



AMBEDKAR COLLEGE OF ARTS & SCIENCE, WANDOOR
 (Aided by Govt. of Kerala & Affiliated to University of Calicut)
 Wandoor (PO), Pin 679328, Ph: 04931-249666
acaswandoor@gmail.com, Website: www.ambedkarcollegewdr.in

COURSE PLAN

Course code and title	CSC2MN102- INTRODUCTION TO DATA SCIENCE		
Class	BSC COMPUTER SCIENCE	Semester	TWO
Regulation	2024	Academic year	2024-25
Course prerequisites	1. Python Programming 2. Linear Algebra		
Course objectives	This course provides a comprehensive overview of datascience, covering the various types of data and their applications.		
	The students will acquire a deep understanding of exploratory data analysis along with hands-on implementation skills. The curriculum introduces both supervised and unsupervised and techniques of Machine learning.		
	Additionally, the data pre-processing techniques are introduced Overall, the course provides a comprehensive understanding of the fundamental data science principles, guiding students through the data science process and illustrating practical applications.		

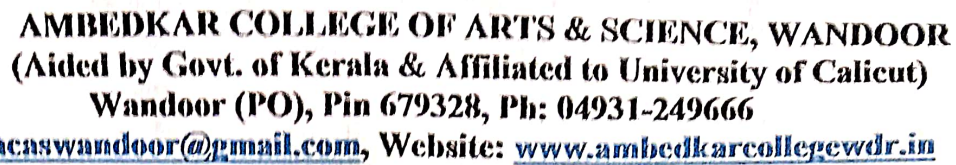
COURSE OUTCOMES

At the end of the course the student would be able to...

CO1	Understand the types of data and the applications of data science
CO2	Analyze the irregularities present in the data and perform data cleaning
CO3	Implement various visualization techniques on different data types
CO4	Create prediction models using supervised techniques
CO5	Assess the similarity among the data using unsupervised techniques.
CO6	Gain insights on advanced data pre- processing techniques

MAPPING OF PROGRAM OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓		✓	✓	✓			✓		
CO2	✓		✓	✓			✓			

[illegible]



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MAPPING OF COURSE OUTCOMES TO PROGRAM EDUCATIONAL OUTCOMES

PROGRAM EDUCATIONAL OUTCOMES	COURSE OUTCOMES					
	CO1	CO2	CO3	CO4	CO5	CO6
PEO1: Development of Leadership Qualities. Graduates will demonstrate Leadership qualities by utilizing their full intellectual potential, engaging with their communities, and contributing to the social, cultural, and economic development of society.						
PEO2: Lifelong Learning and Societal Contribution. Graduates will be equipped with core values and intellectual capabilities enabling them to pursue lifelong learning and meaningfully contribute to societal well-being through innovative thinking and service.		✓	✓	✓		✓
PEO3: Entrepreneurial and Global Competence. Graduates will possess entrepreneurial skills and a global perspective, promoting sustainable national growth through ethical leadership, innovative ventures, and responsible citizenship.			✓	✓		

REFERENCES:

1. O'Neil, Cathy, and Rachel Schutt. Doing data science: Straight talk from the frontline. " O'Reilly Media, Inc.", 2013.
2. Han, Jiawei, et al. Data Mining: Concepts and Techniques. Netherlands, Elsevier Science, 2011.
3. Shah, Chirag. A Hands-On Introduction to Data Science. United Kingdom, Cambridge University Press, 2020.
4. Chopra, Rohan, et al. Data Science with Python: Combine Python with Machine Learning Principles to Discover Hidden Patterns in Raw Data. United Kingdom, Packt Publishing, 2019.

e-learning resources	• https://www.coursera.org/specializations/jhu-data-science
Mode of Evaluation	Internal Examination (30%) End Semester Examination (70%)
Faculty	Jasmine MT, Assistant Professor/ Department of Computer Science
e-mail id	Jasminefasil123@gmail.com



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COURSE PLAN CSC2MN102- INTRODUCTION TO DATA SCIENCE

No of lecture hours	Planned Date	Topics to be covered		Reference/ Teaching aids and methods	Actual date	Weekly review
MODULE I - Introduction to Data Science						
1	11-12-2024	Introduction to Data: Types of Data – Structured Data, Semi Structured Data, Unstructured Data and Data Streams		WB / T	12/10/24	
2	12-12-2024	Statistical Data Types - Quantitative Data (Ratio and Interval Scale) and Qualitative Data (Nominal and ordinal)		WB / T	13/10/24	
3	13-12-2024	Basic Methods of Data Analysis- Descriptive Data Analysis, Diagnostic Data Analysis or Exploratory Data Analysis, Inferential Data Analysis and Predictive Analysis.		WB / T	16/12/24	
4	16-12-2024	Inferential Statistics: Statistical Inference		WB / T	18/12/24	
5	17-12-2024	Population and Sample, Statistical Modeling		WB / T	18/12/24	
6	18-12-2024	Probability Distributions – Normal, Uniform		WB / T	20/12/24	
7	19-12-2024	Introduction to Data Science: Big Data and Data Science		WB / T	20/12/24	
8	20-12-2024	Data Science Process		WB / T	20/01/25	
9	30-12-2024	Applications of Data Science		WB / T	20/01/25	
10	31-12-2024	Issues and challenges in Data Science		WB / T	20/01/25	
Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	Review by Principal	
10	10	06-01-25				
MODULE II - Exploratory Data Analysis						
11	01-01-2025	Exploratory Data Analysis (EDA)		PPT / WB	06/01/25	
12	03-01-2025	Types of EDA - Univariate non-graphical		PPT / WB	06/01/25	
13	06-01-2025	Multivariate non- graphical, Univariate graphical		PPT / WB	08/01/25	
14	07-01-2025	Multivariate graphical		PPT / WB	09/01/25	
15	08-01-2025	Methods of EDA – Descriptive Statistics and Data Visualization		PPT / WB	10/01/25	
16	09-01-2025	Descriptive Statistics		PPT / WB	20/01/25	
17	10-01-2025	Measures of Central Tendencies		WB / T	20/01/25	
18	13-01-2025	Measures of Central Tendencies		WB / T	20/01/25	
19	14-01-2025	Dispersion		WB / T	22/01/25	
20	15-01-2025	Skewness and Kurtosis.		PPT / WB	23/01/25	
21	16-01-2025	Data Visualization - Histograms , Box plots		PPT / WB	24/01/25	



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22	17-01-2025	Quantile-Quantile plots Scatter plots, Heat map			WS/T
23	20-01-2025	Bubble chart, Bar chart, Distribution plot			WS/PPT
24	21-01-2025	Pair plot, Line graph, Pie chart, Area chart			PPT/WS
Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	
14	13	31/01/25	<i>[Signature]</i>	<i>[Signature]</i>	AS Review by Principal In charge of Ambedkar College of Arts & Science Wandoor

MODULE III - Data Preparation for Analysis

25	22-01-2025	Data Cleaning: Handling Missing and Noisy Data			WS/T	3/2/25
26	23-01-2025	Removing outliers			WS/T	3/2/25
27	24-01-2025	Data Integration			WS/T	3/2/25
28	27-01-2025	Data Transformation			WS/T	5/2/25
29	28-01-2025	Standardization, Normalization			WS/T	4/2/25
30	29-01-2025	Data Reduction: Dimensionality Reduction - Principal Component Analysis			WS/T	3/2/25
Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		
6	5	7/2/25	<i>[Signature]</i>	<i>[Signature]</i>	Review by Principal Asst. Professor In charge of Principal Ambedkar College of Arts & Science Wandoor	

MODULE IV Introduction to Machine Learning

31	30-01-2025	Machine Learning Algorithms, Supervised Learning, Classification, Regression			PPT/WS	10/2/25
32	31-01-2025	Unsupervised Learning - Clustering, Dimensionality Reduction			PPT/WS	10/2/25
33	03-02-2025	Reinforcement Learning			PPT/WS	12/2/25
34	04-02-2025	Test /Train Split, Model Training			PPT/WS	13/2/25
35	05-02-2025	Bias and Variance			WS/PPT	14/2/25
36	06-02-2025	Overfitting and Underfitting			WS/PPT	17/2/25
37	07-02-2025	Evaluation			T/WS	17/2/25
38	10-02-2025	Evaluation			T/WS	19/2/25
39	11-02-2025	Linear Regression			T/WS	20/2/25
40	12-02-2025	k-Nearest Neighbors (k-NN)			T/WS	21/2/25
41	13-02-2025	k-means Clustering			PPT/WS	20/2/25
42	14-02-2025	Naive Bayes			PPT/WS	24/2/25
43	17-02-2025	Application of Naive Bayes - Spam Filtering			PPT/WS	27/2/25
44	18-02-2025	Singular Value Decomposition			PPT/WS	28/2/25
45	19-02-2025	Applications of Supervised, Unsupervised and Reinforcement Learning			PPT/WS	3/3/25
Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		

9/3/25

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Asst. Professor
In charge of Principal
Ambedkar College of Arts & Science
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15	124					
MODULE V - Hands-on Data Structures: Practical Applications, Case Study and Course Project						
46	20-02-2025 - 08-03-2025	Implementation of the concepts or the algorithms learned [Binary Classification, Linear Regression, k-NN, k-means clustering, Spam Filtering]				
47	10-03-2025 - 14-03-2025	Case study: Perform exploratory data analysis on a real world dataset using Python. Using appropriate Python packages parse, clean and visualize the data .				
48	15-03-2025 - 28-03-2025	Capstone/Course Project: Perform an end-to-end project of the data science process.				
Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		Review by Principal

FACULTY

[Signature]

HOD

[Signature]
SHARSHAD AMEER
 Asst. Professor & Head
 Department of Mathematics
 Ambedkar College of Arts & Science
 Wandoor, Malappuram Dt.

PRINCIPAL

[Signature]
Ambedkar College of Arts & Science
 Wandoor
 in charge of Principal
 Ambedkar College of Arts & Science
 Wandoor

Course outcome-Program outcome Mapping Table

CSC2MN102- INTRODUCTION TO DATA SCIENCE		Cognitiv e level	Program outcomes									
			1- Low Correlation 2- Moderate Correlation 3- High Correlation									
			P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10
DIRECT METHOD												
CO1	Understand the types of data and the applications of data science	Rememb er	3		2	2				2		



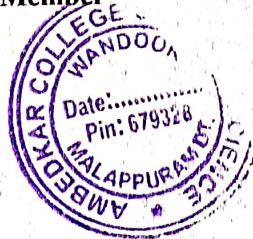
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CO2	Analyze the irregularities present in the data and perform data cleaning	Apply	3		2	3	2		2			
CO3	Implement various visualization techniques on different data types	Apply & Analyze	2		3	3	2			1		
CO4	Create prediction models using supervised techniques	Create	2		3	2	2					
CO5	Assess the similarity among the data using unsupervised techniques.	Innovate	2		3	2	1					
CO6	Gain insights on advanced data pre-processing techniques	Innovate	3		2	2	1		1			
INDIRECT METHOD												
Class Room contests	Analyze & Create	3		3	2	1		2	1			

Course Faculty

IQAC Member



HoD

SHARSHAD AMEERA.U

Asst. Professor & Head
 Department of Mathematics
 Ambedkar College of Arts & Science
 Wandoor, Malappuram District.



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COURSE PRE-ANALYSIS

Dear Students,

Welcome back to class, I would like to thank all of you for sparing your time in filling up this Course Pre-Analysis survey for the effective conduct of Computer Aided Design and Manufacturing Course. As you know that this survey is meant for knowing the knowledge level of the students with respect to this course, please fill it very carefully. At this juncture, I am glad to welcome the suggestions from you all (if any).

Rate your prior knowledge about the topics mentioned below

Course Outcomes	Description	Rate your prior knowledge about the topics			
		Excellent (4)	Good (3)	Moderate (2)	Fair (1)
CO1	Understand the types of data and the applications of data science				✓
CO2	Analyze the irregularities present in the data and perform data cleaning				✓
CO3	Implement various visualization techniques on different data types				✓
CO4	Create prediction models using supervised techniques				✓
CO5	Assess the similarity among the data using unsupervised techniques.				✓
CO6	Gain insights on advanced data pre-processing techniques				✓

Name of the student:

Hiba . K T

Signature of the student

[Signature]



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Syllabus

Module	Unit	Content	Hrs	Marks (70)
I		Introduction to Data Science	10	10
	1	Introduction to Data: Types of Data – Structured Data, SemiStructured Data, Unstructured Data and Data Streams, Statistical Data Types - Quantitative Data (Ratio and Interval Scale) and Qualitative Data (Nominal and ordinal)	2	
	2	Basic Methods of Data Analysis- Descriptive Data Analysis, Diagnostic Data Analysis or Exploratory Data Analysis, Inferential Data Analysis and Predictive Analysis.	1	
	3	Inferential Statistics: Statistical Inference, Population and Sample, Statistical Modeling, Probability Distributions – Normal, Uniform	3	
	4	Introduction to Data Science: Big Data and Data Science , Data Science Process	2	
	5	Applications of Data Science , Issues and challenges in Data Science	2	
II		Exploratory Data Analysis	14	10
	6	Exploratory Data Analysis (EDA) : Types of EDA - Univariate non-graphical, Multivariate non- graphical, Univariate graphical, and, Multivariate graphical. Methods of EDA – Descriptive Statistics and Data Visualization	5	
	7	Descriptive Statistics - Measures of Central Tendencies, Dispersion, Skewness and Kurtosis.	5	
	8	Data Visualization - Histograms , Box plots , Quantile-Quantile plots Scatter plots , Heat map, Bubble chart , Bar chart, Distribution plot , Pair plot , Line graph , Pie chart, Area chart	4	
III		Data Preparation for Analysis	6	15



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	9	Data Cleaning: Handling Missing and Noisy Data, Removing outliers	2	
	10	Data Integration	1	
	11	Data Transformation :Standardization, Normalization	2	
	12	Data Reduction : Dimensionality Reduction-Principal Component Analysis	1	
	Introduction to Machine Learning		15	15
	13	Machine Learning Algorithms : Supervised Learning– Classification, Regression , Unsupervised Learning–Clustering, Dimensionality Reduction , Reinforcement Learning	3	
	14	Test/Train Split, Model Training, Bias and Variance, Overfitting and Underfitting	3	
	15	Evaluation	2	
	16	Linear Regression	1	
IV	17	k-Nearest Neighbors(k-NN)	1	
	18	k-means Clustering	1	
	19	Naive Bayes	1	
	20	Application of Naïve Bayes- Spam Filtering	1	
	21	Singular Value Decomposition	1	
	22	Applications of Supervised, Unsupervised and Reinforcement Learning	1	
	Hands-on Data Structures:		30	20
	Practical Applications, Case Study and Course Project			



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V	1	Implementation of the concepts or the algorithms learned [Binary Classification, Linear Regression, k-NN, k-means clustering, Spam Filtering]	15	
	2	Case study: Perform exploratory data analysis on a real world dataset using Python. Using appropriate Python packages parse, clean and visualize the data.	5	
	3	Capstone/Course Project: Perform an end-to-end project of the data science process.		

Reference Books:

1. O'Neil, Cathy, and Rachel Schutt. Doing data science: Straight talk from the frontline. " O'Reilly Media, Inc.", 2013
2. Han, Jiawei, et al. Data Mining: Concepts and Techniques. Netherlands, Elsevier Science, 2011.
3. Shah, Chirag. A Hands-On Introduction to Data Science. United Kingdom, Cambridge University Press, 2020.
4. Chopra, Rohan, et al. Data Science with Python: Combine Python with Machine Learning Principles to Discover Hidden Patterns in Raw Data. United Kingdom, Packt Publishing, 2019.

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Course outcome –Program Specific outcome Mapping Table

Course outcomes	Program Specific outcomes					
	PSO1	PSO2	PSO3	PSO4	PSO4	PSO6
CO1	✓					✓
CO2	✓		✓			
CO3			✓			
CO4		✓	✓	✓		✓
CO5		✓	✓	✓		✓
CO6						✓

Course Faculty

IQAC Member



HoD

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DIRECT ASSESSMENT OF COURSE OUTCOMES

INTERNAL ASSESSMENT TEST 35 MARKS				
Objective	To Identify What Students Have Learned and also to identify students strength and weakness			
To file	Answer scripts	Frequency	Once in a semester on dates specified by University	
Format	.			
Evaluation	Based on answer given in the scripts			
ASSIGNMENT: 2MARKS				
Objective	To enhance students understanding of a complex structural problems			
Product	Hand written assignment sheets			
Frequency	Semester			
Format	-			
Evaluation	Based on rubrics			
Criteria	No. of assignments: 1, Submit on or before the date of submission			
END SEMESTER EXAMINATION 100 MARKS				
Objective	To assess the each student's knowledge of the course			
Product	Result analysis			
Frequency	Semester			
Format	Part –A 10 x 3 =24 marks, Part –B 8 x 6 = 36 marks, Part –C 1 x 10 = 10 marks Total marks = 70, Duration : 2hours			
Evaluation	Based on answer given in the scripts			
Marks out of 100	30-50	50- 70	71-100	0-50
Levels of attainment	1	2	3	Counseling / Coaching classes.
Frequency	Semester			
Format	Part –A 10 x 2 =20 marks, Part –B 5 x 16 = 80 marks, Total marks = 100, Duration : 3hours			
Evaluation	Based on answer given in the scripts			
Marks out of 100	30-50	50- 70	71-100	0-50
Levels of attainment	1	2	3	Counseling / Coaching classes.



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COURSE EXIT SURVEY

Dear Students,

We are seeking valuable feedback from you, to improve upon the course contents, coverage, methods of instruction and teaching learning methods of the course you have learned for the semester, kindly rate the process of delivering the syllabus from 1 – 5 scale (5 Excellent, 4-Very good, 3-Good 2-Average, 1-Below average)

Name	Hkbh. KT		Reg No	SA3A2F		
Course Code	CSC2MN102	Name of Course	INTRODUCTION TO DATA SCIENCE			
Dept	COMPUTER SCIENCE	Semester	II	Date	8-3-22	
Sl No	Questioners	1	2	3	4	5
1.	Quality of the Course content				✓	
2.	Suitability of Contents beyond syllabus topics				✓	
3.	Relevance of the text& Reference books suggested			✓		
4.	Support of Library for the Course contents				✓	
5.	Course delivery methods by teacher				✓	
6.	Use of ICT tools in class			✓		
7.	Relevance of Syllabus topics for your placement			✓		
8.	Usefulness of the topics for life				✓	
9.	Content stimulates intellectually				✓	
10.	Fairness of the internal evaluation system				✓	
11.	Assignments, competitive evaluation methods				✓	
12.	Topics covered supported by online resources & LMS				✓	
I am able to achieve the following (Relating to Course outcomes)						
CO1	Understand the types of data and the applications of data science				✓	
CO2	Analyze the irregularities present in the data and perform data cleaning				✓	
CO3	Implement various visualization techniques on different data types			✓		
CO4	Create prediction models using supervised techniques				✓	

CO5	Assess the similarity among the data using unsupervised techniques.			✓		
CO6	Gain insights on advanced data pre- processing techniques			✓		
Suggestions for						
Inclusions			Deletion of topics			

Signature of the Student

[Signature]

Class Advisor

[Signature]

HoD

[Signature]

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Attainment Levels of COs

Course Name: CSC2MN102- INTRODUCTION TO DATA SCIENCE				
Assessment Methods	Target-Attainment Levels			Attainment
Internal Assessment	Level 1	50% of students scoring more than 35% marks in internal assessment tools		LEVEL 03
	Level 2	60% of students scoring more than 35% marks in internal assessment tools		
	Level 3	70% of students scoring more than 35% marks in internal assessment tools		
Assessment Methods	Target-Attainment Levels			Attainment
University Assessment	Level 1	50% of students scoring more than 35% marks in UE assessment tools		LEVEL 03
	Level 2	60% of students scoring more than 35% marks in UE assessment tools		
	Level 3	70% of students scoring more than 35% marks in UE assessment tools		



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DEPARTMENT OF MATHEMATICS
CO ATTAINMENT - IA TEST MARKS (EVEN SEM. 2024-2025)

Semester: II

Course: CSC2MN102- INTRODUCTION TO DATA SCIENCE

Name of the faculty member: JASMINE MT

Sl. No.	Name of the student	REG NO	IA TEST	COURSE OUTCOMES	
			Q1 TO Q14	IA TEST	
			CO1 TO CO6	CO1 TO CO6	
Max. Marks			35	%age	Y/N
1	ADITHYA U	UFAYSMT001	19	54	Y
2	AMRITHA . P . T	UFAYSMT002	33	94	Y
3	ANIYA P P	UFAYSMT003	34	97	Y
4	ANUSREE C T	UFAYSMT004	33	94	Y
5	AYISHA NAHRIN CP	UFAYSMT005	35	100	Y
6	FADHIL A K	UFAYSMT006	33	94	Y
7	FIDA MK	UFAYSMT007	35	100	Y
8	HIBA K T	UFAYSMT008	21	60	Y
9	MAHMOOD MUHYUDHEEN CK	UFAYSMT009	34	97	Y
10	MAJIDA SHERIN K K	UFAYSMT010	14	40	Y
11	MUHAMMED ASMIL A P	UFAYSMT011	21	60	Y
12	MUHAMMED FAHIZ T P	UFAYSMT012	22	63	Y
13	MUHAMMED SALIM NK	UFAYSMT013	34	97	Y
14	NAJA NASRIN . P	UFAYSMT014	20	57	Y
15	NIDHA SAFRY M	UFAYSMT015	26	74	Y
16	RABIYATHUL ADHBIYYA	UFAYSMT016	28	80	Y
17	RIFANA K	UFAYSMT017	23	66	Y
18	RIHANA K	UFAYSMT018	22	63	Y
19	SHAHANA T P	UFAYSMT019	18	51	Y
20	SHIBIYA JEBIN T H	UFAYSMT020	35	100	Y
21	SULAIKHA FAHMA P	UFAYSMT021	28	80	Y
22	THANHA FATHIMA K	UFAYSMT022	18	51	Y
23	AJNAH HANAN K P	UFAYBCM002	20	57	Y
24	ASLA A M	UFAYBCM013	21	60	Y



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DEPARTMENT OF MATHEMATICS

25	FATHIMA SHAHANA P K	UFAYBCM023	33	94	Y
26	JISMI . K	UFAYBCM027	19	54	Y
27	NAJA RAHMA V P	UFAYBCM037	27	77	Y
28	SAHALA . K	UFAYBCM044	18	51	Y
29	SAHANA . K	UFAYBCM045	16	46	Y
30	DIYA.VP	UFAYAEC014	10	29	N
31	HESNA NAZRIN.KP	UFAYAEG028	19	54	Y
32	SHAHANA SHERIN.MT	UFAYAEG049	8	23	N
				30	
				93.75	
			FOR LAL (CSC1MN102)	CO1 to CO6	
			TARGET: 50% OF STUDENTS WILL SCORE 35% OF MARKS	93.8	



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DEPARTMENT OF MATHEMATICS

CO ATTAINMENT - ASSIGNMENT(EVEN SEM. 2024-2025)

Semester: II Course: CSC2MN102- INTRODUCTION TO DATA SCIENCE

Name of the faculty member: JASMINE MT

Sl. No.	Name of the student	REG NO	ASSIGNMENT	SEMINAR	COURSE OUTCOMES		
			CO1 to CO6	CO1 to CO6	CO1 - CO6	CO1 - CO6	CO1 - CO6
		Max. Marks	2	3	%age	Y/N	Y/N
1	ADITHYA U	UFAYSMT001	2	3	100	Y	Y
2	AMRITHA . P . T	UFAYSMT002	2	3	100	Y	Y
3	ANIYA P P	UFAYSMT003	2	3	100	Y	Y
4	ANUSREE C T	UFAYSMT004	2	3	100	Y	Y
5	AYISHA NAHRIN CP	UFAYSMT005	2	3	100	Y	Y
6	FADHIL A K	UFAYSMT006	2	2	100	Y	66.67
7	FIDA MK	UFAYSMT007	2	2	100	Y	66.67
8	HIBA K T	UFAYSMT008	2	2	100	Y	66.67
9	CK	UFAYSMT009	2	3	100	Y	Y
10	MAJIDA SHERIN K K	UFAYSMT010	2	3	100	Y	Y
11	MUHAMMED ASMIL A P	UFAYSMT011	2	2	100	Y	66.67
12	MUHAMMED FAHIZ T P	UFAYSMT012	2	2	100	Y	66.67
13	MUHAMMED SALIM NK	UFAYSMT013	2	3	100	Y	Y
14	NAJA NASRIN . P	UFAYSMT014	2	3	100	Y	Y
15	NIDHA SAFRY M	UFAYSMT015	2	3	100	Y	Y
16	RABIYATHUL ADHBIYYA	UFAYSMT016	2	0	100	Y	0 N

17	RIFANA K	UFAYHMT017	2	0	100	Y	0	N
18	RIHANA K	UFAYHMT018	2	0	100	Y	0	N
19	SHAHANA T P	UFAYHMT019	2	3	100	Y	100	Y
20	SHIBIYA JEBIN T H	UFAYHMT020	2	3	100	Y	100	Y
21	SULAKHIA FATHIMA P	UFAYHMT021	2	0	100	Y	0	N
22	THANIHA FATHIMA K	UFAYHMT022	2	3	100	Y	100	Y
23	AJNAH HANAN K P	UFAYHMT002	2	2	100	Y	66.67	Y
24	ASLA A M	UFAYHMT013	2	3	100	Y	100	Y
25	FATHIMA SHAHANA P K	UFAYHMT023	2	3	100	Y	100	Y
26	JISMI . K	UFAYHMT027	2	2	100	Y	66.67	Y
27	NAJA RAHIMA V P	UFAYHMT037	2	3	100	Y	100	Y
28	SAHALA . K	UFAYHMT044	2	2	100	Y	66.67	Y
29	SAHANA . K	UFAYHMT045	2	2	100	Y	66.67	Y
30	DIYA.VP	UFAYAE014	2	1	100	Y	33.33	N
31	HESNA NAZRIN.KP	UFAYAE028	2	3	100	Y	100	Y
32	SHAHANA SHERIN.MT	UFAYAE049	2	0	100	Y	0	N

32	26
100.00	81.25

FOR LAL (CSC2MN102)	CO1 TO 6	CO1 TO 6
	100.00	81.25

TARGET: 1) 90% OF STUDENTS WILL SCORE 35% OF MARKS IN ASSIGNMENT



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DEPARTMENT OF MATHEMATICS

DIRECT ASSESSMENT METHOD - CO ATTAINMENT (EVEN SEM . 2024-2025)

Semester: II

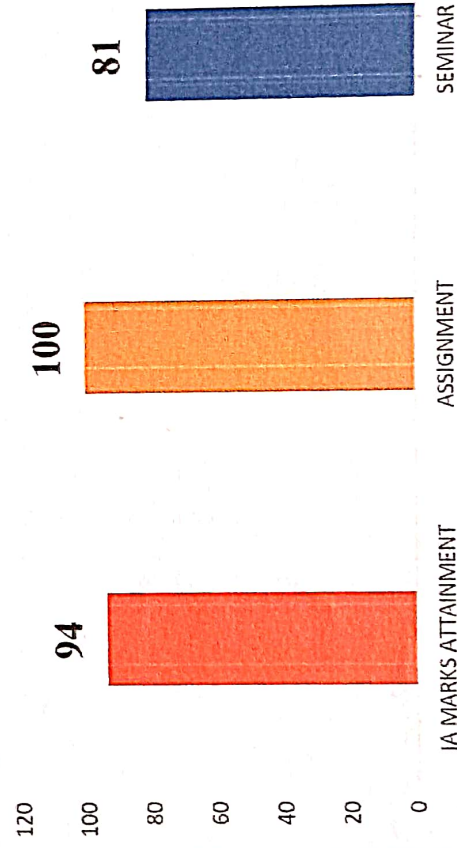
Course: CSC2MN102- INTRODUCTION TO DATA
SCIENCE

Name of the faculty member: JASMINE MT

TARGET: 60% ATTAINMENT

COs	CO1 to CO6
IA MARKS ATTAINMENT	94
ASSIGNMENT	100
SEMINAR	81
AVERAGE	92

COURSE OUTCOMES





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DEPARTMENT OF MATHEMATICS
COURSE EXIT SURVEY RESPONSES (EVEN SEM - 2024-2025)
Course: CSC2MN102- INTRODUCTION TO DATA SCIENCE

Semester: II

Name of the faculty member: JASMINE MT

Sl. No.	NAME OF THE STUDENT	REG NO	Are you able to Understand the types of data and the applications of data science	Are you able to Analyze the Irregularities present in the data and perform data cleaning	Are you able to Implement various visualization techniques on different data types	Are you able to Create prediction models using supervised techniques	Are you able to Assess the similarity among the data using unsupervised techniques.	Are you able to Gain insights on advanced data pre-processing techniques
COURSE OUTCOMES			CO1	CO2	CO2	CO4	CO5	CO6
1	ADITHYAN U	UFAYSMT001	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
2	AMRITHA P T	UFAYSMT002	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
3	ANITHA P P	UFAYSMT003	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
4	ANUSHEE C T	UFAYSMT004	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
5	AYISHA NAHIN CP	UFAYSMT005	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
6	FAHIL A K	UFAYSMT006	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
7	FIDA YK	UFAYSMT007	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
8	HIBA K T	UFAYSMT008	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
9	MAHMOOD MUHTUSHEEN CK	UFAYSMT009	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
10	MAJIDA SHEFIN K K	UFAYSMT010	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
11	MUHAMMED ASMITA P	UFAYSMT011	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
12	MUHAMMED FAHIL T P	UFAYSMT012	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
13	MUHAMMED SALIM NK	UFAYSMT013	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
14	NAJIA NASRIN P	UFAYSMT014	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
15	NIDHA SAFRIN M	UFAYSMT015	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
16	RABIYATHUL ADHERIYA	UFAYSMT016	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)	3 (Good)	3 (Good)

17	RIFANA K	UFAYSMT017	4 (Very Good)	4 (Very Good)	3 (Good)	3 (Good)	3 (Good)	3 (Good)
18	RJHANA K	UFAYSMT018	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
19	SHAHANA T P	UFAYSMT019	4 (Very Good)	3 (Good)	4 (Very Good)	3 (Good)	3 (Good)	4 (Very Good)
20	SHIBIYA JEBIN T H	UFAYSMT020	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
21	SULA IKHA FAHMA P	UFAYSMT021	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
22	THANHA FATHIMA K	UFAYSMT022	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
23	AJNAH HANAN K P	UFAYBCM002	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
24	ASLA A M	UFAYBCM013	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
25	FATHIMA SHAHANA P K	UFAYBCM023	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
26	JISMI . K	UFAYBCM027	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
27	NAJA RAHMA V P	UFAYBCM037	4 (Very Good)	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)	4 (Very Good)
28	SAHALA . K	UFAYBCM044	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
29	SAHANA . K	UFAYBCM045	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)
30	DIYA.VP	UFAYAE014	4 (Very Good)	3 (Good)	4 (Very Good)	3 (Good)	3 (Good)	4 (Very Good)
31	HESNA NAZRIN.KP	UFAYAE028	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
32	SHAHANA SHERIN.MT	UFAYAE049	4 (Very Good)	3 (Good)	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)
No. of graded "0"			0	0	0	0	0	0
No. of graded "1"			0	0	0	0	0	0
No. of graded "2"			0	0	0	0	0	0
No. of graded "3"			0	3	2	4	6	2
No. of graded "4"			12	17	21	19	20	21
No. of graded "5"			20	12	9	9	6	9



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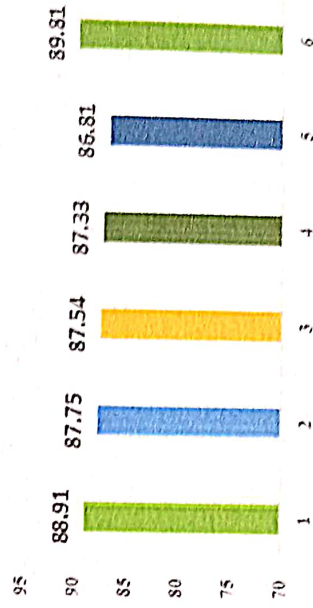
DEPARTMENT OF MATHEMATICS

COURSE EXIT SURVEY RESPONSES (EVEN SEM - 2024-2025)

Semester: II		Course: CSC2MN102- INTRODUCTION TO DATA SCIENCE													
Name of the faculty member: JASMINE MT															
CO No.	CO description	Course Exit Survey Questions					No. of students given the ratings					Total Responses	Weighted Average	CC Max. Count	%age CO attainment
		0	1	2	3	4	5								
CO1	Understand the types of data and the applications of data science	0	0	0	0	12	20	3.25	5	77.25					
CO2	Analyze the irregularities present in the data and perform data cleaning	0	0	0	3	17	12	3.51	5	72.11					
CO3	Implement various visualization techniques on different data types	0	0	0	2	21	9	3.55	5	71.05					
CO4	Create prediction models using supervised techniques	0	0	0	4	19	9	3.50	5	70.00					
CO5	Assess the similarity among the data using unsupervised techniques	0	0	0	6	20	6	3.37	5	67.37					
CO6	Gain insights on advanced data pre-processing techniques	0	0	1	5	21	9	3.84	5	75.84					

100

CO Assessment method	CO1	CO2	CO3	CO4	CO5	CO6
Direct method (IA Test, Assignment/quiz)	92	92	92	92	92	93
Weightage (80%)	73	73	73	73	73	74
Indirect method (Course Exit Survey)	77.83	72.11	71.05	70.00	67.37	76.84
Weightage (20%)	15.58	14.42	14.21	14.00	13.47	15.37
Final CO Attainment	88.91	87.75	87.54	87.33	86.81	89.81





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DEPARTMENT OF MATHEMATICS

CO-PO-PSO MAPPING (EVEN SEM . 2024-2025)

Semester: II

Name of the faculty member: JASMINE MT

Course: CSC2MN102- INTRODUCTION TO DATA SCIENCE

(I) CO Attainment

A: Direct assessment (80%)-Tests, Assignment, Viva

B: Indirect assessment (20%)-Course end survey

COs	Mapping of POs	Mapping of PSOs	Direct Assessment (a)	Indirect Assessment (b)	Overall Attainment 0.8 (a) + 0.2(b)	Target (%)	Attainment
CO1	PO1,PO3,PO4,PO5 & PO8	PSO1 & PSO6	92	77.89	89	75	YES
CO2	PO1, PO3, PO4 & PO7	PSO1 & PSO3	92	72.11	88		
CO3	PO1,PO3,PO4,PO5 & PO8	PSO3	92	71.05	88		
CO4	PO1, PO3, PO4 & PO5	PSO2,PSO3,PSO4 & PSO6	92	70.00	87		
CO5	PO1, PO3, PO4 & PO5	PSO2,PSO3,PSO4 & PSO6	92	67.37	87		
CO6	PO1, PO3, PO4,PO5 & PO7	PSO6	88	76.84	86		

FACULTY

HOD

PRINCIPAL

(Signature)

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