

## **CERTIFICATE COURSE IN MATHEMATICS**

- **CERTIFICATE COURSE IN R PROGRAMMING, 2021-22**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2021-22**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2020-21**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2020-21**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2019-20**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2019-20**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2018-19**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2018-19**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2017-18**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2017-18**

**2021-22**  
**CERTIFICATE COURSE IN**

**INTRODUCTION TO R PROGRAMMING**

During the academic year 2021-22, fifteen students registered for the certificate course in an Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real life. All of the registered students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on**  
**" INTRODUCTION TO R PROGRAMMING"**

**Department of Mathematics (2021-22)**

**Course coordinator: Anjana S S**  
**Contact no: 8848652826**

**Principal**  
**Dr.Latha M S**

**Department of Mathematics**

**Certificate Course -II Syllabus**

**Title of the Course: Introduction to R PROGRAMMING**

**Aim of the Course**

This Course is aimed at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

**Objective of the course**

- The basics of statistical computing and data analysis
- How to use R for analytical programming

**Outcome of the course**

- After completing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

**Sree Narayana College Chathannur**

**Department of Mathematics**

**Certificate Course - Syllabus**

**Title of the Course: Introduction To R Programming**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using R programming.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using R programming.
3. Histogram
  - 3.1 Methods to install R studio.
  - 3.2 Methods to construct frequency tables using R.
  - 3.3 Methods for drawing Histogram using R.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using R.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using R.
2. Regression
  - 2.1 Methods to find regression using R.

**Module 4: ANOVA using R(3hr)**

1. One way ANOVA
  - 1.1 Methods for finding ANOVA single factor (one way ANOVA).
  - 1.2 Result analysis for One way ANOVA.
2. Two way ANOVA
  - 2.1 Methods to find two way ANOVA with and without replications.
  - 2.2 Result analysis for two way ANOVA.

**REFERENCES**

1. Dalgaard. P(2008), *Introductory Statistics with R*, Springer, Newyork.
2. Lander J P(2017), *R for everyone 2/e*. Addison-wesley, Professional, U.S
3. Michael J Crawley (2013), *The R Book*, 2/e, Wiley, Newyork.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2021-2022**  
**INTRODUCTION TO R PROGRAMMING**

Time : 1 hr

Max.marks :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of students	5	10	18	26	22	15	4

(1\*10)

Answer any two question each carry 20 marks

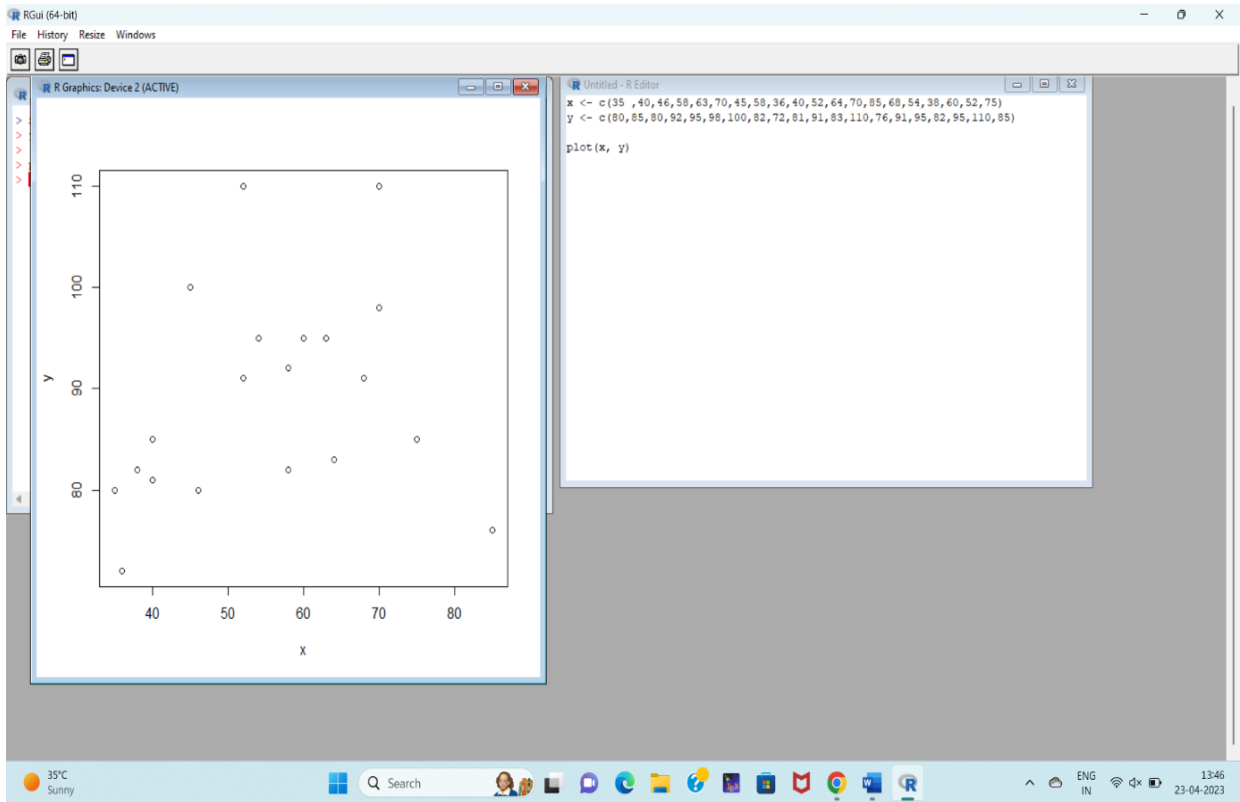
3.Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,9.43,  
773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,30.58,  
383.62,616.35,569.57,675.10,352.34

4.The following table shows age and blood pressure of 20 persons. Prepare a scatter diagram for the data.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75  
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

(2\*20=40)



A sample answer sheet

PUPILS ATTENDANCE REGISTER OF _____ SCHOOL																			
Admission No.	Sl. No.	NAME	Days																
			Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
01	1	Aswathi S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
02	2	Hajera Shajahan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
03	3	Subhadra S.I	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
04	4	Shikha S.A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
05	5	Sameeksha R.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
06	6	Abhisam S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
07	7	Abhinava S.R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
08	8	Prerna S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
09	9	Divyansu S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	10	Diana S. James	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	11	Madhusudhan M.A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	12	Darshana P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	13	Sayeeha Vimal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	14	Sayana S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	15	Subhadra K	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

FOR THE MONTH OF _____ 2021-2022																									
Std. _____ Div. _____																									
18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days Present	No. of Days Absent	% of Attendance	Admission Fee	Date of Payment	Special Fee	Fees Rs.	Fine Rs.	Total Rs.	Date of Payment	Initials of Class Teacher	Remarks

TOTAL WORKING DAYS			Daily Attendance	FN
PREVIOUS MONTH	PRESENT MONTH	TOTAL		
			AN	
No. or not at the beginning in the month			Initials of Teacher	

Fees collected Rs	No. Admitted.....
Current	No. Left.....
Arrear	No. at the end of the month.....
Total	

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Chattannur  
Class Teacher

Headmaster/Principal

Attendance statement 2021-22



**SREE NARAYANA COLLEGE  
CHATHANNUR**  
DEPARTMENT OF MATHEMATICS

**CERTIFICATE OF COMPLETION**

This is to certify that Mr/Ms. Nandana P. | Bsc Mathematics  
has participated and completed the College level Certificate Course on  
"INTRODUCTION TO R PROGRAMMING 2021-22" organized  
by Department of Mathematics, Sree Narayana College Chathannur.

*Anjana*  
**Coordinator**  
Anjana.S.S

*Rani Rajeevan*  
**H.O.D**  
Dr. Rani Rajeevan



*Latha M S*

**SREE NARAYANA COLLEGE CHATHANNUR**  
Department of Mathematics  
**Certificate Course on Introduction to R Programming**  
**Report 2021-22**

Introduction to R is a beginner-level course designed to teach the fundamentals programming language. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 02.11.2021. It was officially inaugurated by Dr. Latha M S Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the online classes from 02.11.2021 to 16.12.2021 and practical classes are taken on 4.1.2022 and 6.1.2022 and the examination was conducted on 20.01.2022 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

*Anjana*  
Course Coordinator  
Anjana S S

## **CERTIFICATE COURSE IN DATA ANALYSIS**

During the academic year 2021-22, twenty students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. All of the registered students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
"DATA ANALYSIS "**

**Department of Mathematics (2021-22)**

**Course coordinator: Anjana S S**  
**Contact no: 8848652826**

**Principal**  
**Dr.Latha M S**



**Sree Narayana College, Chathannur**  
**Department of Mathematics**  
**Certificate Course Syllabus**  
**Title of the Course: Data Analysis**

**Aim of the Course**

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

**Objective of the course**

- To teach the participants advanced Excel functions.

**Outcome of the course**

- Through the use of data analysis, project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

**Sree Narayana College, Kollam**  
**Department of Mathematics**  
**Certificate Course Syllabus**

**Title of the Course: Data Analysis using Microsoft Excel**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using Excel tools.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using Excel tools.
3. Histogram
  - 3.1 Methods to install Data analysis tool pack in Excel.
  - 3.2 Methods to construct frequency tables in Excel.
  - 3.3 Methods for drawing Histogram using Data analysis functions.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using Data analysis tool pack.
2. Regression
  - 2.1 Methods to find regression using Data analysis tool pack.

**REFERENCES**

1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel*. Academic Publishing Ltd., UK
2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide*. SAGE Publication Inc. New Delhi
3. Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada

**SREE NARAYANA COLLEGE , CHATHANNUR**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2021-2022**  
**DATA ANALYSIS**

Time : 1 hr

Max.marks :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination.Represent the data by a histogram.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of students	5	10	18	26	22	15	4

(1\*10)

Answer any two question each carry 20 marks

3. Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,9.43,  
773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,30.58,  
383.62,616.35,569.57,675.10,352.34

4. The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

X: 35, 40, 46, 58, 63, 70, 45, 58, 36, 40, 52, 64, 70, 85, 68, 54, 38, 60, 52, 75

Y: 80, 85, 80, 92, 95, 98, 100, 82, 72, 81, 91, 83, 110, 76, 91, 95, 82, 95, 110, 85

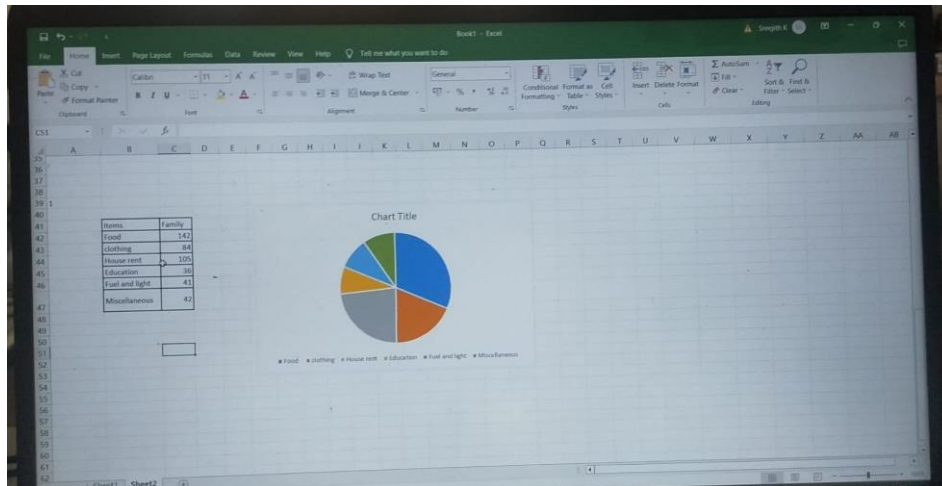
5. Three samples below have been obtained from normal populations with equal variances. Test the hypothesis that the population means are equal. ( $\alpha = .05$ )

Sample I : 12 15 8 11 9

Sample II : 8 12 13 9 10

Sample III : 13 11 8 9 12

(2\*20=40)



A sample answer sheet

PUPILS ATTENDANCE REGISTER OF		SCHOOL																	FOR THE MONTH OF		2021 - 2022		Std.			Div.		
Sl. No.	NAME	Days	Date																	Present	Days	Absent	No. of Days	Fee	Special	Total	No. of	Remarks
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17									
1	Neelesh N	(B.Sc. Patha)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
2	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
3	Srikanth J	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
4	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
5	Vijay S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
6	Tanish S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
7	Rishabh B	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
8	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
9	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
10	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
11	Aravind S	(B.Sc.)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
12	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
13	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
14	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
15	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
16	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
17	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
18	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
19	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							
20	Aravind S	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17							

TOTAL WORKING DAYS		FN		AN		In-charge of the Department Department of Mathematics Sri Narayana College Chathanbur
PREVIOUS MONTH	PRESNT MONTH	Daily				
		Absence				

FOR THE MONTH OF		2021 - 2022		Std.			Div.															
18	19	20	21	22	23	24	25	26	27	28	29	30	31	Present	Absent	No. of Days	Fee	Special	Total	No. of	Remarks	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	17								

Fees collected Rs		No. Admitted	
Class	Amount	No. Left	
Fine		No. at the end of the	
Total		month	

Class Teacher \_\_\_\_\_ (Headmaster/Principal)

Attendance statement 2021-22



SREE NARAYANA COLLEGE CHATHANNUR  
DEPARTMENT OF MATHEMATICS

## CERTIFICATE OF COMPLETION

This is to certify that Mr/Ms ..... *Fathima L. III Bcom* .....  
has participated and completed the College level Certificate Course on  
"DATA ANALYSIS 2021-22" organized by Department of Mathematics,  
Sree Narayana College Chathannur.

*Anjane*  
**Coordinator**  
*Anjana S.S*

*Rani*  
**H.O.D**  
*Dr. Rani Rajeevan*



*[Signature]*  
**Principal**

**SREE NARAYANA COLLEGE CHATHANNUR**

**Department of Mathematics**

**Certificate Course on Data Analysis**

**Report 2021--22**

Data analysis is the process of systematically applying statistical and logical methods and techniques to describe and illustrate, condense and recap, and evaluate data. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 06.12.2021. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 06/12/2021 to 11/02/2022 and the examination was conducted on 18/02/2022 at the Computer lab. A total of 20 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator

Anjana S S

**2020-21**  
**CERTIFICATE COURSE -I**  
**INTRODUCTION TO R PROGRAMMING**

During the academic year 2020-21, fifteen students registered for the certificate course in an Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
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**College -level Certificate Course on**  
**" INTRODUCTION TO R PROGRAMMING"**

**Department of Mathematics (2020-21)**

***Course coordinator: Anjana S S***  
***Contact no: 8848652826***

***Principal***  
***Dr.Latha M S***

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course -II Syllabus**

**Title of the Course: Introduction to R PROGRAMMING**

**Aim of the Course**

This Course is aimed at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

**Objective of the course**

- The basics of statistical computing and data analysis
- How to use R for analytical programming

**Outcome of the course**

- After completing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.



**Sree Narayana College Chathannur**

**Department of Mathematics**

**Certificate Course - Syllabus**

**Title of the Course: Introduction To R Programming**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using R programming.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using R programming.
3. Histogram
  - 3.1 Methods to install R studio.
  - 3.2 Methods to construct frequency tables using R.
  - 3.3 Methods for drawing Histogram using R.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using R.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using R.
  
2. Regression

2.1 Methods to find regression using R.

**Module 4: ANOVA using R(3hr)**

1. One way ANOVA
  - 1.1 Methods for finding ANOVA single factor (one way ANOVA).
  - 1.2 Result analysis for One way ANOVA.
2. Two way ANOVA
  - 2.1 Methods to find two way ANOVA with and without replications.
  - 2.2 Result analysis for two way ANOVA.

***REFERENCES***

- 1. Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
- 2. Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
- 3. Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2020-2021**  
**INTRODUCTION TO R PROGRAMMING**

Time : 1 hr

Max. marks :50

Answer any one question given below each carry 10 marks.

1. Represent the data using suitable diagram

Items	Family I	Family II
Food	142	118
clothing	84	65
House rent	105	110
Education	36	45
Fuel and light	41	30
Miscellaneous	42	40

2. The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Marks	0-10	10-30	30-50	50-80	80-100
No. of students	12	10	18	24	21

(1\*10=10)

**Answer any two question each carry 20 marks**

**3. Find all descriptive statistics measures of the following data.**

222, 350, 163, 27.9, 66.5, 101, 134, 205, 63, 92, 98.3, 415, 78, 91.5,

33.6, 121, 139, 23.5, 69, 141, 85, 72, 153, 66, 74.6, 78.3, 57, 84, 48, 28.3,

60, 49.2, 51.6, 99

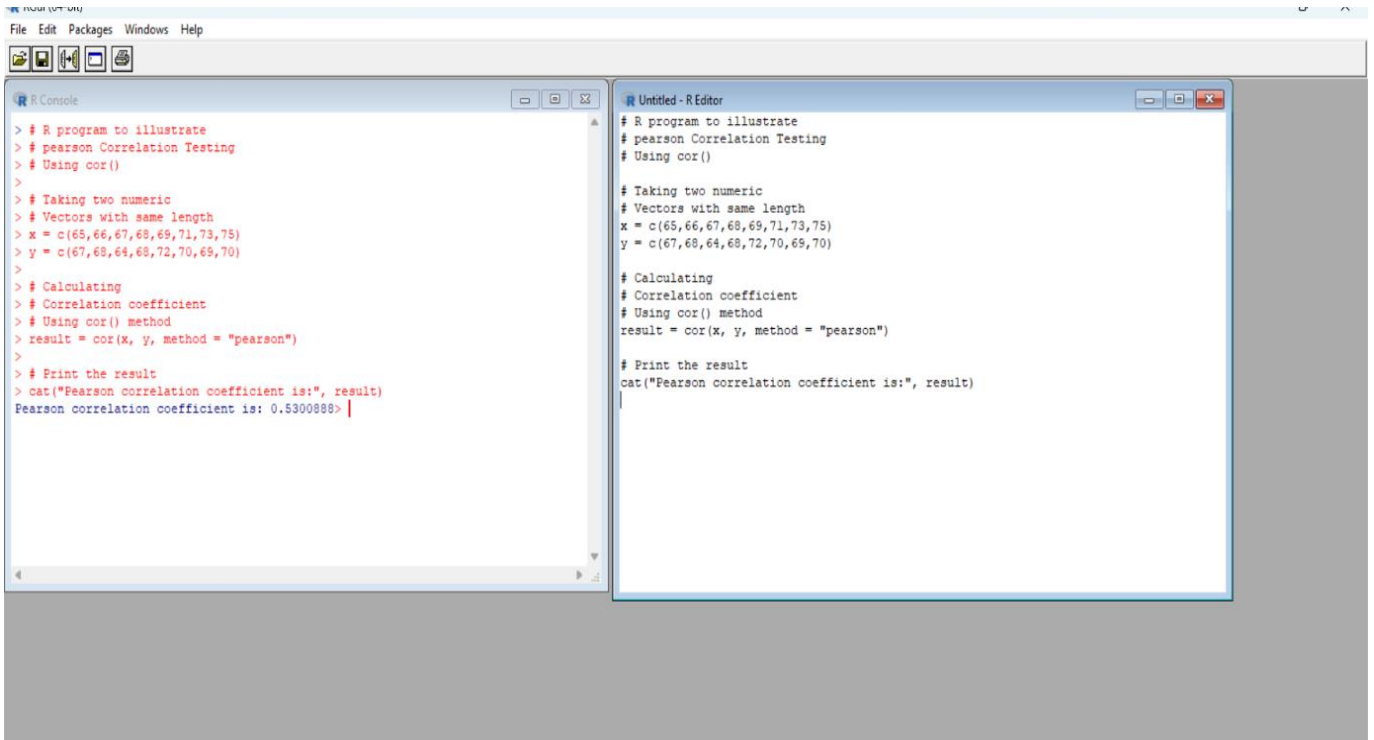
**4. From past observations we have the following figures showing the relationship between heights of fathers and sons.**

Height of father : 65,66,67,68,69,71,73

Height of son : 67,68,64,68,72,70,69,70

Obtain the correlation coefficient.

(2\*20=40)



A Sample answer sheet

ONLINE

PUPILS ATTENDANCE REGISTER OF				SCHOOL																													
Adms Book No.	Sl. No.	NAME	Days Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	No. of Days Present	Present Up-to Comp	Attendance	Admission Fee	Date of Payment	Special Fees	Fees Rs.	Total Rs.	Date of Payment	Initials of Class Teacher	Remarks		
				18	19	20	21	22	23	24	25	26	27	28	29	30	31																
2202013001	1	Ahlan Swaban		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
09	2	Anuja A		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
05	3	Diya P.M.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
08	4	Sugan S		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
10	5	Sanjay A		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
12	6	Anvita R. Deyan		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
15	7	Abhinav J.R		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
17	8	Abhishek A		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
18	9	Amalika G.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
21	10	Atulika A		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
22	11	Pragna Chandrabose		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
24	12	Devika Sharma C		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
26	13	Lekshmi Lal		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
28	14	Pravathy M		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												
30	15	Saika S.R.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17												

Course Coordinator  
Anjana S

Head of the Department  
Department of Mathematics  
Sree Narayana College

Headmaster/Principal

Attendance statement 2020-21



**SREE NARAYANA COLLEGE  
CHATHANNUR**

DEPARTMENT OF MATHEMATICS

**CERTIFICATE OF COMPLETION**

*This is to certify that Mr/Ms. .... Parvathy M. | Bsc Mathematics  
has participated and completed the College level Certificate Course on  
"INTRODUCTION TO R PROGRAMMING 2020-21" organized  
by Department of Mathematics, Sree Narayana College Chathannur.*

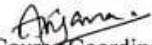
*Anjana*  
**Coordinator**  
Anjana . P . S

*Rani*  
**H.O.D**  
Dr. Rani Rajeevan

  
*Rani*  
**Principal**

**SREE NARAYANA COLLEGE CHATHANNUR**  
**Department of Mathematics**  
**Certificate Course on Introduction to R Programming**  
**Report 2020-21**

R programming is an interpreted programming widely used to analyze statistical information and a graphical representation R has become one of the most popular programming languages in the industries. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 24.11.2020. It was officially inaugurated by Dr. C S Laths M S Principal, S N College, Chathannur. Due to the covid pandemic the classes are conducted as online and offline. Smt. Anjana S S, Faculty in Statistics has led the online classes from 24.11.2020 to 21.01.2021 and the offline classes are taken on 21.01.2021 & 23.01.2021 . The examination was conducted on 03.03.2021 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator  
Anjana S S

## **CERTIFICATE COURSE – II DATA ANALYSIS**

During the academic year 2020-21 , 23 students registered for the s certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
"DATA ANALYSIS "**

**Department of Mathematics (2020-21)**

*Course coordinator: Anjana S S*  
*Contact no: 8848652826*

*Principal*  
*Dr.Latha M S*



**Sree Narayana College, Chathannur**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis**

**Aim of the Course**

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

**Objective of the course**

- To teach the participants advanced Excel functions.

**Outcome of the course**

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes.** As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis using Microsoft Excel**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams

1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

3.1 Methods to install Data analysis tool pack in Excel.

3.2 Methods to construct frequency tables in Excel.

3.3 Methods for drawing Histogram using Data analysis functions.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode

1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation

1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

2.1 Methods to find regression using Data analysis tool pack.

**REFERENCES**

- 1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel*. Academic Publishing Ltd., UK**
- 2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide*. SAGE Publication Inc. New Delhi**
- 3. Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2020-2021**  
**DATA ANALYSIS USING MICROSOFT EXCEL**

Time : 1 hr  
max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using suitable diagram

Items	Family I	Family II
Food	142	118
clothing	84	65
House rent	105	110
Education	36	45
Fuel and light	41	30
Miscellaneous	42	40

2.The following table gives the distribution of the marks of 100 students in an examination.Represent the data by a histogram.

Marks	0-10	10-30	30-50	50-80	80-100
No.of students	12	10	18	24	21

(1\*10=10)

Answer any two question each carry 20 marks

3. Find all descriptive statistics measures of the following data.

222, 350, 163, 27.9, 66.5, 101, 134, 205, 63, 92, 98.3, 415, 78, 91.5,  
33.6, 121, 139, 23.5, 69, 141, 85, 72, 153, 66, 74.6, 78.3, 57, 84, 48, 28.3,  
60, 49.2, 51.6, 99

4. From past observations we have the following figures showing the relationship between heights of fathers and sons.

Height of father : 65,66,67,68,69,71,73

Height of son : 67,68,64,68,72,70,69,70

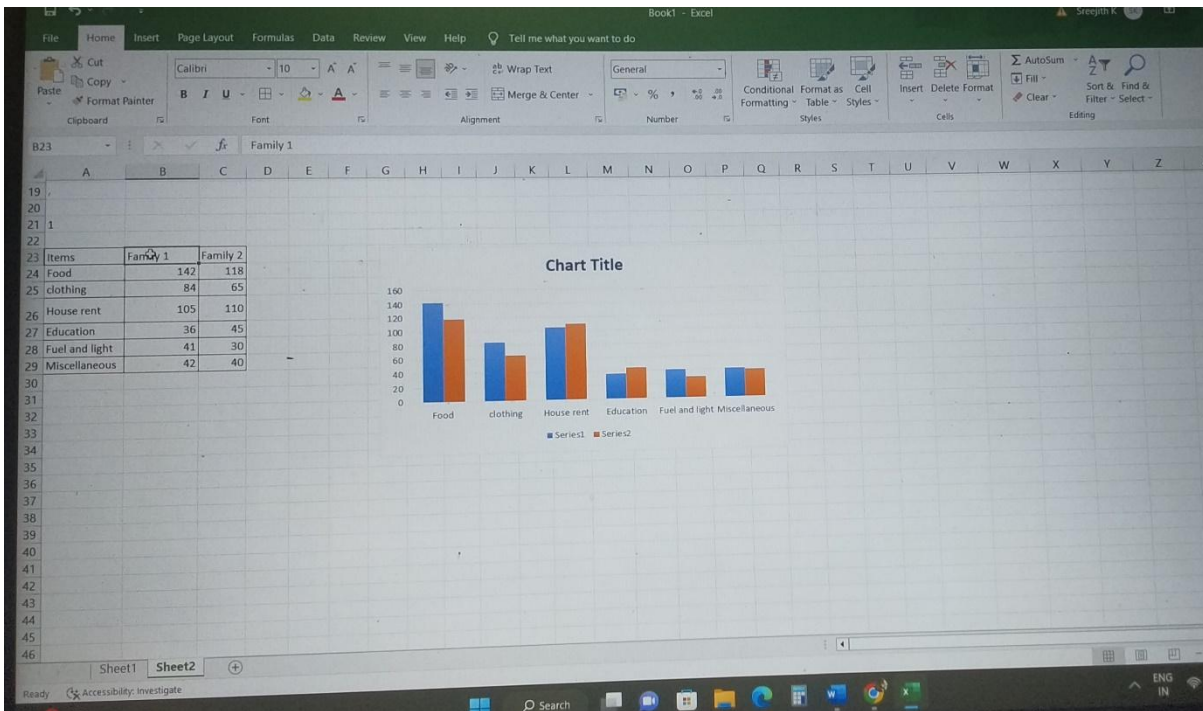
Obtain the correlation coefficient.

5. Form the regression equations for the following data

X : 10 15 9 12 18 16 21

Y : 9 12 11 8 10 13 18

(2\*20=40)



A Sample answer sheet

DATE/TIME

SCHOOL

Admission No.	Sl. No.	NAME	Days							Date								
			1	2	3	4	5	6	7	1	2	3	4	5	6	7		
1		AROTHY M R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2		ANISHA S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3		ANILKUMAR A V	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4		ARUNIMA A S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5		KESHAVA J	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6		ROHITH R S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7		ARUNIMAT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		KARTHIKA J S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9		SANTHINI SURESH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10		ANITHA V	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11		KRISHNA V J	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12		CHANDRA VIJAYAN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13		DEVU S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14		STALEEN KATU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15		ANANDHARAJA P C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16		BRUNIMATH S G	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17		MUNDESHWAR KAMARAJ	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18		CHANDRA R B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19		CHANDRAN P G	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20		CHANDRA UDAYAN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21		CHANDRA KAMARAJ R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22		REVDITHY R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

COURSE COORDINATOR  
ANITHA S B

TOTAL WORKING DAYS			Daily Attendance	FN	AN
PREVIOUS MONTH	PRESENT MONTH	TOTAL			

No. on roll at the beginning in the month.....

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Chattannur  
Class Teacher

FOR THE MONTH OF 2020-2021

Sl. No.	Date	No. of Days Present	Present	Up-to-Date	% of Attendance	Admission Fee	Date of Payment	Special Fee			Total	Date of Payment	Initials of Cash Receiver	Remarks
								Fees Rs.	Fine Rs.	Total Rs.				
18	18													
19	19													
20	20													
21	21													
22	22													
23	23													
24	24													
25	25													
26	26													
27	27													
28	28													
29	29													
30	30													
31	31													

Head of the Department Department of Mathematics Sree Narayana College Chattannur	Fees collected Rs Curr. it Arrear Fine Total	No. Admitted..... No. Left..... No. at the end of the month.....	Class Teacher	Headmaster/Principal
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Attendance statement 2020-21



SREE NARAYANA COLLEGE CHATHANNUR  
DEPARTMENT OF MATHEMATICS

## CERTIFICATE OF COMPLETION

*This is to certify that Mr/Ms ..... Sruthy Murali, III Bsc Mathematics  
has participated and completed the College level Certificate Course on  
"DATA ANALYSIS 2020-21" organized by Department of Mathematics,  
Sree Narayana College Chathannur.*

*Anjana*  
**Coordinator**  
*Anjana.S.S*

*Rani Rajeevan*  
**H.O.D**  
*Dr. Rani Rajeevan*



*Rajeevan*  
**Principal**



**SREE NARAYANA COLLEGE CHATHANNUR**

**Department of Mathematics**

**Certificate Course on Data Analysis**

**Report 2020-21**

Data analysis is the science of examining data to conclude the information to make decisions . It is used in many industries regardless of the branch. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Due to the pandemic the theory classes are taken through online mode and the practical classes are taken after the lockdown. Smt. Anjana S S, Faculty in Statistics has led the classes from 12/10/2020 to 2/12/2020 and the examination was conducted on 16/03/2021 at the Computer lab. A total of 23 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator

Anjana S S

**2019-20**

**CERTIFICATE COURSE IN  
INTRODUCTION TO R PROGRAMMING**

During the academic year 2019-20, 15 students registered for the certificate course in An Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
**(Affiliated to the University of Kerala, Accredited by**  
**NAAC with 'B Grade')**



**College -level Certificate Course on**  
**"INTRODUCTION TO R PROGRAMMING"**

**Department of Mathematics (2019-20)**

*Course coordinator: Anjana S S*

*Contact no: 8848652826*

*Principal*

*Dr.C S Subhash Chandran*

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course -II Syllabus**

**Title of the Course: Introduction to R PROGRAMMING**

**Aim of the Course**

This Course is aimed at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

**Objective of the course**

- The basics of statistical computing and data analysis
- How to use R for analytical programming

**Outcome of the course**

- After completing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

**Sree Narayana College Chathannur**

**Department of Mathematics**

**Certificate Course - Syllabus**

**Title of the Course: Introduction To R Programming**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using R programming.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using R programming.
3. Histogram
  - 3.1 Methods to install R studio.
  - 3.2 Methods to construct frequency tables using R.
  - 3.3 Methods for drawing Histogram using R.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using R.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using R.
  
2. Regression

2.1 Methods to find regression using R.

**Module 4: ANOVA using R(3hr)**

1. One way ANOVA

1.1 Methods for finding ANOVA single factor (one way ANOVA).

1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

2.1 Methods to find two way ANOVA with and without replications.

2.2 Result analysis for two way ANOVA.

***REFERENCES***

- 1. Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
- 2. Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
- 3. Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2019-2020**  
**INTRODUCTION TO R PROGRAMMING**

Time : 1 hr.

Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Class	10-20	20-30	30-50	50-60	60-80	80-100
Frequency	15	10	12	11	28	14

(1\*10=10)

Answer any two question each carry 20 marks

3. Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,  
9.43,

773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,  
30.58, 383.62,616.35,569.57,675.10,352.34

4. The following table shows age and blood pressure of 20 persons.  
Calculate correlation coefficient.

X: 35, 40, 46, 58, 63, 70, 45, 58, 36, 40, 52, 64, 70, 85, 68, 54, 38, 60, 52, 75

Y: 80, 85, 80, 92, 95, 98, 100, 82, 72, 81, 91, 83, 110, 76, 91, 95, 82, 95, 110, 85

5. Obtain the regression equation of x on y and y on x for the following  
data and also estimate y at x = 10

X : 12 15 8 11 9

Y : 8 12 13 9 10

(2\*20=40)

The image shows a screenshot of the RGui (64-bit) interface. The window title is "RGui (64-bit)" and it has a menu bar with "File", "Edit", "Packages", "Windows", and "Help". Below the menu bar are several icons for file operations. The main workspace is divided into two panes: "R Console" on the left and "Untitled - R Editor" on the right. Both panes contain the same R code, which is as follows:

```
> # R program to illustrate
> # pearson Correlation Testing
> # Using cor()
>
> # Taking two numeric
> # Vectors with same length
> x = c(65,66,67,68,69,71,73,75)
> y = c(67,68,64,68,72,70,69,70)
>
> # Calculating
> # Correlation coefficient
> # Using cor() method
> result = cor(x, y, method = "pearson")
>
> # Print the result
> cat("Pearson correlation coefficient is:", result)
Pearson correlation coefficient is: 0.5300889> |
```

**A Sample answer sheet**



PUPILS ATTENDANCE REGISTER OF SCHOOL																		
Admission No.	Sl No.	NAME	Days	Date														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2208	1	Anjana B. Poyad		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	2	Anselamel A		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3	Ansu S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4	Anusuya P. B.		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	5	Aranya R		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	6	Ashika S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	7	Ashika A N		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	8	Banyu Sudhan		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	9	Soonya S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	10	Anusuya Babu		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	11	Devika B.R		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	12	Devashya Chandran		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	13	Geetha Anagan		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	14	Geetha Bin		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	15	Veena V. S.		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Course Coordinator  
Anjana S

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Changanur

TOTAL WORKING DAYS			Daily Attendance	FN	AN
PREVIOUS MONTH	PRESENT MONTH	TOTAL			

No. on roll at the beginning in the month: .....

FOR THE MONTH OF 2019-2020																										
															Std.			Div.								
18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days Present	Present Absence Ratio	% of Attendance	Admission Fee	Special Fee	Fees Rs.	Fine Rs.	Total Rs.	Date of Payment	Initials of Class Teacher	Remarks		

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Changanur

Fees collected Rs	No. Admitted
Curr of	No. Left
Arrear	No. at the end of the month
Fine	
Total	

Class Teacher Headmaster/Principal

Attendance statement 2019-20



**SREE NARAYANA COLLEGE  
CHATHANNUR**

DEPARTMENT OF MATHEMATICS

**CERTIFICATE OF COMPLETION**

*This is to certify that Mr/Ms. .... Athira R. | Bsc Mathematics  
has participated and completed the College level Certificate Course on  
"INTRODUCTION TO R PROGRAMMING 2019-20" organized  
by Department of Mathematics, Sree Narayana College Chathannur.*

*Anjana*  
**Coordinator**  
*Anjana.S.S*

*J. K.*  
**H.O.D**  
*Dr. Rani Rajeevan*



*[Signature]*  
**Principal**

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**SREE NARAYANA COLLEGE CHATHANNUR**  
**Department of Mathematics**  
**Certificate Course on Introduction to R Programming**  
**Report 2019-20**

R is often used for statistical computing and graphical presentation to analyze and visualize data. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 05.11.2019. It was officially inaugurated by Dr. C S Subhash Chandran Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 05.11.2019 to 14.01.2020 and the examination was conducted on 21.01.2020 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator

Anjana S S

# **CERTIFICATE COURSE IN DATA ANALYSIS**

During the academic year 2019-20 , 23 students registered for the s certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
"DATA ANALYSIS"**

**Department of Mathematics (2019-20)**

*Course coordinator: Anjana S S*

*Contact no: 8848652826*

*Principal*

*Dr. C S Subhash Chandran*

**Sree Narayana College, Chathannur**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis**

**Aim of the Course**

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

**Objective of the course**

- To teach the participants advanced Excel functions.

**Outcome of the course**

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes.** As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis using Microsoft Excel**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using Excel tools.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using Excel tools.
3. Histogram
  - 3.1 Methods to install Data analysis tool pack in Excel.
  - 3.2 Methods to construct frequency tables in Excel.
  - 3.3 Methods for drawing Histogram using Data analysis functions.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using Data analysis tool pack.
2. Regression
  - 2.1 Methods to find regression using Data analysis tool pack.

**REFERENCES**

- 1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel*. Academic Publishing Ltd., UK**
- 2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide*. SAGE Publication Inc. New Delhi**
- 3. Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2019-2020**  
**DATA ANALYSIS USING MICROSOFT EXCEL**

Time : 1 hr.

Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Class	10-20	20-30	30-50	50-60	60-80	80-100
Frequency	15	10	12	11	28	14

(1\*10=10)



Answer any two question each carry 20 marks

3. Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,  
9.43,

773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,  
30.58, 383.62,616.35,569.57,675.10,352.34

4. The following table shows age and blood pressure of 20 persons.  
Calculate correlation coefficient.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

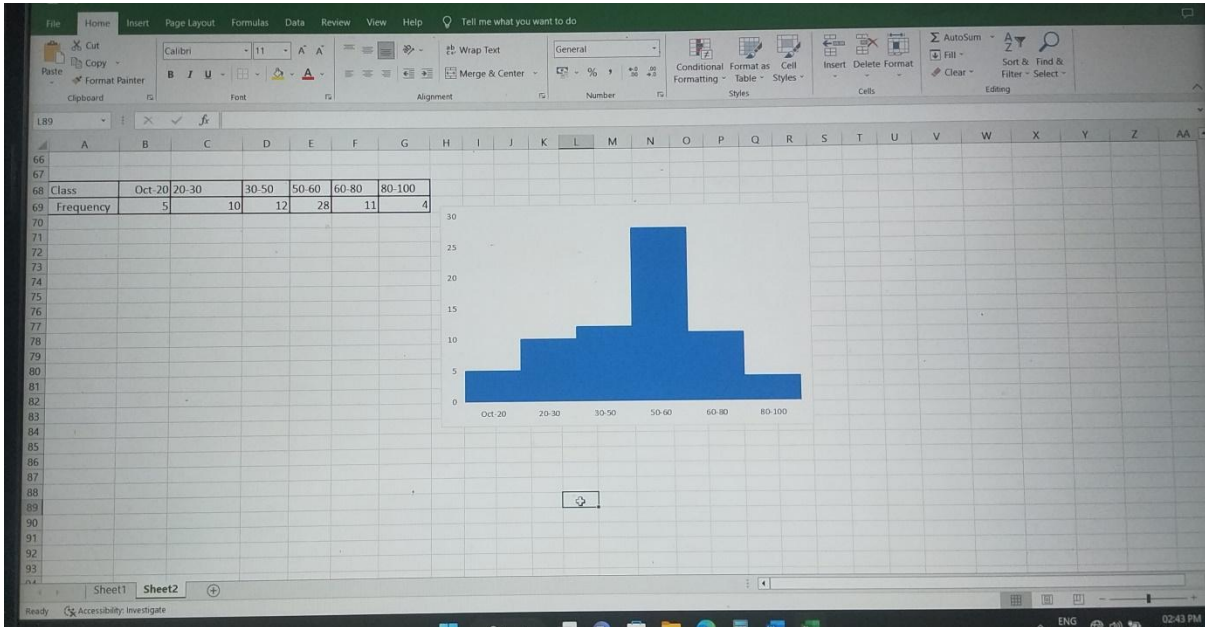
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Obtain the regression equation of x on y and y on x for the following  
data and also estimate y at x =10

X : 12 15 8 11 9

Y : 8 12 13 9 10

(2\*20=40)



A sample answer sheet

PUPILS ATTENDANCE REGISTER OF											SCHOOL								
Admission No.	No.	NAME	Days																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1		Akhata S. DEN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2		Akshay S.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3		Devi C.H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4		Hriday H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5		Manasa M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6		Chanchal M. Prashobh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7		Rakshmal R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		Madhina A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9		Vishnu Raj B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10		Neethu M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11		Vishal Suresh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12		Souha S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13		Anagha Raj	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14		Shama S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15		Tharun S R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16		Sarthi J P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17		Anariba padmarabhan S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18		Aakitha D	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19		Aakshay Mohan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20		Geethika Vijay	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21		Muhammed A. abarudheen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22		Nandu Anand	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
23		Hemakrishna S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

COURSE COORDINATOR  
ANJANA S. S

TOTAL WORKING DAYS			Daily Attendance	FN	AN	Head of the Department Department of Mathematics Sree Narayana College Changanur
PREVIOUS MONTH	PRESENT MONTH	TOTAL				

FOR THE MONTH OF																															2019-2020		Std.			Div.	
18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Present	No. of Present Up-to-Date	% of Attendance	Admission Fee	Date of Payment	Special Fees	Fine	Total	Class of Payment	Initials of Class Teacher	Remarks													

Fees collected Rs		No. Admitted.....
Current	Arrear	
Total		No. Left.....
Class Teacher		Headmaster/Principal

Attendance statement 2019-20



SREE NARAYANA COLLEGE CHATHANNUR  
DEPARTMENT OF MATHEMATICS

## CERTIFICATE OF COMPLETION

This is to certify that Mr/Ms *Vishnu Raj R. III Beom*  
has participated and completed the College level Certificate Course on  
"DATA ANALYSIS 2019-20" organized by Department of Mathematics,  
Sree Narayana College Chathannur.

*Anjana S.S*  
**Coordinator**  
*Anjana S.S*

*Dr. Rani Rajeevan*  
**H.O.D**  
*Dr. Rani Rajeevan*



*Dr. Rani Rajeevan*  
**Principal**

**SREE NARAYANA COLLEGE CHATHANNUR**

**Department of Mathematics**

**Certificate Course on Data Analysis**

**Report 2019-20**

Data analysis is the process of collecting, modeling, and analyzing data using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 2.12.2019. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 2/12/2019 to 3/2/2020 and the examination was conducted on 9/10/2020 at the Computer lab. A total of 23 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator

**2018-19**

**CERTIFICATE COURSE IN  
INTRODUCTION TO R PROGRAMMING**

During the academic year 2018-19, fifteen students registered for the certificate course in An Introduction to R Programming, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in understanding the importance. The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
" INTRODUCTION TO R PROGRAMMING"**

**Department of Mathematics (2018-19)**

**Course coordinator: Anjana S S**

**Contact no: 8848652826**

**Principal**

**Dr.T Pradeep**

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course -II Syllabus**

**Title of the Course: Introduction to R PROGRAMMING**

**Aim of the Course**

This Course is aimed at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

**Objective of the course**

- The basics of statistical computing and data analysis
- How to use R for analytical programming

**Outcome of the course**

- After completing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

**Sree Narayana College Chathannur**

**Department of Mathematics**

**Certificate Course - Syllabus**

**Title of the Course: Introduction To R Programming**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using R programming.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using R programming.
3. Histogram
  - 3.1 Methods to install R studio.
  - 3.2 Methods to construct frequency tables using R.
  - 3.3 Methods for drawing Histogram using R.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using R.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using R.
  
2. Regression



2.1 Methods to find regression using R.

**Module 4: ANOVA using R(3hr)**

1. One way ANOVA

1.1 Methods for finding ANOVA single factor (one way ANOVA).

1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

2.1 Methods to find two way ANOVA with and without replications.

2.2 Result analysis for two way ANOVA.

***REFERENCES***

- 1. Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
- 2. Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
- 3. Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2018-19**  
**INTRODUCTION TO R PROGRAMMING**

Time : 1 hr

max.mark :50

**Answer any one question given below each carry 10 marks.**

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,  
84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,  
68,81,79,85.

(1\*10=10)

Answer any two question each carry 20 marks

3. Find mean, median and mode for the following data.

Marks	0-10	10-20	30-40	40-50	50-60	60-70
No. of students	22	10	28	10	14	16

4. The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

X: 35, 40, 46, 58, 63, 70, 45, 58, 36, 40, 52, 64, 70, 85, 68, 54, 38, 60, 52, 75

Y: 80, 85, 80, 92, 95, 98, 100, 82, 72, 81, 91, 83, 110, 76, 91, 95, 82, 95, 110, 85

5. Find the two regression equations for the following data of sales and expenses .

Sales : 50 50 55 60 65 65 65 60 60 50

Expense : 11 13 14 16 16 15 15 14 13 13

(2\*20=40)

```
RGui (64-bit)
File Edit View Misc Packages Windows Help

R Console
> # R program to illustrate
> # Descriptive Analysis
>
> # Import the data using read.csv()
> myData <-c(1,2,3,4)
>
> # Calculating summary
> summary = summary(myData)
> print(summary)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  1.00  1.75  2.50  2.50  3.25  4.00
>
> # Calculating variance
Error: unexpected symbol in " Calculating variance"
> variance = var(myData)
> print(variance)
[1] 1.666667
>
> # Calculating Standard deviation
> std = sd(myData)
> print(std)
[1] 1.290994
>
> # Calculating Quartiles
> quartiles = quantile(myData)
> print(quartiles)
 0% 25% 50% 75% 100%
1.00 1.75 2.50 3.25 4.00
>
> |

Untitled - R Editor
# R program to illustrate
# Descriptive Analysis
# Import the data using read.csv()
myData <-c(1,2,3,4)
# Calculating summary
summary = summary(myData)
print(summary)

Calculating variance
variance = var(myData)
print(variance)

# Calculating Standard deviation
std = sd(myData)
print(std)

# Calculating Quartiles
quartiles = quantile(myData)
print(quartiles)
```

A sample answer sheet





**SREE NARAYANA COLLEGE  
CHATHANNUR**

DEPARTMENT OF MATHEMATICS

**CERTIFICATE OF COMPLETION**

*This is to certify that Mr/Ms. .... Karthika J S. | Bsc Mathematics .....  
has participated and completed the College level Certificate Course on  
"INTRODUCTION TO R PROGRAMMING 2018-19" organized  
by Department of Mathematics, Sree Narayana College Chathannur.*

*Anjana*  
**Coordinator**  
*Anjana. v. s*

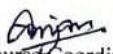
*[Signature]*  
**H.O.D**

*[Signature]*  
**Principal**

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**SREE NARAYANA COLLEGE CHATHANNUR**  
**Department of Mathematics**  
**Certificate Course on Introduction to R Programming**  
**Report 2018-19**

R is an open source programming language that is commonly used as a tool for data analysis and statistical functions. It is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 08.11.2018. It was officially inaugurated by Dr. T Pradeep Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 08.11.2018 to 15.01.2019 and the examination was conducted on 22.01.2019 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator  
**Anjana S S**

## **CERTIFICATE COURSE – II DATA ANALYSIS**

During the academic year 2018-19, 25 students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
"DATA ANALYSIS "**

**Department of Mathematics (2018-19)**

***Course coordinator: Anjana S S***  
***Contact no: 8848652826***

***Principal***  
***Dr. T Pradeep***



**Sree Narayana College, Chathannur**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis**

**Aim of the Course**

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

**Objective of the course**

- To teach the participants advanced Excel functions.

**Outcome of the course**

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes.** As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis using Microsoft Excel**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using Excel tools.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using Excel tools.
3. Histogram
  - 3.1 Methods to install Data analysis tool pack in Excel.
  - 3.2 Methods to construct frequency tables in Excel.
  - 3.3 Methods for drawing Histogram using Data analysis functions.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using Data analysis tool pack.
2. Regression
  - 2.1 Methods to find regression using Data analysis tool pack.

**REFERENCES**

- 1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel*. Academic Publishing Ltd., UK**
- 2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide*. SAGE Publication Inc. New Delhi**
- 3. Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2018-19**  
**DATA ANALYSIS USING MICROSOFT EXCEL**

Time : 1 hr  
max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,  
84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,  
68,81,79,85.

(1\*10=10)

Answer any two question each carry 20 marks

3. Find mean, median and mode for the following data.

Marks	0-10	10-20	30-40	40-50	50-60	60-70
No. of students	22	10	28	10	14	16

4. The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

X: 35, 40, 46, 58, 63, 70, 45, 58, 36, 40, 52, 64, 70, 85, 68, 54, 38, 60, 52, 75

Y: 80, 85, 80, 92, 95, 98, 100, 82, 72, 81, 91, 83, 110, 76, 91, 95, 82, 95, 110, 85

5. Find the two regression equations for the following data of sales and expenses.

Sales : 50 50 55 60 65 65 65 60 60 50

Expense : 11 13 14 16 16 15 15 14 13 13

(2\*20=40)

The screenshot shows an Excel spreadsheet with the following data and calculations:

	x	y
5	35	40
6	80	85
7	46	80
8	58	92
9	63	95
10	70	98
11	45	100
12	58	82
13	36	72
14	40	81
15	52	91
16	64	83
17	70	110
18	85	76
19	68	91
20	54	95
21	38	82
22	60	95
23	52	110
24	75	85

9	r = 0.2554	
12	x	y
13	x	1
14	y	0.2554 1
16	Correlation coefficient	0.2554

A Sample answer sheet

### PUPILS ATTENDANCE REGISTER OF SCHOOL

Admission No.	No.	NAME	Days							SCHOOL									
			Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		Anjana P Charchap	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2		Rashmi L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3		Ashwathy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4		Binu G.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5		Soniya Raj	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6		Sarthak S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7		Anu G.O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8		Chandana Prabodi	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9		Sarthak S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10		Soniya Manoharan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11		Sarika Kishori S.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12		Madhu Prabash	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13		Malu M.A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14		Akhil S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15		Anjali Raj	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16		Anaritha G.Nadh	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17		Rashmi L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18		Anitha S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19		Anya P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20		Soniya S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21		Sarathk S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22		Rishan S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23		Madh Prabashi	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24		Sarthak S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25		Soniya S.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Course Co-ordinator  
Anjana S.S

FOR THE MONTH OF 2018 - 2019

No. of Days	Present	Absent	Up-to Date	No. of Absences	Admission Fee	Date of Payment	Special Fee			Total Rs.	Date of Payment	Initials of Class Teacher	Remarks
							Fees Rs.	Fine Rs.	Total Rs.				
18	X		X										
19	X		X										
20	X		X										
21	X		X										
22	X		X										
23	X		X										
24	X		X										
25	X		X										
26	X		X										
27	X		X										
28	X		X										
29	X		X										
30	X		X										
31	X		X										

Fees collected Rs. \_\_\_\_\_  
 Current \_\_\_\_\_  
 Arrear \_\_\_\_\_  
 Fine \_\_\_\_\_  
 Total \_\_\_\_\_

No. Admitted.....  
 No. Left.....  
 No. at the end of the month.....

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Chattannur

Headmaster/Principal

**Attendance statement 2018-19**



SREE NARAYANA COLLEGE CHATHANNUR  
DEPARTMENT OF MATHEMATICS

## CERTIFICATE OF COMPLETION

This is to certify that Mr/Ms *Anjana R Chandran, III Bsc Mathematics*  
has participated and completed the College level Certificate Course on  
"DATA ANALYSIS 2018-19" organized by Department of Mathematics,  
Sree Narayana College Chathannur.

*Anjan*  
**Coordinator**  
*Anjanar S*

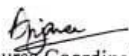
*[Signature]*  
**H.O.D**

*[Signature]*  
**Principal**



**SREE NARAYANA COLLEGE CHATHANNUR**  
**Department of Mathematics**  
**Certificate Course on Data Analysis**  
**Report 2018-19**

Data analysis is the practice of working with data to draw useful information which can then be used to make informed decisions using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 3/12/2018. It was officially inaugurated by Dr. T Pradeep, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 3/12/2018 to 18/02/2019 and the examination was conducted on 25/02/2019 at the Computer lab. A total of 25 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

  
Course Coordinator  
Anjana S S

**2017-18**

**CERTIFICATE COURSE IN  
INTRODUCTION TO R PROGRAMMING**

During the academic year 2017-18, fifteen students registered for the certificate course in An Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
" INTRODUCTION TO R PROGRAMMING"**

**Department of Mathematics (2017-18)**

*Course coordinator: Karthika V S*

*Principal*

*Contact no: 9746039564*

*Dr.C S Subhash Chandran*

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course -II Syllabus**

**Title of the Course: Introduction to R PROGRAMMING**

**Aim of the Course**

This Course is aimed at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

**Objective of the course**

- The basics of statistical computing and data analysis
- How to use R for analytical programming

**Outcome of the course**

- After completing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

**Sree Narayana College Chathannur**

**Department of Mathematics**

**Certificate Course - Syllabus**

**Title of the Course: Introduction To R Programming**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams
  - 1.1 Methods for drawing different bar diagrams using R programming.
2. Pie diagrams and Scatter diagram
  - 2.1 Methods for drawing diagrams using R programming.
3. Histogram
  - 3.1 Methods to install R studio.
  - 3.2 Methods to construct frequency tables using R.
  - 3.3 Methods for drawing Histogram using R.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode
  - 1.1 Methods to find Mean, Median, Mode using R.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation
  - 1.1 Methods for finding correlation using R.
2. Regression

2.1 Methods to find regression using R.

**Module 4: ANOVA using R(3hr)**

1. One way ANOVA

1.1 Methods for finding ANOVA single factor (one way ANOVA).

1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

2.1 Methods to find two way ANOVA with and without replications.

2.2 Result analysis for two way ANOVA.

***REFERENCES***

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2017-18**  
**INTRODUCTION TO R PROGRAMMING**

Time : 1 hr

Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table and histogram for the following data.

45,56,41,86,87,63,60,62,43,55,78,71,56,59,44,48,98,76,74,66,81,49,52,  
67,64,78,70,63,48,92,88,60,61,80,75,62,55,60,70,96,90,49,58,50,70,61,  
84,90,96,92,43,75,68,73,85,80,81,63,90,84.

(1\*10=10)

**Answer any two question each carry 20 marks**

3. Find all descriptive measures of statistics for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,  
84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,  
68,81,79,85.

4. Prepare a scatter diagram for the following data.

X: 35, 40, 46, 58, 63, 70, 45, 58, 36, 40, 52, 64, 70, 85, 68, 54, 38, 60, 52, 75

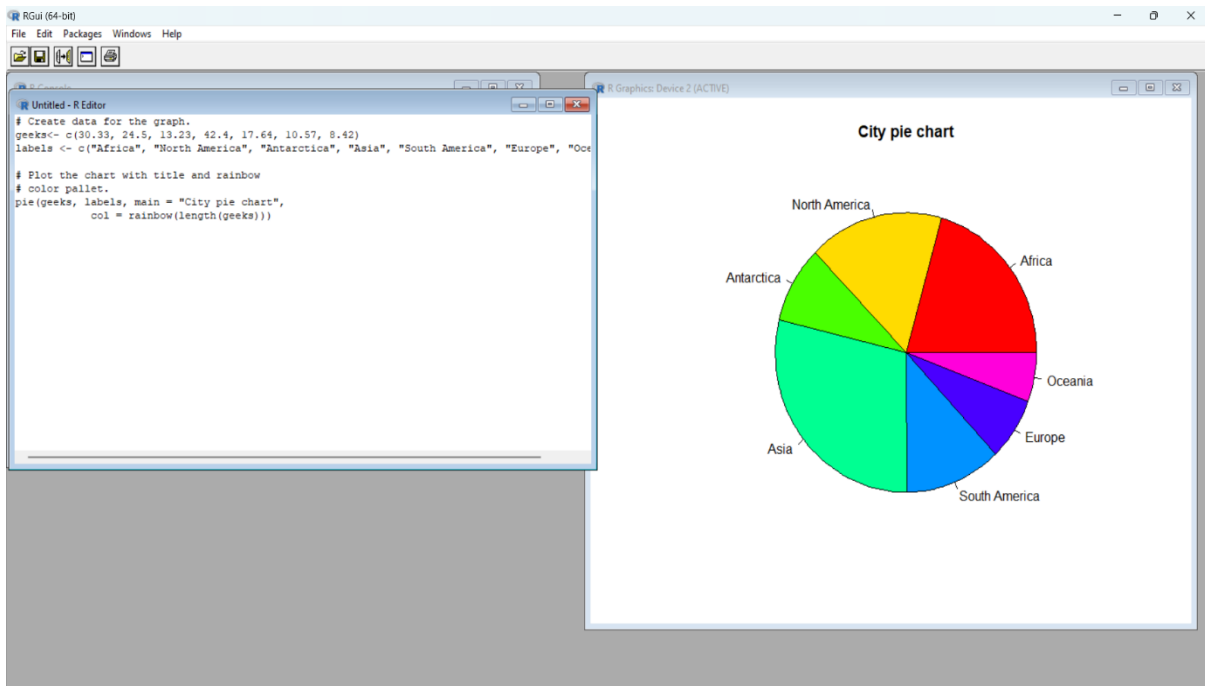
Y: 80, 85, 80, 92, 95, 98, 100, 82, 72, 81, 91, 83, 110, 76, 91, 95, 82, 95, 110, 85

5. Find the two regression equations for the following data of sales and expenses .

X : 45 50 40 48 45 55 52 48 50 40

Y : 10 12 20 15 14 10 13 16 20 18

(2\*20=40)



A sample answer sheet



PUPILS ATTENDANCE REGISTER OF													SCHOOL																			
Admission No.	Roll No.	NAME	Days													No. of Days Present	Present Up-to-Date	% of Attendance	Admission Fee	Date of Payment	Special Fee			Total	Date of Payment	Initials of Class Teacher	Remarks					
			1	2	3	4	5	6	7	8	9	10	11	12	13						14	15	16					17	Rs.	Rs.	Rs.	
2017/2001	1	Ashwin Krishna K.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
02	2	Ashwin S. Reddy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
03	3	Ashwin S. Reddy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
04	4	Chandana / Chandana	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
15	5	Maanika	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
20	6	Swathi T.R	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
27	7	Vijay M.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
28	8	Ananta Pedmanakhan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
29	9	Ashwin M.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
30	10	Ashwin M.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
35	11	Ashwin M.S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
40	12	Radika Vijayam	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
41	13	Hari Krishna K.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
43	14	Mohammed Aghachathen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												
45	15	Neeha S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	17	17/01/18	100												

Course Coordinator

Karthika V.S

Head of the Department  
Department of Mathematics  
Sree Narayana College  
Chathanur

TOTAL WORKING DAYS			Daily Attendance	FN	AN	Initials of Teacher
PREVIOUS MONTH	PRESENT MONTH	TOTAL				

No. on roll at the beginning in the month.....

FOR THE MONTH OF													2017-2018			Std.			Div.							
18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days Present	Present Up-to-Date	% of Attendance	Admission Fee	Date of Payment	Fees Rs.	Fine Rs.	Total Rs.	Date of Payment	Initials of Class Teacher	Remarks		
						X								1	17/01/18	100										
						X								1	17/01/18	100										
						X								1	17/01/18	100										
						X								1	17/01/18	100										
						X								1	17/01/18	100										
						X								1	17/01/18	100										
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						X								1	17/01/18	100										
						X								1	17/01/18	100										
						X																				



**SREE NARAYANA COLLEGE  
CHATHANNUR**

DEPARTMENT OF MATHEMATICS

**CERTIFICATE OF COMPLETION**

*This is to certify that Mr/Ms. Chanchal Prasobh , | Bsc Mathematics  
has participated and completed the College level Certificate Course on  
"INTRODUCTION TO R PROGRAMMING 2017-18" organized  
by Department of Mathematics, Sree Narayana College Chathannur.*

*Karthika*  
**Coordinator**  
KARTHIKA V

*[Signature]*  
**H.O.D**



**SREE NARAYANA COLLEGE CHATHANNUR**  
**Department of Mathematics**  
**Certificate Course on Introduction to R Programming**  
**Report 2017-18**

R has become a very popular programming language and development environment used for statistical computation. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 02.11.2017. It was officially inaugurated by Dr. C S Subhash Chandran Principal, S N College, Chathannur. Smt. Karthika V S, Faculty in Statistics has led the classes from 02.11.2017 to 18.01.2018 and the examination was conducted on 25.01.2017 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.



Course Coordinator  
Karthika V S

## **CERTIFICATE COURSE IN DATA ANALYSIS**

During the academic year 2017-18, twenty seven students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.

**SREE NARAYANA COLLEGE , CHATHANNUR**  
(Affiliated to the University of Kerala, Accredited by  
NAAC with 'B Grade')



**College -level Certificate Course on  
"DATA ANALYSIS "**

**Department of Mathematics (2017-18)**

*Course coordinator: Karthika V S*

*Principal*

*Contact no: 9746039564*

*Dr.C S Subhash Chandran*

**Sree Narayana College, Chathannur**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis**

**Aim of the Course**

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

**Objective of the course**

- To teach the participants advanced Excel functions.

**Outcome of the course**

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes.** As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

**Sree Narayana College, Kollam**

**Department of Mathematics**

**Certificate Course Syllabus**

**Title of the Course: Data Analysis using Microsoft Excel**

**Contact Hours: 30 hr [15(T) + 15(P)]**

**Module 1 : Charts and Diagrams (5 hr)**

1. Bar diagrams

1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

3.1 Methods to install Data analysis tool pack in Excel.

3.2 Methods to construct frequency tables in Excel.

3.3 Methods for drawing Histogram using Data analysis functions.

**Module 2 : Descriptive Statistics (4hr)**

1. Mean, Median, Mode

1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

**Module 3 : Correlation and Regression (3hr)**

1. Correlation

1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

2.1 Methods to find regression using Data analysis tool pack.

**REFERENCES**

- 1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel*. Academic Publishing Ltd., UK**
- 2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide*. SAGE Publication Inc. New Delhi**
- 3. Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada**

**SREE NARAYANA COLLEGE , KOLLAM**  
**DEPARTMENT OF MATHEMATICS**  
**CERTIFICATE COURSE EXAMINATION 2017-18**  
**DATA ANALYSIS USING MICROSOFT EXCEL**

Time : 1 hr

max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42



2. Prepare a frequency table and histogram for the following data.

45,56,41,86,87,63,60,62,43,55,78,71,56,59,44,48,98,76,74,66,81,49,52,  
67,64,78,70,63,48,92,88,60,61,80,75,62,55,60,70,96,90,49,58,50,70,61,  
84,90,96,92,43,75,68,73,85,80,81,63,90,84.

(1\*10=10)

Answer any two question each carry 20 marks

3. Find all descriptive measures of statistics for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,  
84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,  
68,81,79,85.

4. Prepare a scatter diagram for the following data.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

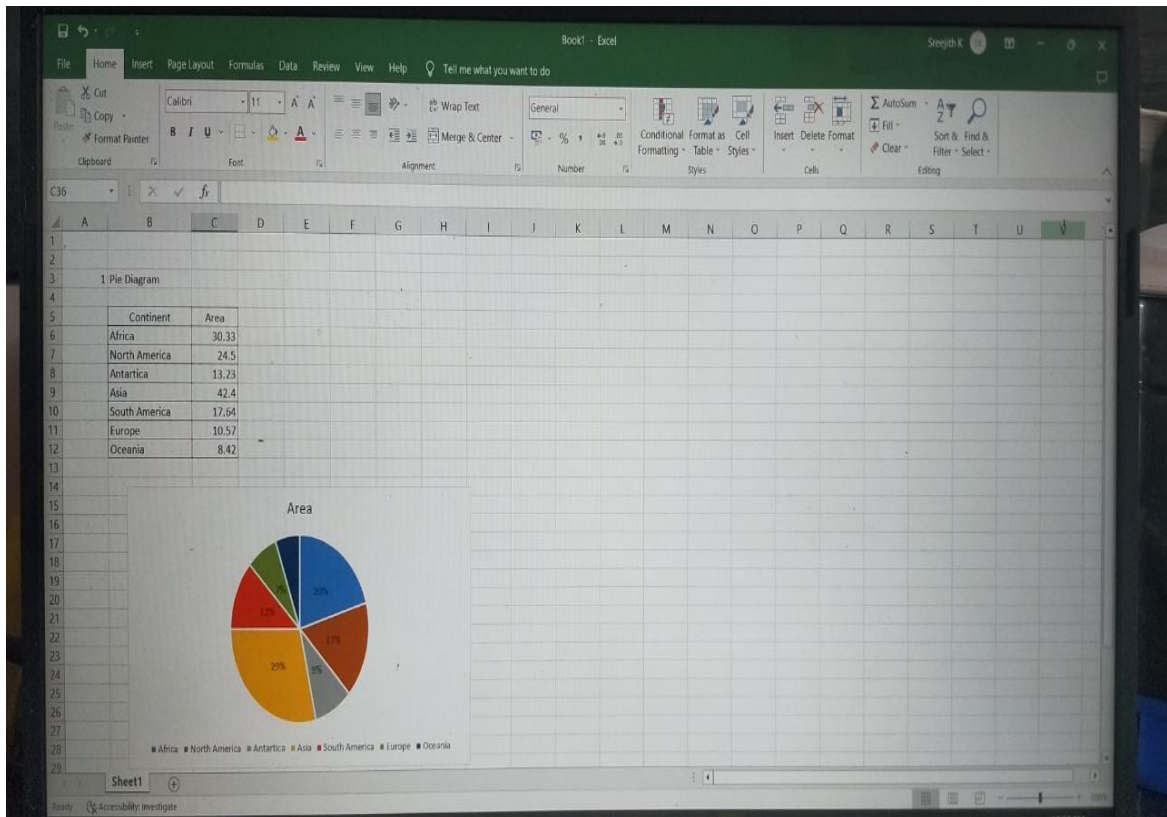
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Find the two regression equations for the following data of sales and expenses

X : 45 50 40 48 45 55 52 48 50 40

Y : 10 12 20 15 14 10 13 16 20 18

(2\*20=40)



A sample answer sheet

**SCHOOL**

**CLASS ATTENDANCE REGISTER OF**

Sl. No.	NAME	Date	Days							17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days Present	Present % of Admission	Up-to-Date
			1	2	3	4	5	6	7																		
1	Umapikrishnan.R		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	Abhinav.A		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	Kavya.A.P		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	Anjali.M.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	Breehji.M		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	Anju.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	Parvathy.T		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	Arya.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	Sathya.S.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	Suji.S.M		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	Sreejish.S.C		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	Sumanya.M		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	Nishith.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	Abhinav.A.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	Ananya.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	Akhila.Raj		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	Arjun.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	Aru.shaji		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19	Divya.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	Devika.Mohan		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21	Krishnendu.B		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	Jyothimol.R		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
23	Siddha.Fakima.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
24	Suhin.Prakash.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	Alina.V		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26	Anjana.Krishna.K		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27	Anjali.S		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Concess to students

Karthika V.S

TOTAL WORKING DAYS			Daily Attendance	FN	AN
PUS MONTH	PRESENT MONTH	TOTAL			

on roll at the rising in the month.

Head of the Department  
Department of Mathematics  
Shree Narayana College  
Chattampi

**FOR THE MONTH OF 2017 -2018**

Std.		Div.		No. of Days Present	Present % of Admission	Up-to-Date	Special Fee Rs.	Fine Rs.	Total Rs.	Date of Payment	Initials of Class Teacher
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											

Head of the Department Department of Mathematics Shree Narayana College Chattampi	Fess collected Rs Current Arrear Fine Total	No. Admitted..... No. Left..... No. at the end of the month.....
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Class Teacher

Headmaster/P

Attendance statement 2017-18



SREE NARAYANA COLLEGE CHATHANNUR  
DEPARTMENT OF MATHEMATICS

## CERTIFICATE OF COMPLETION

*This is to certify that Mr/Ms ..... **Gopikrishnan R, Third year Mathematics** .....  
has participated and completed the College level Certificate Course on  
"DATA ANALYSIS 2017-18" organized by Department of Mathematics,  
Sree Narayana College Chathannur.*

*Karthika*  
**Coordinator**  
KARTHIKA.V

*[Signature]*  
**H.O.D**



*[Signature]*  
**Principal**

**SREE NARAYANA COLLEGE CHATHANNUR**

**Department of Mathematics**

**Certificate Course on Data Analysis**

**Report 2017-18**

Data analysis is the process of collecting, modeling, and analyzing data using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 04.12.2017. It was officially inaugurated by Dr. C S Subhash Chanran, Principal, S N College, Chathannur. Smt. Karthika V S, Faculty in Statistics has led the classes from 04.12.2017 to 06.02.2018 and the examination was conducted on 23.02.2018 at the Computer lab. A total of 27 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.



Course Coordinator

Karthika V S