



**RAMAIAH**

College of Arts, Science &  
Commerce

ಎಮ್ ಎಸ್ ರಾಮಯ್ಯ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು

**M S Ramaiah College of Arts, Science and Commerce**

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,

Approved by Government of Karnataka, Approved by AICTE, New Delhi,

Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)

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DBT Star College Scheme

REF: MSRCASC/MATH/2021-2022/007

Date:04-05-2022

## CIRCULAR

### DEPARTMENT OF MATHEMATICS

This is to inform that, Department of Mathematics is organizing Value Added Course on “**Sampling Methods in Statistics**” from 9<sup>th</sup> May 2022 to 30<sup>th</sup> May 2022 for the students of 2<sup>nd</sup> and 3<sup>rd</sup> year B.Sc(EMCs) between 2:00 PM and 4:00 PM. Interested students can enroll their names with event coordinator Mrs. Haritha A

HOD

**HEAD OF THE DEPARTMENT  
MATHEMATICS  
RAMAIAH COLLEGE  
OF ARTS, SCIENCE & COMMERCE  
BANGALORE-560054**

PRINCIPAL

Principal,

**M.S. Ramaiah College of Arts, Science & Commerce  
MSRIT Post, MSR Nagar  
Bangalore - 560 054**

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Bangalore 560 054

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## DEPARTMENT OF MATHEMATICS

### REPORT ON VALUE ADDED COURSE CONDUCTED FROM 9<sup>th</sup> MAY 2022 TO 30<sup>th</sup>

**MAY 2022**

**Title:** Sampling methods in Statistics

**Date:** 09/05/2022 to 30/05/2022

**Venue:** Google meet

**Participants:** 2<sup>nd</sup> and 3<sup>rd</sup> year B.Sc(EMCs) students.

**Resource Person:** Mr.Murali and Mrs.Chaitra

**Number of Students:** 45

**Event Co-Ordinator:** Mrs. Haritha A

**Objective:** The purpose of this value added course is to give a brief insight about sampling methods in statistics. To understand the application of sampling methods in different field of study.

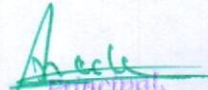
Department of Mathematics organized value added course on Sampling methods in Statistics from 9<sup>th</sup> May 2022 to 30<sup>th</sup> May 2022 for the students of 2<sup>nd</sup> and 3<sup>rd</sup> year B.Sc(EMCs) through the online platform Google meet. The value added course was inaugurated by Dr.A.Nagarathna, Principal under the patronage of Sri.M.R. Janakiram (Honorable Director, Gokula Education Foundation), Sri.M.R.Kodandaram (Honorable Director, Gokula Education Foundation) and Sri.Ramprasad (Chief Executive, Gen Science, Gokula Education Foundation). The resource person to the course was Mr.Murali and Mrs.Chaitra. This course was conducted for 30 hrs.

The registration process started on 5<sup>th</sup> May 2022. The program started at 2:00pm on 9<sup>th</sup> May 2022 followed by the inauguration and then the sessions began with the brief introduction of the resource person and few words delivered by principal madam. The first few sessions were handled by Mr.Murali.

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He gave an introduction to Statistics and people who contributed to the development of statistical methods. He later explained basics of statistics like recursion and so on. He also briefed about probability and some probability distributions like Bernoulli and Normal distribution to understand the concept of sampling methods in statistics.

The next few sessions were handled by Mrs.Chaitra. She explained the sampling methods by giving many examples. Applications of sampling methods were also explained. She also explained how Statistics is used in Data Science and current trend in industry. She also guided the students to take up a career in Data science.

The following are the topics covered in the sessions:

- Introduction to statistics
- Introduction to probability
- Probability distribution like Binomial and Normal distribution
- Population and sample
- Simple random sampling
- Systematic sampling
- Stratified sampling
- Cluster sampling
- Applications of sampling

Sampling enables the selection of right data points from within the larger data set to estimate the characteristics of the whole population. In manufacturing different types of sensory data such as acoustics, vibration, pressure, current, voltage and controller data are available at short time intervals. To predict down-time it may not be necessary to look at all the data but a sample may be sufficient.

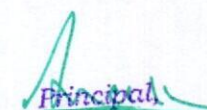
The main conclusion of this course was to make students to develop an interest in Statistics and to teach basics in sampling methods which has lot of application in various fields of study. This course was also intended to motivate the students to take up higher education in Data Science course and to give a brief insight about the industry experience in data science.

#### **Outcome:**

**Through this value added course students will understood the use of different sampling methods. They will also learn the applications of sampling in various fields.**



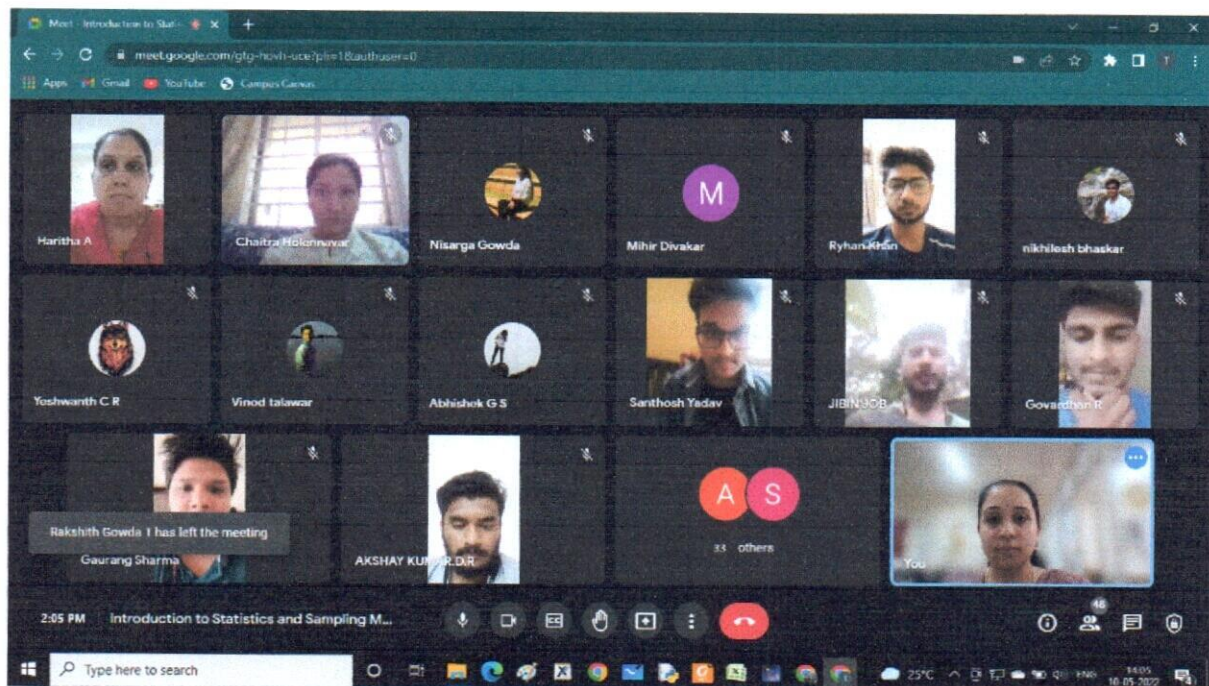
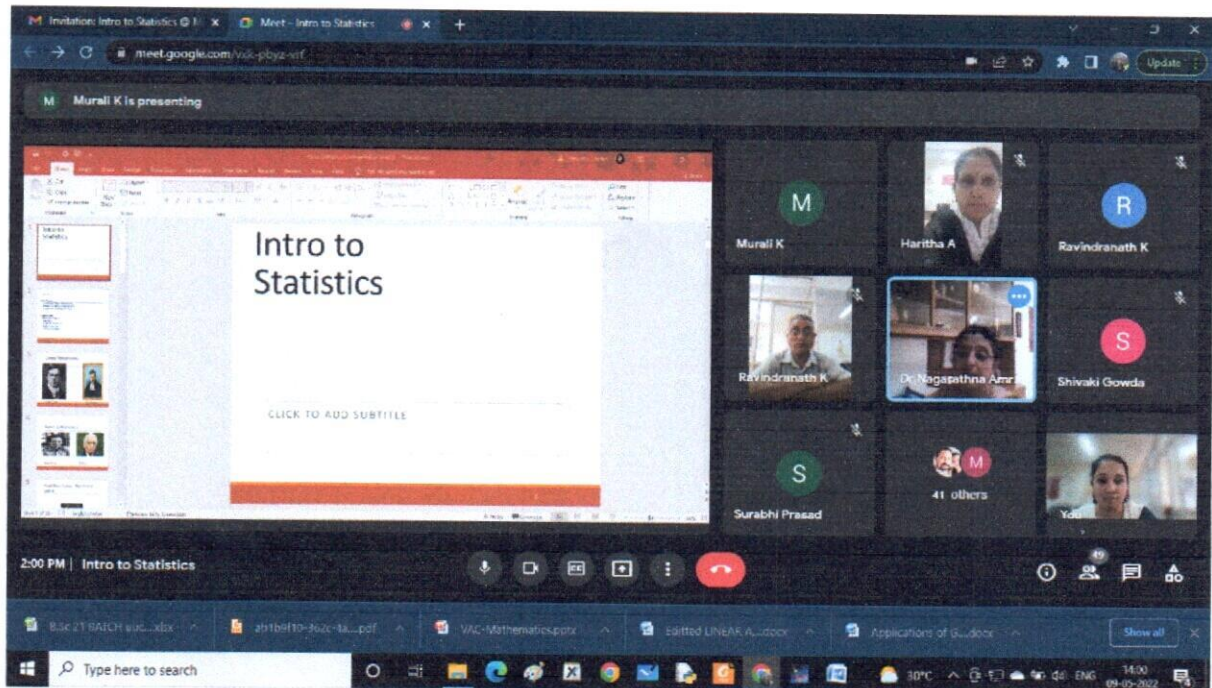
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## Value Added Course on "Sampling Methods in Statistics" Photos :



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Chaitra Holmavara is presenting

## Data Science: Why all the Excitement?

- Exciting new effective applications of data analytics
- e.g., Google Flu Trends:
  - Detecting outbreaks two weeks ahead of CDC data
- New models are estimating which cities are most at risk for spread of the covid virus.
- Prediction model is built on
  - Various data sources, types and analysis.

flu activity: Low

11:38 AM gtg-hovh-uce

Chaitra Holmavara is presenting

11:55 AM gtg-hovh-uce

Chaitra Holmavara is presenting

## Probability sampling - strata vs. clusters

## Simple Random sampling

Probability of selection =  $\frac{\text{sample size}}{\text{population size}}$

e.g., Random Device Method ("blind draw")  
e.g., Random Number's Method

11:58 AM gtg-hovh-uce

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DBT Star College Scheme

**DEPARTMENT: MATHEMATICS****Name of the Programme: Sampling Methods in Statistics.****Year:- 2021-2022****Assessment Procedure for Value Added Program:**

Department of Mathematics organized value added course on "Sampling Methods in Statistics" from 9<sup>th</sup> May 2022 to 30<sup>th</sup> May 2022 for the students of 2<sup>nd</sup> and 3<sup>rd</sup> year B.Sc.(EMCs) students by the resource person Mr.Murali and Mrs.Chaithra .Total 45 students participated in this course and the course duration was 30 hours. During the training period, the students gained knowledge of Sampling Methods in Statistics. The students actively participated in the training and also solved the problems given during the session on all the days of the training program. Also viva and MCQ test was conducted for the students by the resource person. Hence the students were given the participation certificate at the end of the program.

The following detail gives the marks of individual students.

Sl No	Student Name	Register Number	Attendance (10)	Quiz (MCQ) (20)	VIVA (10)	Total (40)
1	ABISHEK G.S	S1914615	10	18	10	38
2	ALAN THOMAS	S1914616	10	20	10	40
3	AMAN KAUSHAL	S1914617	10	18	10	38
4	BHARATH.S	S1914619	10	17	9	36
5	CHANDAPURAM RAJKUMAR	S1914621	10	17	8	35
6	CHARAN BABU.S	S1914622	10	18	9	37
7	DHANAJAYA.H.N	S1914625	10	18	9	37
8	CHARAN.P	S1914623	10	16	8	34

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9	CHETAN.S	S1914624	10	15	10	35
10	DUSHYANTH H.N	S1914626	10	16	10	34
11	GUARANG SHARMA	S1914627	10	19	10	39
12	JIBIN K.JOB	S1914631	10	18	8	36
13	KARTHIK. M.ACHARYA	S1914632	10	16	10	36
14	MOHAMMED RYHAN KHAN	S1914635	10	20	10	40
15	MUKTHA GOWDA H.K	S1914636	10	20	10	40
16	MAHESH REDDY .P	S1914640	10	20	10	39
17	PRASHANTH.M	S1914641	10	16	8	34
18	RAMYA KEERTHI .Y	S2014642	10	20	10	40
19	REVATHI.V	S1914643	10	20	10	40
20	SAI PRADYUMNA .Y	S1914644	10	20	10	40
21	SHAILENDRA SINGH	S1914646	10	18	9	37
22	SHRADHA SUDESH VADHONE	S1914648	10	17	8	35
23	SUHAS SHAPUR	S1914649	10	16	8	34
24	VINITHA HANDA	S1914650	10	20	10	40
25	YASHWANTH.L	S1914651	10	16	10	36
26	A.LIKITHA	S2014617	10	18	10	38
27	AKHILESH.K	S2014618	10	19	9	38
28	AKSHAY KUMAR D.R	S2014619	10	20	10	40
29	B.SASHAANK	S2014620	10	19	9	38
30	DEEPA .G	S2014622	10	20	10	40
31	DEEPAK.M	S2014623	10	19	9	38
32	DISHA HEGDE	S2014625	10	19	9	38
33	GREESHMA K.JOSHI	S2014627	10	20	10	40
34	HARIHARAN N.S	S2014628	10	17	8	35
35	INDRA .D	S2014629	10	19	9	38

  
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36	KAMMARI SHREE HARI	S2014630	10	20	10	40
37	KOUSHIK .S	S2014631	10	19	7	36
38	M.YATHISH	S2014632	10	20	10	40
39	NISHA A.N	S2014637	10	20	9	39
40	PAVITHRA .N	S2014639	10	19	10	39
41	SANTHOSH YADAV .N	S2014645	10	20	10	40
42	SPOORTHY .N	S2014647	10	20	10	40
43	V.LAKSHMI	S2014650	10	20	10	40
44	VARSHA YADAV	S2014652	10	17	10	37
45	YESHWANTH C.R	S2014656	10	20	10	40

**Outcome:** Through this value added course students will understand the use of different sampling methods. They will also learn the applications of sampling in various fields.



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**DEPARTMENT: MATHEMATICS**

**Name of the Programme: Sampling Methods in Statistics**

**Year : 2021-2022**

**Assessment Procedure for Value Added Program: MCQ'S.**

1. Any two examples for sampling .

(stratified sampling, cluster sampling ).

2. Example of cluster sampling

a. Race

b. Gender

c. Assume that in a population of 10000 people, 100th person is selected

d. An NGO wants to create sample of girls across 5 neighboring towns to provide education.

3. Probability sampling is defined as?

Sample size/ Population size

4. Snowball sampling falls under?

a. Cluster

b. Stratified

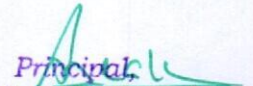
c. Systematic

d. Non-probability sampling

5. A technique used when selecting clusters of different sizes is called?

a. Two stage sampling

b. Probability proportional to size.

  
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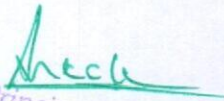
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- c. Cluster
  - d. One stage sampling
6. When each member of a population has an equal likely chance of being selected ?
- a. Quota sample
  - b. A non random sampling
  - c. An equal probability selection method.
  - d. A random sampling
7. Example for machine learning ?
8. The expected value or \_\_\_\_\_ of a random variable is the center of its distribution
- a. Median
  - b. Mean
  - c. Variance
  - d. Mode
9. Which of the following of a random variable is a measure of spread?
- a. Mean
  - b. Variance.
  - c. Mode
  - d. Median
10. The square root of the variance is called the \_\_\_\_\_ deviation.
- a. Empirical
  - b. Mean
  - c. Continuous
  - d. Standard deviation

  
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11. For continuous random variables, the CDF is the deviation of the PDF
- a. True
  - b. False
12. Cumulative distribution functions are used to specify the distribution of multivariate random variables?
- a. True
  - b. False
13. Data that summarize all observations in a category are called as \_\_\_\_\_ data?
- a. Summarized
  - b. Frequency
  - c. Raw
  - d. None
14. Name few data science techniques
15. Which of the following is the valid component of the predictor?
- a. Data
  - b. Question
  - c. Algorithm
  - d. All of the above
16. Which of the following is the characteristics of best machine learning method?
- a. Fast
  - b. Accuracy
  - c. Scalable



d. All of the above

17. The runs scored by a batsman in 5 ODIs are 31 97 112 63 and 12. The standard deviation is

a. 25.79   b. 23   c. 56   d. 30

18. If the probability of hitting an object is 0.8 find the variance?

a. 0.16   b. 0.11   c. 1.7   d. 0.13

19.  $E(X) = \lambda$ , is used in which distribution ?

a. Poisson's distribution

b. Binomial

c. Bernoulli's

d. Standard distribution

20. K-nearest neighbor's algorithm is based on \_\_\_\_ learning?

a. Supervised learning

b. Reinforcement learning

c. Un-supervised learning

d. None

answers;

1. classification, regression, etc

2. d. an NGO wants to create sample of girls across 5 neighboring towns to provide education).

4. d. (non-probability sampling)

5. b. (probability proportional to size.)

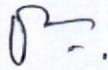
6. c. (an equal probability selection method).

7. Speech & Image Recognition, Google translation

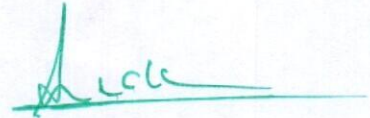
8. b. ( mean)



9. b.(variance)
10. d. (standard deviation)
11. b.(false)
12. a. (true)
13. a(summarized)
- 14.Linear regression, Non-linear model
15. d.(all of the above)
16. d.(all of the above)
17. a.(25.79)
18. a(0.16)
19. a.(Poisson's distribution)
20. b.(Un-supervised).



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DEPARTMENT OF MATHEMATICS	
EVENT NAME : Value Added Course on "Sampling methods in Statistics"	
Student's Feedback	

Timestamp	Name	Register Number	Course and Semester	How do you rate the VAC	Resource person knowledge towards the subject	Presentation of the resource person
5-30-2022 11:51:03	Santhosh N Yadhav	S2014645	Bsc (EMCs) , 4th semester	Excellent	Excellent	Excellent
5-30-2022 11:52:20	Yashwanth.L	S1914651	5th sem bsc emcs	Very Good	Excellent	Very Good
5-30-2022 11:54:37	Yeshwanth.C.R	S2014656	3rd semester, EMCs	Excellent	Excellent	Good
5-30-2022 11:55:54	Koushik S	S2014631	4th Sem Bsc(Emcs)	Excellent	Excellent	Excellent
5-30-2022 11:57:11	Varsha yadav	S2014652	Bsc emcs 4th sem	Excellent	Excellent	Excellent
5-30-2022 11:58:28	AKHILESH.K	S2014618	BSc (EMCs) / 4th Semester	Excellent	Very good	Good
5-30-2022 12:00:45	Nisha A N	S2014637	BSC-EMC 4th Sem	Good	Excellent	Excellent
5-30-2022 12:02:02	Likitha.A	S2014617	Bsc(EMCS) 4th semester	Excellent	Excellent	Excellent
5-30-2022 12:03:19	Sai Pradyumna	S1914644	BSc(EMCs) 6th Sem	Excellent	Excellent	Very Good
5-30-2022 12:05:36	Ramya Keerthi Y	S1914642	BSc EMCs 6th sem	Excellent	Very good	Excellent
5-30-2022 12:10:53	Abhishek GS	S1914615	Bsc 6th sem	Very Good	Very good	Good
5-30-2022 12:12:10	Alan Thomas	S1914616	Bsc emcs 6th sem	Excellent	Excellent	Good
5-30-2022 12:12:27	Dhananjay M	S1914625	BscEMC 6th Sem	Excellent	Very good	Good
5-30-2022 12:13:44	Chetan S	S1914624	BSC EMCs 6th sem	Excellent	Excellent	Excellent
5-30-2022 12:16:01	Muktha Gowda H.K	S1914636	Bsc (Emcs), 6th Semester	Excellent	Very good	Excellent
5-30-2022 12:18:18	Vinitha Handa	S1914650	BSc(EMCs) 6th sem	Excellent	Very good	Good
5-30-2022 12:19:35	Mahesh reddy	S1914640	Bsc emcs 6th sem	Good	Very good	Excellent
5-30-2022 12:20:52	Shradha S Vadhone	S1914648	BSc EMCS 6th sem	Excellent	Excellent	Excellent
5-30-2022 12:22:09	Jibin K Job	S1914631	BSC EMCs 6th sem	Good	Very good	Good
5-30-2022 12:23:26	Spoorthi N	S2014647	BSc(EMCs) 4th semester	Excellent	Very good	Good
5-30-2022 12:23:43	Charan Babu s	S1914622	6th sem B.Sc	Excellent	Very good	Excellent
5-30-2022 12:24:00	Revathi. V	S1914643	Bsc emcs 6th sem	Good	Very good	Excellent
5-30-2022 12:25:17	Mohammed Ryhan Khan	S1914635	B sc 6th sem	Excellent	Excellent	Excellent
5-30-2022 12:25:34	Aman kaushal	S1914617	Bsc(EMC's) 6th Sem	Excellent	Excellent	Excellent
5-30-2022 12:27:51	Gaurang sharma	S1914627	Bsc(EMC's) 6 th semester	Excellent	Excellent	Excellent
5-30-2022 12:28:08	AKSHAY KUMAR D R	S2014619	BSc - EMCs 4th Semester	Excellent	Very good	Good
5-30-2022 12:29:25	Deepa G	S2014622	EMCS 4th sem	Excellent	Very good	Excellent
5-30-2022 12:31:42	Karthik M Acharya	S1914632	Bsc EMCs 6th	Excellent	Excellent	Excellent
5-30-2022 12:32:59	Greeshma Joshi	S2014627	Bsc EMCS 4th semester	Excellent	Very good	Good
5-30-2022 12:33:16	Disha Hegde	S2014625	BSc, 4th semester	Very Good	Very good	Good



5-30-2022 12:33:33	Pavithra.N	S2014639	Bsc 4sem	Excellent	Very good	Excellent
5-30-2022 12:34:50	C.Rajakumar	S1914621	6th sem B.Sc	Excellent	Very good	Excellent
5-30-2022 12:35:07	Charan P	S1914623	6th sem B.Sc(EMC)	Good	Excellent	Very Good
5-30-2022 12:36:24	Shailendra Singh	S1914646	B.Sc(EMC) 6th sem	Excellent	Excellent	Excellent
5-30-2022 12:36:41	Suhas Shapur	S1914649	6th sem B.Sc	Excellent	Excellent	Excellent
5-30-2022 12:37:58	Prashanth.M	S1914641	6th sem B.Sc(EMC)	Good	Very good	Good
5-30-2022 12:40:15	Dushyanth.H.N	S1914626	6th sem B.Sc(EMC)	Good	Very good	Good
5-30-2022 12:41:32	Bharath	S1914619	B.Sc(EMC) 6th sem	Excellent	Very good	Excellent
5-30-2022 12:42:49	Sashaank	S2014620	4th Sem Bsc(Emcs)	Excellent	Excellent	Excellent
5-30-2022 12:43:06	Deepak	S2014623	4th Sem Bsc(Emcs)	Excellent	Excellent	Good
5-30-2022 12:44:23	Hariharan	S2014628	B.Sc(EMC) 4th sem	Excellent	Very good	Excellent
5-30-2022 12:45:40	Indra	S2014629	B.Sc(EMC) 4th sem	Excellent	Very good	Excellent
5-30-2022 12:46:57	Shree Hari	S2014630	4th Sem Bsc(Emcs)	Good	Excellent	Good
5-30-2022 12:47:14	M.Yathish	S2014632	4th Sem Bsc(Emcs)	Excellent	Excellent	Excellent
5-30-2022 12:51:31	V.Lakshmi	S2014650	4th Sem Bsc(Emcs)	Excellent	Excellent	Excellent

*[Signature]*

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*[Signature]*  
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**M S Ramaiah College of Arts, Science and Commerce**

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,

Approved by Government of Karnataka, Approved by AICTE, New Delhi,

Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)

Ranked 62<sup>nd</sup> in NIRF India Ranking by MHRD, New Delhi

DBT Star College Scheme

To,

Date : 30-04-2022

Mr.Murali

Data Scientist,

Hinduja Global Solutions,

Bengaluru

Respected Sir,

On behalf of M.S.Ramaiah College of Arts, Science and Commerce, the Department of Mathematics invites you for conducting value added course for 2<sup>nd</sup> and 3<sup>rd</sup> year B.Sc(EMCs) Students which is being held from 9<sup>th</sup> May 2022 to 30<sup>th</sup> May 2022.

Thanking you

With regards,

*Principal,  
M.S. Ramaiah College of Arts, Science & Commerce  
MSRIT Post, MSR Nagar  
Bangalore - 560 054*

M S Ramaiah Nagar  
MSRIT Post  
Bangalore 560 054

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+91 80 2360 6905  
F +91 80 2360 6213

E principal.msrmasc@gmail.com  
W www.msrmasc.edu.in





**RAMAIAH**

College of Arts, Science &  
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DBT Star College Scheme

To,

Date : 30-04-2022

Mrs.Chaitra  
Data Scientist,  
Deloitte,  
Bengaluru

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DBT Star College Scheme

To,

Date : 30-05-2022

Mr.Murali  
Data Scientist,  
Hinduja Global Solutions,  
Bengaluru

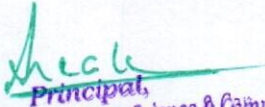
Respected Sir,

On behalf of M.S.Ramaiah College of Arts, Science and Commerce, the  
Department of Mathematics sincerely acknowledges you for conducting Value  
Added Course on "Sampling methods in Statistics" to B.Sc(EMCs) students  
held from 9<sup>th</sup> May 2022 to 30<sup>th</sup> May 2022.

We profoundly thank you for your gracious presence. We also look forward for  
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Thanking you

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MSRIT Post, MSR Nagar  
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DBT Star College Scheme

To,

Date : 30-05-2022

Mrs.Chaitra  
Data Scientist,  
Deloitte,  
Bengaluru

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## CERTIFICATE OF PARTICIPATION

This is to certify that **ABHISHEK.G.S** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

Principal, RCASC

Principal,  
M.S. Ramaiah College of Arts, Science & Commerce  
MSRIT Post, MSR Nagar  
Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **ALAN THOMAS** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **MOHAMMED RYHAN KHAN** of V Sem  
B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling  
Methods in Statistics**" organized by Department of Mathematics from 9th  
May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

Principal, RCASC

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **VINITHA HANDA** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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*Principal,*  
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## CERTIFICATE OF PARTICIPATION

This is to certify that **MUKHTA GOWDA.H.K** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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Co-ordinator

**DR.A.NAGARATHNA**

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **REVATHI.V** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **P.MAHESH REDDY** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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MSRIT Post, MSR Nagar  
Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **RAMYA KEERTHI.Y** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
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Co-ordinator

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **C.RAJAKUMAR** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
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## CERTIFICATE OF PARTICIPATION

This is to certify that **SAI PRADYUMNA.B** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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Co-ordinator

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## CERTIFICATE OF PARTICIPATION

This is to certify that **AMAN KAUSHAL** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **GAURANG SHARMA** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **CHETAN.S** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **CHARAN BABU** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **CHARAN.P** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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Co-ordinator

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## CERTIFICATE OF PARTICIPATION

This is to certify that **DHANANJAY** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **SHAILENDRA SINGH** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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Co-ordinator

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MSRIT Post, MSR Nagar  
Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that **KARTHIK M ACHARYA** of V Sem B.Sc(EMCs)  
has actively participated in Value Added Course on "**Sampling Methods in  
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30th May 2022.

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**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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MSRIT Post, MSR Nagar  
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## CERTIFICATE OF PARTICIPATION

This is to certify that **SUHAS SHAPUR** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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Co-ordinator

**DR.A.NAGARATHNA**

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## CERTIFICATE OF PARTICIPATION

This is to certify that **PRASHANTH.M** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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A.S. Ramaiah College of Arts, Science & Commerce  
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This is to certify that **SHRADHA.S.V** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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College of Arts, Science  
& Commerce

## CERTIFICATE OF PARTICIPATION

This is to certify that of **YASHWANTH.L** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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This is to certify that of **JIBIN.K.JOB** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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**MRS.HARITHA.A**

Co-ordinator

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This is to certify that of **DUSHYANTH.H.N** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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Co-ordinator

**DR.A.NAGARATHNA**

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Principal,

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## CERTIFICATE OF PARTICIPATION

This is to certify that of **BHARATH.S** of V Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that of **A.LIKITHA** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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## CERTIFICATE OF PARTICIPATION

This is to certify that of **DEEPAK.M** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

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**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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Principal,  
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## CERTIFICATE OF PARTICIPATION

This is to certify that of **AKHILESH.K** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

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Bangalore - 560 054





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## CERTIFICATE OF PARTICIPATION

This is to certify that of **AKSHAY KUMAR.D.R** of III Sem B.Sc(EMCs)  
has actively participated in Value Added Course on "**Sampling Methods in  
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**MR.K.RAVINDRANATH**

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Co-ordinator

**DR.A.NAGARATHNA**

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This is to certify that of **B.SASHAANK** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

**MR.K.RAVINDRANATH**

HOD, Dept of  
Mathematics

**MRS.HARITHA.A**

Co-ordinator

**DR.A.NAGARATHNA**

Principal, RCASC

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## CERTIFICATE OF PARTICIPATION

This is to certify that of **DEEPA.G** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **DISHA HEGDE** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **HARIHARAN.N.S** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **INDRA.D** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **KAMMARI SHREE HARI** of III Sem  
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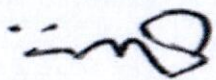
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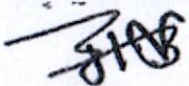
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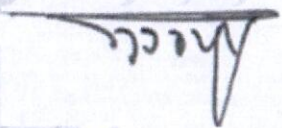
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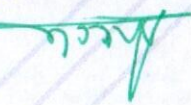
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This is to certify that of **VARSHA YADAV** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **YESHWANTH.C.R** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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This is to certify that of **V.LAKHSMI** of III Sem B.Sc(EMCs) has actively participated in Value Added Course on "**Sampling Methods in Statistics**" organized by Department of Mathematics from 9th May 2022 to 30th May 2022.

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