELECTIVE COURSES (CHOOSE ANY ONE)								
R23DS205E1	Linear Regression Models	4	0	0	DSE	30	70	4
R23DS205E2	Design and Analysis Algorithms	4	0	0	DSE	30	70	4
R23DS205E3	Time Series Analysis	4	0	0	DSE	30	70	4
LAB PRACTICALS								
R23DS206	Machine Learning Lab	0	6	0	Core	30	70	3
R23DS207	Web Technologies Lab	0	6	0	Core	30	70	3
TOTAL FOR SECOND SEMESTER						**210**	**490**	**25**

At the end of 2nd semester, every student must undergo Summer Internship/Apprenticeship/Project Work/Industrial Training/Research based Project Work for Six Weeks and must prepare a report concerned as per approved project guidelines, and submit the same to the University 14 days before the commencement of third semester end examinations.

III SEMESTER								
Course Code	**Course Name**	**Teaching Hours/Week**			**CORE / IDC/DSE/ SEC/OEC/MOOCS**	**Internal Marks**	**External Marks**	**No. of Credits**
		Lecture	**Practical**	**Tutorial**				
R23DS301	Data Processing and Visualization	4	0	0	Core	30	70	4
DOMAIN SPECIFIC ELECTIVE COURSES (CHOOSE ANY THREE)								
R23DS302E1	Deep Learning & Text Mining	4	0	0	DSE	30	70	4
R23DS302E2	Big Data Analytics	4	0	0	DSE	30	70	4
R23DS302E3	Data Science	4	0	0	DSE	30	70	4
R23DS302E4	Data Engineering	4	0	0	DSE	30	70	4
R23DS302E5	Software Engineering	4	0	0	DSE	30	70	4
R23DS302E6	Block Chain Technology	4	0	0	DSE	30	70	4
LAB PRACTICALS								
R23DS303	Data Processing and Visualization Lab	0	6	0	Core	30	70	3
R23DS304	Data Science Lab	0	6	0	Core	30	70	3
OPEN ELECTIVE (INTERDISCIPLINARY/MULTIDISCIPLINARY) COURSES (CHOOSE ANY ONE)								
R23OE305	Python Programming	3	0	0	OEC	30	70	3
R23OE306	Office Tools	3	0	0	OEC	30	70	3
R23OE307	Ecommerce and Web Designing	3	0	0	OEC	30	70	3
						210	**490**	**25**
ONE OPEN ELECTIVE PAPER FROM DEPARTMENT OF MBA								

IV SEMESTER								
Course Code	Course Name	Teaching Hours/ Week			CORE / IDC/DSE/ SEC/OEC/MOOCS	Internal Marks	External Marks	No. of Credits
		Lecture	Practical	Tutorial				
R23DS401	Dynamic Web Programming	4	0	0	Core	30	70	4
DOMAIN SPECIFIC ELECTIVE COURSES (CHOOSE ANY THREE)								
R23DS402E1	Applied Data Analysis	4	0	0	DSE	30	70	4
R23DS402E2	Software Testing and Fault Analysis	4	0	0	DSE	30	70	4
R23DS402E3	Optimization Techniques	4	0	0	DSE	30	70	4
R23DS402E4	Statistical NLP	4	0	0	DSE	30	70	4
R23DS402E5	Information Security	4	0	0	DSE	30	70	4
R23DS402E6	Full Stack Java Programming	4	0	0	DSE	30	70	4
LAB PRACTICALS								
R23DS403	Dynamic Web Programming Lab	0	6	0	Core	30	70	3
ENTREPRENURAL & INNOVATION/IT SKILL RELATED TO DOMAIN SPECIFIC ELECTIVE COURSES (CHOOSE ANY ONE)								
R23DS404E1	No SQL Databases	3	0	0	SEC	30	70	3
R23DS404E2	Social Networking	3	0	0	SEC	30	70	3
R23DS404E3	Technical Report Writing	3	0	0	SEC	30	70	3
*** CHOOSE MOOCs FROM SWAYAM/NPTEL SOURCES**								
MOOCS								4
PROJECT WORK EVALUATION AND VIVA-VOCE						100		4
TOTAL FOR IV SEMESTER						**180**	**520**	**30**

Note: Students may be allowed to register and appear for MOOCS from the third semester itself. However, students are to complete the MOOCS successfully and submit pass certificate of the same to the University through the Principal of the College concerned for approval and endorsement of the same on grade cards and PCs and ODs as per the regulations of the University.

- **Total number of credits at the end of course:**

S.No	Semester	Credits
1	I Semester	25
2	II Semester	25
3	III Semester	25
4	IV Semester	30
	TOTAL	**105**

- **Procedure to evaluate midterm examinations:**

Two mid examinations will be conducted in every semester**.** Final mid semester marks shall be arrived at by considering the Best of the two mid marks of the examinations.

Note:

For Example:

Marks obtained in first mid: 30
Marks obtained in second mid: 28
Final mid semester Marks: Best of (30,28) = 30

- **Practical:**

*Continuous assessment/ Day to day work	Semester End Exam	Total
30 marks	70 marks	100M

*****Continuous assessment sheet given below.

Note: For practical courses, there shall be a continuous evaluation during the semester for 30 sessional marks and end examination shall be for 70 marks. Day-to-day work in the laboratory shall be evaluated for 30 marks by the concerned laboratory teacher based on the regularity/record/viva. The end examination shall be conducted by the concerned laboratory teacher and external examiner in the subject from other university.

- Internal marks will be awarded by internal examiner only.

Procedure for Project Evaluation and Viva-Voce:

The Project Evaluation and Viva-Voce for 200 marks shall be conducted by a committee consisting of HOD, Project Supervisor and an External Examiner nominated by the University. The Internal Evaluation shall be made by the departmental committee on the basis of review presentation given by each student on the topic of his/her project.