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**	2023-2024
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	✓		✓		✓		✓	✓		

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

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

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

e-learning resources	**Khan Academy – Probability and Statistics**
Mode of Evaluation	Internal (15 Marks) End Semester Examination (60)
Faculty	**Hima P, Assistant Professor/ Department of Statistics**
e-mail id	himakc2000@gmail.com

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

No of lecture hours	Planned Date	Topics to be covered		Reference/ Teaching aids and methods	Actual date	Weekly review
		MODULE I - Standard Distributions				
1	03/08/2023	Introduction to Probability Distributions (Discrete vs Continuous)		T/WB	03-8-23	
2	04/08/2023	Bernoulli Distribution – Definition, Mean, Variance, MGF		T/WB	04-8-23	
3	04/08/2023	Bernoulli Distribution – Problem Solving		T/WB	" "	
4	07/08/2023	Binomial Distribution – Definition, Parameters, Properties		T/WB	7-08-23	
5	08/08/2023	Binomial Distribution – Mean, Variance, MGF		T/WB	" "	
6	10/08/2023	Binomial Distribution – Problem Solving		T/WB/PPT	08-08-23	
7	11/08/2023	Poisson Distribution – Definition, Properties			" "	
8	11/08/2023	Poisson Distribution – Mean, Variance, MGF			14-08-23	
9	14/08/2023	Poisson Distribution – Problem Solving			14-08-23	
10	17/08/2023	Geometric Distribution – Definition, Mean, Variance		T/WB/PPT	17-08-23	
11	18/08/2023	Geometric Distribution – Problem Solving		T/WB/PPT	18-8-23	
12	18/08/2023	Negative Binomial Distribution – Definition, Comparison with Geometric		T/WB	18-8-23	
13	21/08/2023	Discrete Uniform Distribution – Definition, Mean, Variance		T/WB	21-8-23	
14	22/08/2023	Discrete Uniform Distribution – MGF and Problem Solving		T/WB	22-08-23	
15	24/08/2023	Continuous Uniform Distribution – Definition, Mean, Variance		T/WB	24-08-23	
16	25/08/2023	Continuous Uniform Distribution – MGF and Problem Solving		T/WB/PPT	" "	
17	25/08/2023	Exponential Distribution – Definition and Properties		T/WB/PPT	" "	
18	01/09/2023	Exponential Distribution – Applications and Problem Solving		T/WB/PPT	04-9-23	
19	01/09/2023	Normal Distribution – Definition and Properties		T/WB	" "	
20	04/09/2023	Normal Distribution – Standardization and Real-world Use Cases		T/WB	" "	

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

21	05/09/2023	Normal Distribution – Problem Solving		T/WB	5-9-23	
22	07/09/2023	Gamma Distribution – Definition, Shape/Scale Parameters		T/WB	7-9-23	
23	08/09/2023	Gamma Distribution – Mean, Variance, MGF, Problems		T/WB	8-9-23	
24	08/09/2023	Lognormal Distribution – Definition and Context		T/WB	" "	
25	11/09/2023	Beta Distribution – Definition and Context		T/WB	11-09-23	
26	12/09/2023	Pareto Distribution – Definition and Applications		T/WB/PPT	" "	
27	14/09/2023	Cauchy Distribution – Definition and Characteristics		T/WB/PPT	14-9-23	
28	15/09/2023	Mixed Practice: Discrete Distributions		T/WB/PPT	15-9-23	
29	18/09/2023	Mixed Practice: Continuous Distributions		T/WB/PPT	18-9-23	
30	19/09/2023	Review, Summary, and Quiz		PPT	19-9-23	

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		Review by Principal
30	19/9/23	30				

MODULE II – Limit Theorems

31	21/09/2023	Introduction to Limit Theorems – Importance and Real-world Motivation		T/WB	21-9-23	
32	25/09/2023	Chebyshev's Inequality – Statement and Intuition		T/WB	25-9-23	
33	26/09/2023	Chebyshev's Inequality – Problem Solving		T/WB	26-9-23	
34	28/09/2023	Sequence of Random Variables – Concept and Examples		T/WB	" "	
35	29/09/2023	Statistical Concepts – Parameters vs Statistics		T/WB	29-9-23	
36	29/09/2023	Sample Mean – Definition, Expectation, Variance		T/WB	" "	
37	03/10/2023	Sample Variance – Definition and Properties		T/WB/PPT	3-10-23	
38	05/10/2023	Relationship Between Population and Sample Parameters		T/WB/PPT	" "	
39	06/10/2023	Convergence in Probability – Definition and Key Ideas		T/WB/PPT	05-10-23	
40	06/10/2023	Convergence in Probability – Illustrative Examples		T/WB/PPT	" "	
41	09/10/2023	Weak Law of Large Numbers (WLLN) – Concept and Intuition		T/WB	06-10-23	
42	10/10/2023	WLLN – Derivation and Simple Proof (i.i.d. case)		T/WB	" "	
43	12/10/2023	WLLN – Applications and Problem Solving		T/WB	" "	
44	13/10/2023	Bernoulli's Law of Large Numbers –		T/WB	16-10-23	

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

		Statement and Motivation				
45	13/10/2023	Bernoulli's Law – Numerical Example and Applications		T/WB	〃 〃	
46	16/10/2023	Comparison: WLLN vs Bernoulli Law		T/WB	17-10-23	
47	17/10/2023	Convergence in Distribution – Definition and Motivation		T/WB	17-10-23	
48	19/10/2023	Convergence in Distribution – Real-world Examples		T/WB	19-10-23	
49	20/10/2023	Convergence Types Recap – Probability vs Distribution		T/WB	20-10-23	
50	26/10/2023	Central Limit Theorem (CLT) – Lindberg-Levy Version – Statement and Importance		T/WB/PPT	26-10-23	
51	27/10/2023	CLT – Assumptions and Applications in Sampling		T/WB/PPT	27-10-23	
52	27/10/2023	CLT – Illustrative Examples and Problem Solving		T/WB	〃 〃	
53	30/10/2023	Mixed Problem Solving – Inequality, LLNs, and CLT		T/WB	30-10-23	
54	31/10/2023	Summary of All Convergence Concepts with Key Differences		T/WB	31-10-23	
55	31/10/2023	Review, Summary, and Quiz		T	〃 〃	

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		Review by Principal	
25	25	31/10/23					

		UNIT III - Sampling Methods				
56	01/12/2023	Introduction to Sampling – Population vs Sample, Purpose of Sampling		T/WB	1-11-23	
57	01/12/2023	Overview of Sampling Techniques – SRS, Systematic, Stratified, Cluster		T/WB	〃 〃	
58	01/12/2023	Simple Random Sampling With Replacement – Concept, Procedure		T/WB	2-11-23	
59	04/12/2023	SRS With Replacement – Estimation of Mean and Variance, Examples		T/WB	3-11-23	
60	05/12/2023	Simple Random Sampling Without Replacement – Concept, Procedure		T/WB	9-11-23	
61	07/12/2023	SRS Without Replacement – Estimation of Mean and Variance, Examples		T/WB/PPT	10-11-23	
62	08/12/2023	Systematic Sampling – Concept, Advantages, Limitations		T/WB/PPT	13-11-23	
63	08/12/2023	Stratified Sampling – Concept, Types of Allocation, Applications		T/WB/PPT	〃 〃	

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

64	11/12/2023	Cluster Sampling – Concept, Comparison with Stratified Sampling			T/WB/PPT	14-11-23	
65	12/12/2023	Summary, Comparison of Methods, Practice Problems & Quick Quiz			T	15-11-23	
Planned hours	**Actual hours**	**Date**	**Sign of Faculty**	**Review by HoD**		**Review by Principal**	
10	10	12/12/24					
	MODULE IV - Sampling Distributions						
66	14/12/2023	Introduction to Sampling Distributions – Definition, Importance			T/WB	16-11-23	
67	15/12/2023	Understanding Statistics and Standard Error – Overview and Concepts			T/WB	17-11-23	
68	15/12/2023	Sampling from a Normal Distribution – Properties and Procedure			T/WB	20-11-23	
69	18/12/2023	Sampling from a Normal Distribution – Examples and Problem Solving			T/WB	21-11-23	
70	19/12/2023	Distribution of Sample Mean – Concept, Definition, and Properties			T/WB	23-11-23	
71	21/12/2023	Distribution of Sample Mean – Derivation and Applications			T/WB/PPT	24-11-23	
72	22/12/2023	Distribution of Sample Mean – Examples and Problems			T/WB/PPT	28-11-23	
73	22/12/2023	Distribution of Sample Variance – Concept, Definition, and Example			T/WB/PPT	" "	
74	26/12/2023	Distribution of Sample Variance – Derivation and Applications			T/WB	28-11-23	
75	28/12/2023	Chi-Square Distribution – Definition, Properties, and Applications			T/WB	30-11-23	
76	29/12/2023	Chi-Square Distribution – Derivations and Relationships			T/WB	1-12-23	
77	29/12/2023	t-Distribution – Definition, Properties, and Applications			T/WB	" "	
78	01/01/2023	t-Distribution – Derivation and Relationship with Normal Distribution			T/WB	4-12-23	
79	01/01/2025	F-Distribution – Definition, Properties, and Applications			T/WB	5-12-23	
80	01/01/2023	F-Distribution – Derivation and Relationship with t and Chi-Square			T/WB/PPT	7-12-23	
81	01/01/2023	F-Distribution – Example Problems and Applications			T/WB/PPT	8-12-23	
82	01/01/2025	Relationships Between Normal, t, Chi-Square,			T/WB	11-12-23	

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

		and F Distributions						
83	01/01/2024	Comparison Between Sampling Distributions (Normal, t, Chi-Square, F)				T/WB	12-12-23	

Planned hours	Actual hours	Date	Sign of Faculty	Review by HoD		Review by Principal
25	25	1/1/2				

COURSE PLAN STA3C03-Probability Distributions and Sampling Theory

FACULTY HOD PRINCIPAL

SHARSHAD ANZEPALLI
Asst. Professor & Head
Department of Mathematics
Ambedkar College of Arts & Science
Wandoor, Malappuram DT

AMBEDKAR COLLEGE OF ARTS & SCIENCE MALAPPURAM DT. WANDOOR

PRINCIPAL AMBEDKAR COLLEGE OF ARTS & SCIENCE WANDOOR, MALAPPURAM DT

Course outcome –Program outcome Mapping Table

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 are met.	Apply	3	2	3	2	3		3	2	2			
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														M
Class Room contests		Analyze & Create	3	2	3			3	2	3	2	2		

Course Faculty

QAC Member

HoD

SHARSHAD 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 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)

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

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

Syllabus

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 outcome –Program Specific outcome Mapping Table

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

Course Faculty

IQAC Member

HoD

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

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

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 75	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		Attainement
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**		Attainement
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	

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

DEPARTMENT OF STATISTICS

CO ATTAINMENT - IA TEST MARKS (ODD SEM. 2023-2024)

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	ADLA.P	UFAWSMT001	28	93	Y
2	DILSHA.AP	UFAWSMT003	24	80	Y
3	HIBA SHERIN.MK	UFAWSMT005	23	77	Y
4	HUSNA SHERIN.K	UFAWSMT006	23	77	Y
5	MUFEEDA	UFAWSMT007	24	80	Y
6	RINSHA.TP	UFAWSMT008	18	60	Y
7	RISVANA SHERIN	UFAWSMT009	22	73	Y
8	SAHANA MUMTHAZ	UFAWSMT010	15	73	Y
9	SANA.MT	UFAWSMT011	24	50	Y
10	SANA.VK	UFAWSMT012	24	80	Y
11	SANEEBA.K	UFAWSMT013	11	80	Y
12	SHAHMA.CH	UFAWSMT014	15	50	Y
13	SHIFNA SHARIN	UFAWSMT016	22	73	Y
14	FAYIZ.C	UFAWSMT017	18	60	Y
15	MOHAMMED SWALIH.C	UFAWSMT018	10	33	N
16	MUHAMMED SINAN.SV	UFAWSMT019	23	77	Y
17	SHAHID IRFAN.TP	UFAWSMT020	10	33	N
18	ARYA.VR	UFAWSMT021	14	47	Y
19	ASNA RUBA.K	UFAWSMT022	24	80	Y
20	FATHIMA RANNA.T	UFAWSMT024	15	50	Y
21	HANNA MOL	UFAWSMT025	24	80	Y
22	HARSHA MOHANDAS.CM	UFAWSMT026	10	33	N
23	IRFANA SHERIN KALLINGAL	UFAWSMT027	15	50	Y
24	MANYA.P	UFAWSMT028	25	83	Y
25	MINNA.P	UFAWSMT029	30	100	Y
26	RINSHA.V	UFAWSMT030	26	87	Y

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

DEPARTMENT OF STATISTICS

27	RISHIKA.PK	UFAWSMT031	15	50	Y
28	SARANYA.KN	UFAWSMT032	24	80	Y
29	SHIFNA SHERI.K	UFAWSMT033	15	50	Y
30	ABHINAV.P	UFAWSMT034	24	80	Y
31	AKSHAY RAJ.K	UFAWSMT035	23	77	Y
32	MAQBOOL RAASI.PM	UFAWSMT037	22	73	Y
33	SIBIL.V	UFAWSMT038	10	33	N
34	VISHNU.C	UFAWSMT039	10	33	N
35	MASHBOOBA S V	UFAWSMT040	30	100	Y
				30	
				85.71	

FOR LAL (MAT5B08)	CO1 to CO5
TARGET: 50% C	**85.7**

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

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	SEMINAR	ATTENDANCE	COURSE OUTCOMES				ATTENDANCE	
			CO1 to CO5	CO4 to CO5		CO1 - 5		CO4 - 5			
	Max. Marks		3	3	3	%age	Y/N	%age	Y/N	%age	Y/N
1	ADLA.P	UFAWSMT001	3	3	3	100	Y	100	Y	100	Y
2	DILSHA.AP	UFAWSMT003	3	3	3	100	Y	100	Y	100	Y
3	HIBA SHERIN.MK	UFAWSMT005	3	3	2	100	Y	100	Y	66.6667	Y
4	HUSNA SHERIN.K	UFAWSMT006	3	3	3	100	Y	100	Y	100	Y
5	MUFEEDA	UFAWSMT007	3	3	3	100	Y	100	Y	100	Y
6	RINSHA.TP	UFAWSMT008	3	3	3	100	Y	100	Y	100	Y
7	RISVANA SHERIN	UFAWSMT009	3	3	2	100	Y	100	Y	66.6667	Y
8	SAHANA MUMTHAZ	UFAWSMT010	3	3	3	100	Y	100	Y	100	Y
9	SANA.MT	UFAWSMT011	3	3	3	100	Y	100	Y	100	Y
10	SANA.VK	UFAWSMT012	3	3	3	100	Y	100	Y	100	Y
11	SANEEBA.K	UFAWSMT013	3	3	3	100	Y	100	Y	100	Y
12	SHAHMA.CH	UFAWSMT014	3	3	3	100	Y	100	Y	100	Y
13	SHIFNA SHARIN	UFAWSMT016	3	3	3	100	Y	100	Y	100	Y
14	FAYIZ.C	UFAWSMT017	3	3	3	100	Y	100	Y	100	Y
15	MOHAMMED SWALIH.C	UFAWSMT018	3	3	3	100	Y	100	Y	100	Y
16	MUHAMMED SINAN.SV	UFAWSMT019	3	3	3	100	Y	100	Y	100	Y

17	SHAHID IRFAN.TP	UFAWSMT020	3	3	2	100	Y	100	Y	66.6667	Y
18	ARYA.VR	UFAWSMT021	3	3	3	100	Y	100	Y	100	Y
19	ASNA RUBA.K	UFAWSMT022	3	3	3	100	Y	100	Y	100	Y
20	FATHIMA RANNA.T	UFAWSMT024	3	3	3	100	Y	100	Y	100	Y
21	HANNA MOL	UFAWSMT025	3	3	3	100	Y	100	Y	100	Y
22	HARSHA MOHANDAS.CM	UFAWSMT026	3	3	3	100	Y	100	Y	100	Y
23	IRFANA SHERIN KALLINGAL	UFAWSMT027	3	3	3	100	Y	100	Y	100	Y
24	MANYA.P	UFAWSMT028	3	3	3	100	Y	100	Y	100	Y
25	MINNA.P	UFAWSMT029	3	3	2	100	Y	100	Y	66.6667	Y
26	RINSHA.V	UFAWSMT030	3	3	3	100	Y	100	Y	100	Y
27	RISHIKA.PK	UFAWSMT031	3	3	3	100	Y	100	Y	100	Y
28	SARANYA.KN	UFAWSMT032	3	3	3	100	Y	100	Y	100	Y
29	SHIFNA SHERI.K	UFAWSMT033	3	3	3	100	Y	100	Y	100	Y
30	ABHINAV.P	UFAWSMT034	3	3	2	100	Y	100	Y	66.6667	Y
31	AKSHAY RAJ.K	UFAWSMT035	3	3	3	100	Y	100	Y	100	Y
32	MAQBOOL RAASI.PM	UFAWSMT037	3	3	3	100	Y	100	Y	100	Y
33	SIBIL.V	UFAWSMT038	3	3	2	100	Y	100	Y	66.6667	Y
34	VISHNU.C	UFAWSMT039	3	3	2	100	Y	100	Y	66.6667	Y
35	MASHBOOBA S V	UFAWSMT040	3	3	2	100	Y	100	Y	66.6667	Y
			35	35		35		35		35	
			100.00	**100.00**		**100.00**		**100.00**		**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

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

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	CO ATTAINMENT	
			O 1 TO CO	CO 1 TO CO5	
		Max. Marks	30	%age	Y/N
1	ADLA.P	UFAWSMT001	27	90	Y
2	DILSHA.AP	UFAWSMT003	18	60	Y
3	HIBA SHERIN.MK	UFAWSMT005	18	60	Y
4	HUSNA SHERIN.K	UFAWSMT006	27	90	Y
5	MUFEEDA	UFAWSMT007	24	80	Y
6	RINSHA.TP	UFAWSMT008	27	90	Y
7	RISVANA SHERIN	UFAWSMT009	24	80	Y
8	SAHANA MUMTHAZ	UFAWSMT010	21	70	Y
9	SANA.MT	UFAWSMT011	24	80	Y
10	SANA.VK	UFAWSMT012	18	60	Y
11	SANEEBA.K	UFAWSMT013	15	50	Y
12	SHAHMA.CH	UFAWSMT014	18	60	Y
13	SHIFNA SHARIN	UFAWSMT016	18	60	Y
14	FAYIZ.C	UFAWSMT017	24	80	Y
15	MOHAMMED SWALIH.C	UFAWSMT018	18	60	Y
16	MUHAMMED SINAN.SV	UFAWSMT019	21	70	Y
17	SHAHID IRFAN.TP	UFAWSMT020	18	60	Y
18	ARYA.VR	UFAWSMT021	24	80	Y
19	ASNA RUBA.K	UFAWSMT022	21	70	Y
20	FATHIMA RANNA.T	UFAWSMT024	21	70	Y
21	HANNA MOL	UFAWSMT025	21	70	Y
22	HARSHA MOHANDAS.CM	UFAWSMT026	0	0	N
23	IRFANA SHERIN KALLINGAL	UFAWSMT027	0	0	N
24	MANYA.P	UFAWSMT028	18	60	Y
25	MINNA.P	UFAWSMT029	18	60	Y
26	RINSHA.V	UFAWSMT030	15	50	Y
27	RISHIKA.PK	UFAWSMT031	15	50	Y
28	SARANYA.KN	UFAWSMT032	15	50	Y
29	SHIFNA SHERI.K	UFAWSMT033	12	40	Y
30	ABHINAV.P	UFAWSMT034	0	0	N
31	AKSHAY RAJ.K	UFAWSMT035	12	40	Y
32	MAQBOOL RAASI.PM	UFAWSMT037	15	50	Y

33	SIBIL.V	UFAWSMT038	**15**	50	Y
34	VISHNU.C	UFAWSMT039	0	0	N
35	MASHBOOBA S V	UFAWSMT040	15	50	Y
				31	
				88.57	
		FOR L&L (MTS5B08)	CO1 to CO5		
			88.57		
		TARGET: 75% OF STUDENTS WILL SCORE 35% OF MARKS			

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

DEPARTMENT OF STATISTICS

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

Semester: III Course:STA3C03-Probability Distributions and sampling theo

Name of the faculty member: HIMA KC

TARGET: 60% ATTAINMENT

COs	CO1 to CO5
IA MARKS ATTAINMENT	86
ASSIGNMENT	100
SEMINAR	100
ATTENDANCE	100
FINAL EXAM ATTAINMENT	89
AVERAGE	**95**

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

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	Are you able to Understand various standard probability distributions including Bernoulli, Binomial, Poisson, and Normal distributions, along with their key properties	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.	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	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.	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	ADLA.P	UFAWSMT001	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (Excellent)
2	DILSHA.AP	UFAWSMT003	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (Excellent)	4 (Very Good)
3	HIBA SHERIN.MK	UFAWSMT005	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	3 (Good)
4	HUSNA SHERIN.K	UFAWSMT006	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
5	MUFEEDA	UFAWSMT007	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	3 (Good)
6	RINSHA.TP	UFAWSMT008	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	3 (Good)	3 (Good)
7	RISVANA SHERIN	UFAWSMT009	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)
8	SAHANA MUMTHAZ	UFAWSMT010	5 (EXCELLENT)	3 (Good)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
9	SANA.MT	UFAWSMT011	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)
10	SANA.VK	UFAWSMT012	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
11	SANEEBA.K	UFAWSMT013	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
12	SHAHMA.CH	UFAWSMT014	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)	4 (Very Good)
13	SHIFNA SHARIN	UFAWSMT016	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	3 (Good)	5 (EXCELLENT)

14	FAYIZ.C	UFAWSMT017	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)
15	MOHAMMED SWALIH.C	UFAWSMT018	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
16	MUHAMMED SINAN.SV	UFAWSMT019	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	3 (Good)	5 (EXCELLENT)
17	SHAHID IRFAN.TP	UFAWSMT020	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)
18	ARYA.VR	UFAWSMT021	3 (Good)	5 (EXCELLENT)	4 (Very Good)	3 (Good)	3 (Good)
19	ASNA RUBA.K	UFAWSMT022	3 (Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)
20	FATHIMA RANNA.T	UFAWSMT024	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	3 (Good)	4 (Very Good)
21	HANNA MOL	UFAWSMT025	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)
22	HARSHA MOHANDAS.CM	UFAWSMT026	4 (Very Good)	2 (Very Fair)	4 (Very Good)	4 (Very Good)	4 (Very Good)
23	IRFANA SHERIN KALLINGAL	UFAWSMT027	4 (Very Good)	4 (Very Good)	3 (Good)	3 (Good)	5 (EXCELLENT)
24	MANYA.P	UFAWSMT028	5 (EXCELLENT)	4 (Very Good)	4 (Very Good)	3 (Good)	5 (EXCELLENT)
25	MINNA.P	UFAWSMT029	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	3 (Good)
26	RINSHA.V	UFAWSMT030	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	3 (Good)	5 (EXCELLENT)
27	RISHIKA.PK	UFAWSMT031	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
28	SARANYA.KN	UFAWSMT032	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	3 (Good)	3 (Good)
29	SHIFNA SHERI.K	UFAWSMT033	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)	4 (Very Good)
30	ABHINAV.P	UFAWSMT034	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)
	AKSHAY RAJ.K	UFAWSMT035	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
	MAQBOOL RAASI.PM	UFAWSMT037	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)	5 (EXCELLENT)	3 (Good)
	SIBIL.V	UFAWSMT038	4 (Very Good)	4 (Very Good)	3 (Good)	4 (Very Good)	4 (Very Good)
	VISHNU.C	UFAWSMT039	5 (EXCELLENT)	5 (EXCELLENT)	5 (EXCELLENT)	4 (Very Good)	5 (EXCELLENT)
	MASHBOOBA S V	UFAWSMT040	4 (Very Good)	4 (Very Good)	4 (Very Good)	5 (EXCELLENT)	4 (Very Good)
No. of graded "0"			0	0	0	0	0
No. of graded "1"			0	0	0	0	0
No. of graded "2"			0	1	0	0	0
No. of graded "3"			2	1	3	9	7
No. of graded "4"			19	21	17	13	14

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

DEPARTMENT OF STATISTICS

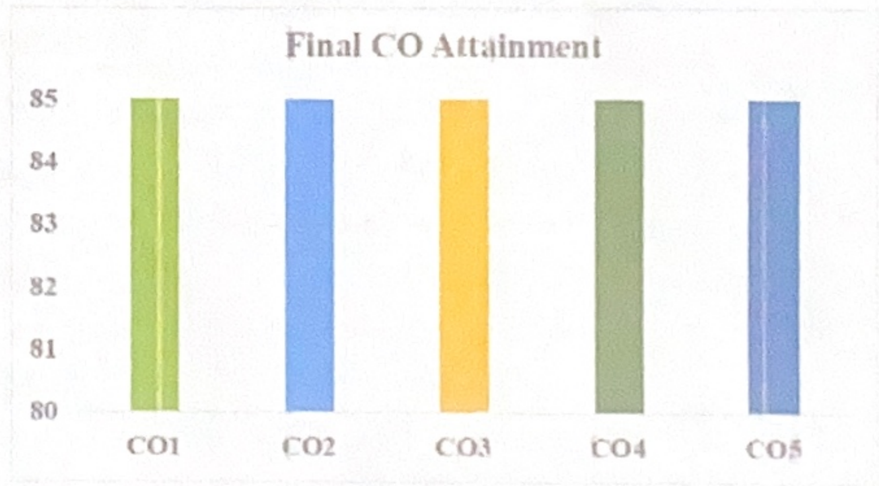
COURSE EXIT SURVEY RESPONSES (ODD SEM . 2024-2025)

Semester:III | Course:STA3C03-Probability Distributions and sampling theory

Name of the faculty member: HIMA KC

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	2	19	14	35	4.00	5	80.00
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	1	1	21	12	35	3.92	5	78.42
CO3	Analyze sampling methods, including simple random sampling, stratified sampling, and cluster sampling, and 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	3	17	15	35	4.00	5	80.00
CO4	Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers in	Are you able to Evaluate the convergence of random variables using Chebyshev's inequality and the Law of Large Numbers	0	0	0	9	13	13	35	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	7	14	14	35	3.87	5	77.37

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)	80.00	78.42	80.00	75.79	77.37
Weightage (20%)	16.00	15.68	16.00	15.16	15.47
Final CO Attainment	**91.89**	**91.57**	**91.89**	**91.04**	**91.36**



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

DEPARTMENT OF CIVIL ENGINEERING

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

Semester: III

Course:STA3C03-Probability Distributions and sampling theory

Name of the faculty member: HIMA KC

(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	80.00	92	75	YES
CO2	PO1, PO3, PO5 & PO7	PSO1, PSO2 & PSO3	95	78.42	92		
CO3	PO1, PO2, PO3, PO5 & PO9	PSO1, PSO2 & PSO3	95	80.00	92		
CO4	PO1, PO3, PO4, PO5& PO8	PSO1, PSO2 & PSO3	95	75.79	91		
CO5	PO1, PO4, PO5, PO7 & PO8	PSO1, PSO2 & PSO3	95	77.37	91		

FACULTY

HOD

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

PRINCIPAL

PRINCIPAL
AMBEDKAR COLLEGE OF
ARTS & SCIENCE
WANDOOR, MALAPPURAM DT