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	STA3C03-Probability Distributions and Sampling Theory		
Class	BSc Mathematics	Semester	III
Regulation	2019	Academic year	2024-2025
Course prerequisites	Students should have a basic understanding of algebra, calculus, probability theory, and descriptive statistics		
Course objectives	• To understand and analyze various probability distributions and their applications in real-world scenarios. • To apply limit theorems and sampling techniques for statistical inference and decision-making. • To derive and interpret sampling distributions for estimating population parameters using classical statistical tools.		

COURSE OUTCOMES

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

CO1	Describe various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties
CO2	Apply the Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions are met.
CO3	Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and compare their applicability to different real-world scenarios
CO4	Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers in both independent and identically distributed (iid) cases.
CO5	Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing.

MAPPING OF PROGRAM OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓		✓		✓			✓		
CO2	✓		✓		✓			✓		
CO3	✓	✓	✓	✓	✓			✓	✓	✓
CO4	✓		✓		✓			✓		
CO5	✓		✓		✓		✓	✓		
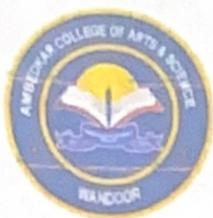
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PO1	Knowledge Acquisition	PO6	Ethics & Social Responsibility
PO2	Communication & Leadership	PO7	Research, Innovation & Entrepreneurship
PO3	Professional Skills	PO8	Lifelong Learning
PO4	Digital Intelligence	PO9	Global Perspective
PO5	Scientific awareness & Critical Thinking	PO10	Democratic Co-existence

PROGRAM SPECIFIC OUTCOMES

PSO1	Apply mathematical and statistical models to analyze real-world engineering and data-driven problems.
PSO2	Develop data interpretation and decision-making skills through statistical inference techniques.
PSO3	**Utilize probability and sampling theory in the design, simulation, and optimization of systems or algorithms**

MAPPING OF COURSE OUTCOMES TO PROGRAM EDUCATIONAL OUTCOMES

PROGRAM EDUCATIONAL OUTCOMES	COURSE OUTCOMES				
	CO1	CO2	CO3	CO4	CO5
PEO1 Development of Leadership Qualities	✓	✓	✓	✓	✓
PEO2 Lifelong learning and Social contributions	✓	✓	✓	✓	✓
PEO3 Entrepreneurial and Global Competence	✓	✓	✓		✓

References
TEXT BOOKS:
1. Rohatgi V. K. and Saleh, A.K. Md. E. (2009): An Introduction to Probability and Statistics. 2nd Edn. (Reprint) John Wiley and Sons.
2. S.C.Gupta and V. K. Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand and Sons
**REFERENCES:**
1. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007): Introduction to the Theory of Statistics, 3rd Edn., (Reprint), Tata McGraw-Hill Pub. Co. Ltd
2. John E Freund, Mathematical Statistics, Pearson Edn, New Delhi
3. Cochran W.G. (1984): Sampling Techniques 3r Ed.), Wiley Eastern

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e-learning resources	Khan Academy – Probability and Statistics
Mode of Evaluation	Internal (15 Marks) End Semester Examination (60)
Faculty	Hima KC, Assistant Professor/ Department of Statistics
e-mail id	himakc2000@gmail.com
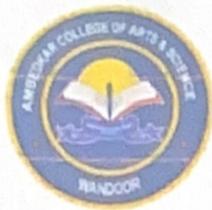
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No of lecture hours	Planned Date	Topics to be covered		Reference/ Teaching aids and methods	Actual date	Weekly review
		MODULE I - Standard Distributions				
1	17/07/2024	Introduction to Probability Distributions (Discrete vs Continuous)		T/WB	17-7-24	✓
2	18/07/2024	Bernoulli Distribution – Definition, Mean, Variance, MGF		T/WB	18-7-24	✓
3	19/07/2024	Bernoulli Distribution – Problem Solving		T/WB	19-7-24	✓
4	19/07/2024	Binomial Distribution – Definition, Parameters, Properties		T/WB	19-7-24	✓
5	23/07/2024	Binomial Distribution – Mean, Variance, MGF		T/WB	23-7-24	✓
6	24/07/2024	Binomial Distribution – Problem Solving		T/WB/PPT	24-7-24	✓
7	25/07/2024	Poisson Distribution – Definition, Properties		T/WB	25-7-24	✓
8	26/07/2024	Poisson Distribution – Mean, Variance, MGF		T/WB	26-7-24	✓
9	26/07/2024	Poisson Distribution – Problem Solving		T/WB	26-7-24	✓
10	30/07/2024	Geometric Distribution – Definition, Mean, Variance		T/WB/PPT	26-7-24	✓
11	31/07/2024	Geometric Distribution – Problem Solving		T/WB/PPT	26-7-24	✓
12	01/08/2024	Negative Binomial Distribution – Definition, Comparison with Geometric		T/WB	6-08-24	✓
13	02/08/2024	Discrete Uniform Distribution – Definition, Mean, Variance		T/WB	06-8-24	✓
14	02/08/2024	Discrete Uniform Distribution – MGF and Problem Solving		T/WB	7-08-24	✓
15	06/08/2024	Continuous Uniform Distribution – Definition, Mean, Variance		T/WB	7-08-24	✓
16	07/08/2024	Continuous Uniform Distribution – MGF and Problem Solving		T/WB/PPT	7-08-24	✓
17	08/08/2024	Exponential Distribution – Definition and Properties		T/WB/PPT	0-8-8-24	✓
18	09/08/2024	Exponential Distribution – Applications and Problem Solving		T/WB/PPT	9-8-24	✓
19	09/08/2024	Normal Distribution – Definition and Properties		T/WB	9-8-24	✓
20	13/08/2024	Normal Distribution – Standardization and Real-world Use Cases		T/WB	13-08-24	✓

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21	14/08/2024	Normal Distribution – Problem Solving		T/WB	14-8-24	*(sign)*
22	16/08/2024	Gamma Distribution – Definition, Shape/Scale Parameters		T/WB	16-8-24	*(sign)*
23	16/08/2024	Gamma Distribution – Mean, Variance, MGF, Problems		T/WB	16-8-24	*(sign)*
24	21/08/2024	Lognormal Distribution – Definition and Context		T/WB	21-8-24	*(sign)*
25	22/08/2024	Beta Distribution – Definition and Context		T/WB	22-08-24	*(sign)*
26	23/08/2024	Pareto Distribution – Definition and Applications		T/WB/PPT	23-8-24	*(sign)*
27	23/08/2024	Cauchy Distribution – Definition and Characteristics		T/WB/PPT	23-8-24	*(sign)*
28	27/08/2024	Mixed Practice: Discrete Distributions		T/WB/PPT	27-8-24	*(sign)*
29	29/08/2024	Mixed Practice: Continuous Distributions		T/WB/PPT	29-08-24	*(sign)*
30	30/08/2024	Review, Summary, and Quiz		PPT	30-8-24	*(sign)*

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	Review by Principal		
30	30.	30-8-24	*(sign)*	*(sign)*	*(check mark)*		

MODULE II – Limit Theorems

31	03/09/2024	Introduction to Limit Theorems – Importance and Real-world Motivation		T/WB	3-9-24	*(sign)*
32	04/09/2024	Chebyshev's Inequality – Statement and Intuition		T/WB	4-9-24	*(sign)*
33	05/09/2024	Chebyshev's Inequality – Problem Solving		T/WB	5-9-24	*(sign)*
34	06/09/2024	Sequence of Random Variables – Concept and Examples		T/WB	6-9-24	*(sign)*
35	06/09/2024	Statistical Concepts – Parameters vs Statistics		T/WB	6-9-24	*(sign)*
36	10/09/2024	Sample Mean – Definition, Expectation, Variance		T/WB	6-9-24	*(sign)*
37	11/09/2024	Sample Variance – Definition and Properties		T/WB/PPT	10-9-24	*(sign)*
38	12/09/2024	Relationship Between Population and Sample Parameters		T/WB/PPT	10-9-24	*(sign)*
39	13/09/2024	Convergence in Probability – Definition and Key Ideas		T/WB/PPT	12-9-24	*(sign)*
40	13/09/2024	Convergence in Probability – Illustrative Examples		T/WB/PPT	12-9-24	*(sign)*
41	18/09/2024	Weak Law of Large Numbers (WLLN) – Concept and Intuition		T/WB	12-09-24	*(sign)*
42	19/09/2024	WLLN – Derivation and Simple Proof (i.i.d. case)		T/WB	24-09-24	*(sign)*
43	20/09/2024	WLLN – Applications and Problem Solving		T/WB	" "	*(sign)*
44	20/09/2024	Bernoulli's Law of Large Numbers –		T/WB	" "	*(sign)*

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		Statement and Motivation			
45	24/09/2024	Bernoulli's Law – Numerical Example and Applications	T/WB	" "	𝒮𝒢𝓁𝓁
46	25/09/2024	Comparison: WLLN vs Bernoulli Law	T/WB	25-9-24	𝒮𝒢𝓁𝓁
47	26/09/2024	Convergence in Distribution – Definition and Motivation	T/WB	26-9-24	𝒮𝒢𝓁𝓁
48	27/09/2024	Convergence in Distribution – Real-world Examples	T/WB	27-09-24	𝒮𝒢𝓁𝓁
49	27/09/2024	Convergence Types Recap – Probability vs Distribution	T/WB	27-09-24	𝒮𝒢𝓁𝓁
50	01/10/2024	Central Limit Theorem (CLT) – Lindberg-Levy Version – Statement and Importance	T/WB/PPT	1-10-24	𝒮𝒢𝓁𝓁
51	03/10/2024	CLT – Assumptions and Applications in Sampling	T/WB/PPT	3-10-24	𝒮𝒢𝓁𝓁
52	04/10/2024	CLT – Illustrative Examples and Problem Solving	T/WB	4-10-24	𝒮𝒢𝓁𝓁
53	04/10/2024	Mixed Problem Solving – Inequality, LLNs, and CLT	T/WB	" "	𝒮𝒢𝓁𝓁
54	08/10/2024	Summary of All Convergence Concepts with Key Differences	T/WB	8-10-24	𝒮𝒢𝓁𝓁
55	09/10/2024	Review, Summary, and Quiz	T	9-10-24	𝒮𝒢𝓁𝓁

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	Review by Principal
25	25	9-10-24	[signature]	[signature]	✓

		UNIT III - Sampling Methods			
56	10/10/2024	Introduction to Sampling – Population vs Sample, Purpose of Sampling	T/WB	10-10-24	𝒮𝒢𝓁𝓁
57	11/10/2024	Overview of Sampling Techniques – SRS, Systematic, Stratified, Cluster	T/WB	11-10-24	𝒮𝒢𝓁𝓁
58	11/10/2024	Simple Random Sampling With Replacement – Concept, Procedure	T/WB	" "	𝒮𝒢𝓁𝓁
59	15/10/2024	SRS With Replacement – Estimation of Mean and Variance, Examples	T/WB	15-10-24	𝒮𝒢𝓁𝓁
60	16/10/2024	Simple Random Sampling Without Replacement – Concept, Procedure	T/WB	16-10-24	𝒮𝒢𝓁𝓁
61	17/10/2024	SRS Without Replacement – Estimation of Mean and Variance, Examples	T/WB/PPT	17-10-24	𝒮𝒢𝓁𝓁
62	18/10/2024	Systematic Sampling – Concept, Advantages, Limitations	T/WB/PPT	18-10-24	𝒮𝒢𝓁𝓁
63	18/10/2024	Stratified Sampling – Concept, Types of Allocation, Applications	T/WB/PPT	" "	𝒮𝒢𝓁𝓁

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| 64 | 22/10/2024 | Cluster Sampling – Concept, Comparison with Stratified Sampling | | T/WB/PPT | 22-10-24 | |
| 65 | 23/10/2024 | Summary, Comparison of Methods, Practice Problems & Quick Quiz | | T | 23-10-24 | |

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	Review by Principal		
10	10	23-10-24					

MODULE IV - Sampling Distributions

66	24/10/2024	Introduction to Sampling Distributions – Definition, Importance		T/WB	24-10-24	
67	25/10/2024	Understanding Statistics and Standard Error – Overview and Concepts		T/WB	25-10-24	
68	25/10/2024	Sampling from a Normal Distribution – Properties and Procedure		T/WB	" "	
69	29/10/2024	Sampling from a Normal Distribution – Examples and Problem Solving		T/WB	29-10-24	
70	30/10/2024	Distribution of Sample Mean – Concept, Definition, and Properties		T/WB	30-10-24	
71	01/11/2024	Distribution of Sample Mean – Derivation and Applications		T/WB/PPT	1-11-24	
72	01/11/2024	Distribution of Sample Mean – Examples and Problems		T/WB/PPT	" "	
73	05/11/2024	Distribution of Sample Variance – Concept, Definition, and Example		T/WB/PPT	5-11-24	
74	06/11/2024	Distribution of Sample Variance – Derivation and Applications		T/WB	6-11-24	
75	07/11/2024	Chi-Square Distribution – Definition, Properties, and Applications		T/WB	7-11-24	
76	08/11/2024	Chi-Square Distribution – Derivations and Relationships		T/WB	8-11-24	
77	08/11/2024	Chi-Square Distribution – Example Problems		T/WB	" "	
78	12/11/2024	t-Distribution – Definition, Properties, and Applications		T/WB	12-11-24	
79	13/11/2024	t-Distribution – Derivation and Relationship with Normal Distribution		T/WB	13-11-24	
80	14/11/2024	t-Distribution – Example Problems and Applications		T/WB/PPT	14-11-24	
81	15/11/2024	F-Distribution – Definition, Properties, and Applications		T/WB/PPT	15-11-24	
82	15/11/2024	F-Distribution – Derivation and Relationship with t and Chi-Square		T/WB	15-11-24	

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83	19/11/2024	F-Distribution – Example Problems and Applications		T/WB	19-11-24	
84	20/11/2024	Relationships Between Normal, t, Chi-Square, and F Distributions		T/WB	20-11-24	
85	21/11/2024	Understanding the Central Limit Theorem and its Role in Sampling Distributions		T/WB	21-11-24	
86	22/11/2024	Application of the Central Limit Theorem – Real-world Examples		T/WB	22-11-24	
87	22/11/2024	Comparison Between Sampling Distributions (Normal, t, Chi-Square, F)		T/WB	22-11-24	
88	26/11/2024	Problems on Sampling Distributions – Part 1		T/WB	26-11-24	
89	27/11/2024	Problems on Sampling Distributions – Part 2		T/WB	27-11-24	
90	28/11/2024	Module Review – Key Formulas, Concepts, and Practice Test		T	28-11-24	

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD	Review by Principal
25	25	28-11-24			

COURSE PLAN BCM4C04 QUANTITATIVE TECHNIQUES FOR BUSINESS

FACULTY

HOD

PRINCIPAL
Asst. Professor
in charge of Principal
Ambedkar College of Arts & Science
Wandoor

BCM4C04 QUANTITATIVE TECHNIQUES FOR BUSINESS	Cognitive level	Program outcomes 1- Low Correlation 2- Moderate correlation 3- High correlation											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
DIRECT METHOD													
CO1	Describe various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties	Remember	3		2		3		2	1	1			
CO2	Apply the Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions	Apply	3	2	3	2	3		3	2	2			

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		are met.											
CO3	Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and compare their applicability to different real-world scenarios	Apply & Analyze	3	2	3		3	2	3	2	2	1	
CO4	Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers in both independent and identically distributed (iid) cases.	Create	3	2	3			3	2	3	2		
CO5	Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing.	Innovate	2	3	2	3	3	3	3	2	1	1	
INDIRECT METHOD													MA
Class Room contests		Analyze & Create	3	2	3			3	2	3	2	2	

Course outcome –Program outcome Mapping Table

Course Faculty   IQAC Member   HoD

SHAKSHAD AMEERA.U
Asst. Professor & Head
Department of Mathematics
Ambedkar College of Arts & Science
Wandoor, Malappuram Dt.

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

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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	Describe various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties			✓	
CO2	Apply the Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions are met.	✓			
CO3	Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and compare their applicability to different real-world scenarios		✓		
CO4	Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers in both independent and identically distributed (iid) cases.			✓	
CO5	Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing.				✓
	MAPPING OF PROGRAM OUTCOMES				

Name of the student:

Signature of the student

Fidha V

Fidha

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Course outcome –Program Specific outcome Mapping Table

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

Course Faculty

QAC Member

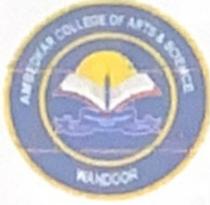**HoD** SHARSHAD AMEERA.U
Asst. Professor & Head
Department of Mathematics
Ambedkar College of Arts Science
Wandoor, Malappuram.
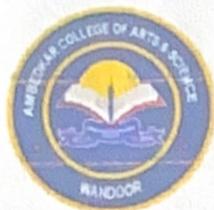
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DIRECT ASSESSMENT OF COURSE OUTCOMES

INTERNAL ASSESSMENT TEST ......MARKS ( )			
Objective	To Identify What Students Have Learned and also to identify students strength and weakness		
To file	Answer scripts	**Frequency**	2 times in a semester on dates specified by University
Format	.		
Evaluation	Based on answer given in the scripts		
ASSIG NMENT: .... MARKS			
Objective	To enhance students understanding of a complex structural problems		
Product	Hand written assignment sheets		
Frequency	Monthly or after completing improvement test		
Format	Questions from both question papers		
Evaluation	Based on rubrics		
Criteria	No. of assignments: 3 to 5, Submit on or before the date of submission		
END SEMESTER EXAMINATION 75 MARKS (Reduced to 60 Marks)			
Objective	**To assess the each student's knowledge of the course**		
Product	Result analysis		
Frequency	Semester		
Format	Part –A =20 marks, Part –B= 30 marks, Part C=10 Marks Total marks = 100, Duration : 2 hours		
Evaluation	Based on answer given in the scripts		
Marks out of 100	22.5-37.5	37.5- 52.5	52.5-75	0-37.5
Levels of attainment	1	2	3	Counseling / Coaching classes.

Attainment Levels of COs

STA3C03-Probability Distributions and sampling theory

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	
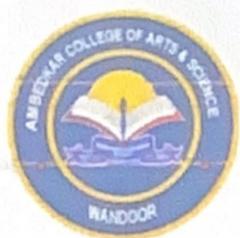
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DEPARTMENT OF STATISTICS
CO ATTAINMENT - IA TEST MARKS (ODD SEM. 2024-2025)

Sem III

Course:STA3C03-Probability Distributions and sampling theory

Name of the faculty member: HIMA KC

Sl. No.	Name of the student	REG NO	IA TEST Q1 TO Q14 CO1 TO CO5	COURSE OUTCOMES IA TEST CO1 TO CO5	
		Max. Marks	30	%age	Y/N
1	ANEENA.K.P	UFAXSMT001	27	90	Y
2	ASNA SHERIN V T	UFAXSMT002	27	90	Y
3	AYISHA HANNA C K	UFAXSMT003	28	93	Y
4	FATHIMA FIDHA K	UFAXSMT004	29	97	Y
5	FATHIMA MINNATH K	UFAXSMT005	27	90	Y
6	FATHIMA NASNA V T.	UFAXSMT006	30	100	Y
7	FATHIMA SHIFA. M.K	UFAXSMT007	28	93	Y
8	FATHIMA THAMJEEDA	UFAXSMT008	29	97	Y
9	FIDA PK	UFAXSMT009	28	93	Y
10	FIDHA V	UFAXSMT010	30	100	Y
11	HAFLA. T. K	UFAXSMT011	17	57	Y
12	MUFEEDA SHIFA. M.P	UFAXSMT012	15	50	Y
13	NUBLA SHANA . P	UFAXSMT013	21	70	Y
14	RABEEBA K P	UFAXSMT014	11	37	Y
15	RASHA JALEEL P	UFAXSMT015	22	73	Y
16	RISHWANA E K	UFAXSMT016	30	100	Y
17	ABOOBACKER NAFIH T T	UFAXSMT017	10	33	N
18	JAMSHEEDALI.C.P	UFAXSMT018	28	93	Y
19	MOHAMMED AMALSHAN T	UFAXSMT019	10	33	N
20	MUHAMMAD RISHWAN K	UFAXSMT020	9	30	N
21	MUHAMMED ANSHIF . T	UFAXSMT021	18	60	Y
22	MUHAMMED SHAHID.V	UFAXSMT022	15	50	Y
23	ANAYA U P	UFAXSMT023	24	80	Y
24	ANJIMA SHAJI	UFAXSMT024	29	97	Y
25	ARYA VS	UFAXSMT025	28	93	Y
26	HANEENA K	UFAXSMT026	29	97	Y
27	KRISHNENDHU K	UFAXSMT027	15	50	Y
28	RIYA . P	UFAXSMT028	12	40	Y
29	SWATHIKRISHNA A K	UFAXSMT029	16	53	Y
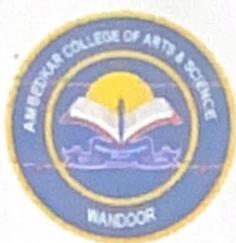
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DEPARTMENT OF STATISTICS

30	SHAMSIYA PARWEEN	UFAXSMT032	15	50	Y
31					
				27	
	FOR LAL (MAT5B08)			87.10	
		CO1 to CO5			
	TARGET: 50% C	87.1			

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DEPARTMENT OF STATISTICS

CO ATTAINMENT - ASSIGNEMENT(ODD SEM. 2024-2025)

Sem.III

Name of the faculty member: HIMA KC

Sl. No.	Name of the student	REG NO	ASSIGNMENT CO1 to CO5	SEMINAR CO4 to CO5	ATTENDANCE CE	COURSE OUTCOMES CO1 - 5 %age	CO1 - 5 Y/N	CO4 - 5 %age	CO4 - 5 Y/N	ATTENDANCE %age	ATTENDANCE Y/N
		Max. Marks	3	3	3						
1	ANEENA.K.P	UFAXSMT001	3	3	3	100	Y	100	Y	100	Y
2	ASNA SHERIN V T	UFAXSMT002	3	3	3	100	Y	100	Y	100	Y
3	AYISHA HANNA C K	UFAXSMT003	3	3	3	100	Y	100	Y	100	Y
4	FATHIMA FIDHA K	UFAXSMT004	3	3	3	100	Y	100	Y	100	Y
5	FATHIMA MINNATH K	UFAXSMT005	3	3	3	100	Y	100	Y	100	Y
6	FATHIMA NASNA V T.	UFAXSMT006	3	3	3	100	Y	100	Y	100	Y
7	FATHIMA SHIFA. M.K	UFAXSMT007	3	3	3	100	Y	100	Y	100	Y
8	FATHIMA THAMJEEDA	UFAXSMT008	3	3	3	100	Y	100	Y	100	Y
9	FIDA PK	UFAXSMT009	3	3	2	100	Y	100	Y	66.6667	Y
10	FIDHA V	UFAXSMT010	3	3	3	100	Y	100	Y	100	Y
11	HAFLA. T. K	UFAXSMT011	3	3	3	100	Y	100	Y	100	Y
12	MUFEEDA SHIFA. M.P	UFAXSMT012	3	3	2	100	Y	100	Y	66.6667	Y
13	NUBLA SHANA . P	UFAXSMT013	3	3	3	100	Y	100	Y	100	Y
14	RABEEBA K P	UFAXSMT014	3	3	3	100	Y	100	Y	100	Y
15	RASHA JALEEL P	UFAXSMT015	3	3	3	100	Y	100	Y	100	Y
16	RISHWANA E K	UFAXSMT016	3	3	3	100	Y	100	Y	100	Y

17	ABOOBACKER NAFIH T T	UFAXSMT017	3	3		1	100	Y	100	Y	33.3333	Y
18	JAMSHEEDALI.C.P	UFAXSMT018	3	3		3	100	Y	100	Y	100	Y
19	MOHAMMED AMALSHAN T	UFAXSMT019	3	3		1	100	Y	100	Y	33.3333	Y
20	MUHAMMAD RISHWAN K	UFAXSMT020	3	3		2	100	Y	100	Y	66.6667	Y
21	MUHAMMED ANSHIF . T	UFAXSMT021	3	3		2	100	Y	100	Y	66.6667	Y
22	MUHAMMED SHAHID.V	UFAXSMT022	3	3		3	100	Y	100	Y	100	Y
23	ANAYA U P	UFAXSMT023	3	3		3	100	Y	100	Y	100	Y
24	ANJIMA SHAJI	UFAXSMT024	3	3		3	100	Y	100	Y	100	Y
25	ARYA VS	UFAXSMT025	3	3		3	100	Y	100	Y	100	Y
26	HANEENA K	UFAXSMT026	3	3		3	100	Y	100	Y	100	Y
27	KRISHNENDHU K	UFAXSMT027	3	3		3	100	Y	100	Y	100	Y
28	RIYA . P	UFAXSMT028	3	3		3	100	Y	100	Y	100	Y
29	SWATHIKRISHNA A K	UFAXSMT029	3	3		3	100	Y	100	Y	100	Y
30	SHAMSIYA PARWEEN	UFAXSMT032	3	3		3	100	Y	100	Y	100	Y
							30	100.00	30	100.00	30	100.00

FOR LAL (MTS5B08)	CO1 TO 3	CO4 TO 5	ATTENDANCE
	100.00	100.00	100.00

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

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DEPARTMENT OF STATISTICS

CO ATTAINMENT - THIRD SEMESTER EXAM MARKS (ODD SEM . 2024-2025)

Sem. III   Course:STA3C03-Probability Distributions and sampling theory

S+A 9+A 6:F+	Name of the student	REG NO	COURSE OUTCOM O 1 TO CO	CO ATTAINMENT CO 1 TO CO5	
			Max. Marks		
			30	%age	Y/N
1	ANEENA.K.P	UFAXSMT001	24	80	Y
2	ASNA SHERIN V T	UFAXSMT002	21	70	Y
3	AYISHA HANNA C K	UFAXSMT003	21	70	Y
4	FATHIMA FIDHA K	UFAXSMT004	18	60	Y
5	FATHIMA MINNATH K	UFAXSMT005	27	90	Y
6	FATHIMA NASNA V T.	UFAXSMT006	21	70	Y
7	FATHIMA SHIFA. M.K	UFAXSMT007	18	60	Y
8	FATHIMA THAMJEEDA	UFAXSMT008	27	90	Y
9	FIDA PK	UFAXSMT009	18	60	Y
10	FIDHA V	UFAXSMT010	21	70	Y
11	HAFLA. T. K	UFAXSMT011	15	50	Y
12	MUFEEDA SHIFA. M.P	UFAXSMT012	12	40	Y
13	NUBLA SHANA . P	UFAXSMT013	18	60	Y
14	RABEEBA K P	UFAXSMT014	12	40	Y
15	RASHA JALEEL P	UFAXSMT015	18	60	Y
16	RISHWANA E K	UFAXSMT016	21	70	Y
17	ABOOBACKER NAFIH T T	UFAXSMT017	0	0	N
18	JAMSHEEDALI.C.P	UFAXSMT018	18	60	Y
19	MOHAMMED AMALSHAN T	UFAXSMT019	12	40	Y
20	MUHAMMAD RISHWAN K	UFAXSMT020	0	0	N
21	MUHAMMED ANSHIF . T	UFAXSMT021	12	40	Y
22	MUHAMMED SHAHID.V	UFAXSMT022	12	40	Y
23	ANAYA U P	UFAXSMT023	15	50	Y
24	ANJIMA SHAJI	UFAXSMT024	21	70	Y
25	ARYA VS	UFAXSMT025	12	40	Y
26	HANEENA K	UFAXSMT026	21	70	Y
27	KRISHNENDHU K	UFAXSMT027	12	40	Y
28	RIYA . P	UFAXSMT028	12	40	Y
29	SWATHIKRISHNA A K	UFAXSMT029	12	40	Y
30	SHAMSIYA PARWEEN	UFAXSMT032	0	0	N
				27	

				90.00	
		FOR L&L (MTS5B08)	CO1 to CO5		
			90.00		
		TARGET: 75% OF STUDENTS WILL SCORE 35% OF MARKS			

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DEPARTMENT OF STATISTICS

DIRECT ASSESSMENT METHOD - CO ATTAINMENT (ODD SEM. 2023-2024)

Semester: III

Name of the faculty member: HIMA KC

Course:STA3C03-Probability Distributions and sampling the(

TARGET: 60% ATTAINMENT

COs	CO1 to CO5
IA MARKS ATTAINMENT	87
ASSIGNMENT	100
SEMINAR	100
ATTENDANCE	100
FINAL EXAM ATTAINMENT	90
AVERAGE	95

COURSE OUTCOMES

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DEPARTMENT OF STATISTICS

COURSE EXIT SURVEY RESPONSES (ODD SEM . 2024-2025)

Semester: III

Course: STA3C03-Probability Distributions and sampling theory

Name of the faculty member: HIMA KC

Sl. No.	NAME OF THE STUDENT	REG NO	CO1: Are you able to Understand various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties	CO2: Are you able to apply Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions are met.	CO3: Are you able to Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and compare their applicability to different real-world scenarios	CO4: Are you able to Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers in both independent and identically distributed (iid) cases.	CO5: Are you able to Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing
	COURSE OUTCOMES		CO1	CO2	CO3	CO4	CO5
1	ANEENA.K.P	UFAXSMT001	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (Excellent)
2	ASNA SHERIN V T	UFAXSMT002	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (Excellent)	4 (Very Good)
3	AYISHA HANNA C K	UFAXSMT003	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
4	FATHIMA FIDHA K	UFAXSMT004	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
5	FATHIMA MINNATH K	UFAXSMT005	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
6	FATHIMA NASNA V T.	UFAXSMT006	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
7	FATHIMA SHIFA. M.K	UFAXSMT007	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
8	FATHIMA THAMJEEDA	UFAXSMT008	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
9	FIDA PK	UFAXSMT009	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)
10	FIDHA V	UFAXSMT010	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
11	HAFLA. T. K	UFAXSMT011	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
12	MUFEEDA SHIFA. M.P	UFAXSMT012	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)
13	NUBLA SHANA. P	UFAXSMT013	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)

| #	Name	ID					
14	RABEEBA K P	UFAXSMT014	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
15	RASHA JALEEL P	UFAXSMT015	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
16	RISHWANA E K	UFAXSMT016	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
17	ABOOBACKER NAFIH T T	UFAXSMT017	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
18	JAMSHEEDALI.C.P	UFAXSMT018	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
19	MOHAMMED AMALSHAN T	UFAXSMT019	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
20	MUHAMMAD RISHWAN K	UFAXSMT020	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
21	MUHAMMED ANSHIF . T	UFAXSMT021	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
22	MUHAMMED SHAHID.V	UFAXSMT022	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
23	ANAYA U P	UFAXSMT023	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
24	ANJIMA SHAJI	UFAXSMT024	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
25	ARYA VS	UFAXSMT025	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
26	HANEENA K	UFAXSMT026	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
27	KRISHNENDHU K	UFAXSMT027	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
28	RIYA . P	UFAXSMT028	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
29	SWATHIKRISHNA A K	UFAXSMT029	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)
30	SHAMSIYA PARWEEN	UFAXSMT032	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
		No. of graded "0"	0	0	0	0	0
		No. of graded "1"	0	0	0	0	0
		No. of graded "2"	0	0	0	0	0
		No. of graded "3"	0	0	0	0	0
		No. of graded "4"	7	7	7	6	6

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DEPARTMENT OF STATISTICS

COURSE EXIT SURVEY RESPONSES (ODD SEM. 2024-2025)

Semester:III

Name of the faculty member: HIMA KC

Course:STA3C03-Probability Distributions and sampling theory

CO No.	CO description	Course Exit Survey Questions	No. of students given the ratings						Total Responses	Weighted Average	CO Max. Count	%age CO attainment
			0	1	2	3	4	5				
CO1	Describe various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties	Are you able to Understand various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties	0	0	0	0	7	23	30	3.76	5	75.26
CO2	Apply the Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions are met.	Are you able to apply Central Limit Theorem to solve problems involving sample means and variances, including situations where the theorem's assumptions are met.	0	0	0	0	7	23	30	3.76	5	75.26
CO3	Analyze sampling methods, Including simple random sampling, stratified sampling, and cluster sampling, compare their applicability to different	Are you able to Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and compare their applicability to different	0	0	0	0	7	23	30	3.76	5	75.26
CO4	Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers	Are you able to Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers	0	0	0	0	6	24	30	3.79	5	75.79
CO5	Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing.	Are you able to Explain the relationships between sampling distributions such as the chi-square, t-distribution, and F-distribution and use them in hypothesis testing	0	0	0	0	6	24	30	3.79	5	75.79

CO Assessment method	CO1	CO2	CO3	CO4	CO5
Direct method (IA Test, Assignment/quiz and exam)	95	95	95	95	95
Weightage (80%)	76	76	76	76	76
Indirect method (Course Exit Survey)	75.26	75.26	75.26	75.79	75.79
Weightage (20%)	15.05	15.05	15.05	15.16	15.16
Final CO Attainment	91.39	91.39	91.39	91.49	91.49
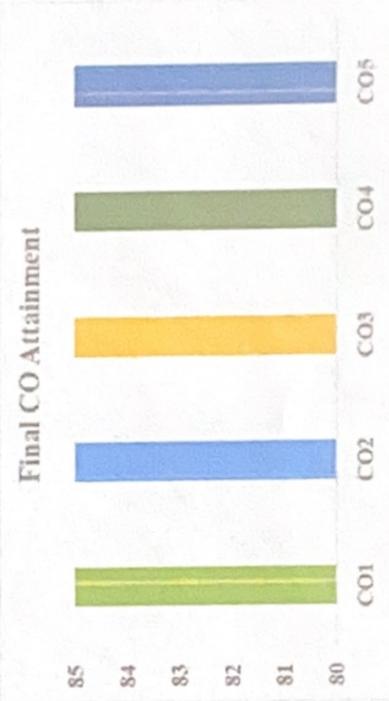
Final CO Attainment

	CO1	CO2	CO3	CO4	CO5

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Semester: III

Name of the faculty member: HIMA KC

DEPARTMENT OF CIVIL ENGINEERING

CO-PO-PSO MAPPING (ODD SEM . 2023-2024)

Course:STA3C03-Probability Distributions and sampling theory

(I) CO Attainment

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

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 & PO9	PSO1, PSO2 & PSO3	95	75.26	91		
CO2	PO1, PO3, PO5 & PO7	PSO1, PSO2 & PSO3	95	75.26	91		
CO3	PO1, PO2, PO3, PO5 & PO9	PSO1, PSO2 & PSO3	95	75.26	91	75	YES
CO4	PO1, PO3, PO4, PO5& PO8	PSO1, PSO2 & PSO3	95	75.79	91		
CO5	PO1, PO4, PO5, PO7 & PO8	PSO1, PSO2 & PSO3	95	75.79	91		

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