

"Education through self-help is our motto"- KARMAVEER
RAYAT SHIKSHAN SANSTHA'S
RAJARSHI CHHATRAPATI SHAHU COLLEGE, KOLHAPUR
DEPARTMENT OF STATISTICS

Organized

Computation of Statistics using R-Software
Self – Funded under Short Term Courses in the academic year 2024-25
COURSE REPORT

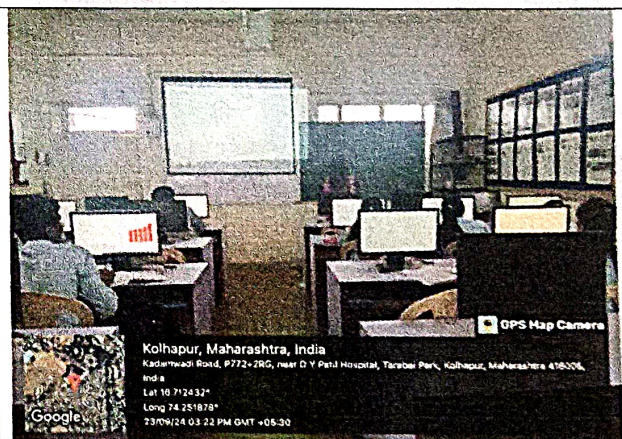
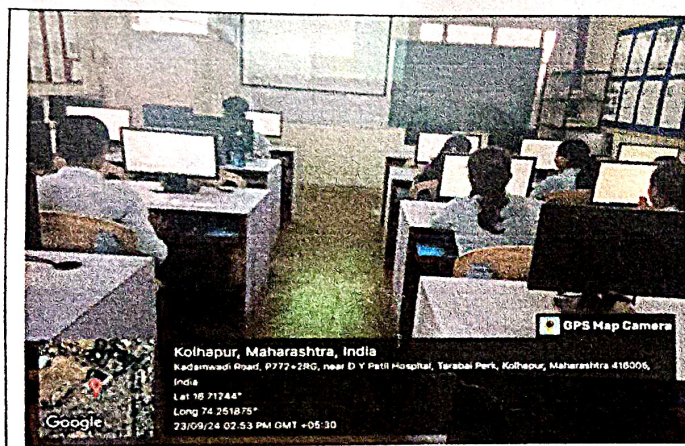
Department of statistics organized the certificate course on computation of statistics using R-software for B. Sc. III students for the academic year 2024-25. The main objectives of this course are:

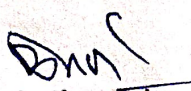
- To learn R-software and how to use it for effective exploratory data analysis.
- To learn number of data types, data structures, various operators
- To learn syntax of various loops
- To learn various inbuilt functions
- To learn how to simulate data from various distributions
- To learn analysis of one-way and two-way analysis of data

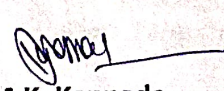
For this course fee of Rs.500 charged to the students. The course was conducted in the period of 14/10/2024 to 25/10/2024. Total number of beneficiaries for this course is 17. After completion of this course student's knowledge was checked through various computation tasks through assignments. Each student who successfully completed this course was awarded by certificate. Mr. Chougule P. S.(co-ordinator). Smt. Gadhari G. A. and Smt. Jadhav S. P worked as a Resource person for this course.

Outcomes: The students shall become confident and equipped with all the knowledge requires to perform analytical activities using R

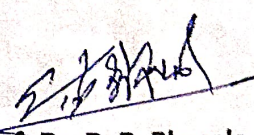
**Total number of
beneficiaries is 17.**




Mr. P. S. Chougule
Head & Coordinator
Department of Statistics


Dr. M.K. Kannade
Incharge,
Short term Courses


Dr. U. S. Shalke
IQAC
Coordinator


Prof. Dr. D. R. Bhosale
Principal
R. C. Shahu College, Kolhapur

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Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

Department of Statistics

Organized

Certificate Course on Computation of Statistics using R –Software

(Self – Funded)

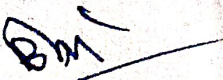
Under

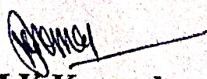
COC and Short Term Courses

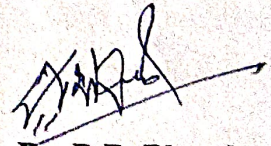
2024-2025

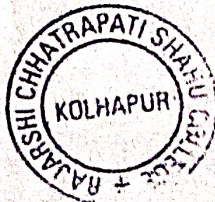
Income and Expenditure Statement

Income	Amount (in Rs.)	Expenditure	Amount (in Rs.)
Particulars		Particulars	
1) Total Participants = 17 (17*500)	8500/-	1) GST 18%	1530/-
		2) Certificate Printing	260/-
		2) Remuneration for Recourse Person Lumsum (40% of Total amount 6710/- is 2684 is equally distributed equally distributed into 4 persons)	
		ii) Smt. G.A. Gadhari	1342/-
		iii) Smt. Jadhav S.P.	1342/-
		3)Balance to College	4026/-
Total	8500=00	Total	8500=00


Mr. P. S. Chougule
Coordinator & Head,
Department of Statistics


Dr. M.K. Kannade
Incharge,
Short Term Courses


Prof. Dr. D R. Bhosale
I/C Principal,
R. C. Shahu College, Kolhapur



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Rayat Shikshan Sanstha's

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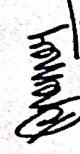
NAAC 4th Cycle Reaccredited with A++ (CGPA- 3.78)

DEPARTMENT OF STATISTICS

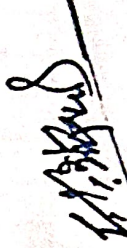
CERTIFICATE

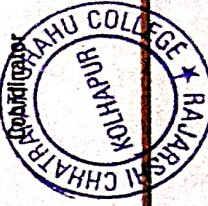
This is to certify that Prof./Shri/Smt. Baramatikar Jay Vijay of
Rajarshi Chhatrapati Shahu College, Kolhapur has attended and participated / Delivered a Lecture as Resource Person / Successfully
completed Certificate Course in **Computation of Statistics using R- Software** organized by Department of Statistics Rajarshi
Chhatrapati Shahu College, Kolhapur from 14/10/2024 to 25/10/2024


Mr. P. S. Chougule
Coordinator & Head,
Dept. of Statistics


Dr. M. K. Kannade
In charge
Short term Courses


Dr. U. S. Shelke
IQAC


Prof. Dr. D. R. Bhosale
I/C Principal,
R. C. Shahu College, Kolhapur.



**Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department Of Statistics**

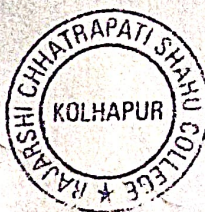
**Certificate Course on Computation of Statistics by using R-
Software
2024-25**

Enrollment List of Students

Roll No.	Name of Student	Fee
1	Atpadkar Devdatta Dadaso	500
2	Baramatkar Jay Vijay	500
3	Gaikwad Pallavi Prabhakar	500
4	Hajare Sagar Ganpati	500
5	Jadhav Asmita Netaji	500
6	Kamble Adarsh Ashok	500
7	Kamble Sanjana Sukumar	500
8	Kandalkar Samiksha Gajanan	500
9	Khilari Prashant Dondiram	500
10	Khutale Arati Dnyandev	500
11	Kokare Sujal Yogesh	500
12	Kulkarni Shailesh Shamarao	500
13	Sanika Bapu Magdum	500
14	Patil Vaishnavi Laxman	500
15	Shaikh Masira Maudud	500
16	Shelake Payal Nagesh	500
17	Ulaswar Prachi Sudhir	500
Total		8500

Head

Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur



J/C PRINCIPAL
R.C. SHAHU COLLEGE
KOLHAPUR

**RAYAT SHIKSHAN SANSTHA'S
RAJARSHI CHHTRPATI SHAHU COLLEGE, KOLHAPUR
DEPARTMENT OF STATISTICS.**

**Organized
Computation of Statistics Using R-Software**

Name : _____

Roll No: _____

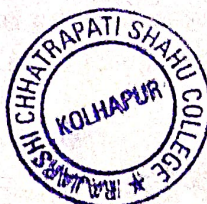
Day & Date : Monday, 23/09/2024

Total Marks : 50

Time : 11.00 : 12.00
[25*2=50]

Q-1) Choose the correct alternative from given options.

- 1) R was created by?
a) Ross Ihaka b) Robert Gentleman c) Both a & b d) Ross Gentleman
- 2) What is the simplest way of creating the vector ?
a) C function b) Create c) Destroy d) Invalid
- 3) What will be the output of the following R-code?
 $Y <- C(TRUE, 2)$
a) [1] "TRUE" "2" b) [1] "TRUE" 2 c) [1] "0" "2" d) [1] TRUE 2
- 4) Which of the following operator is used to create integer sequences?
a) : b) ; c) - d) ~
- 5) What will be the output of the following R Program ?
 $r <- 0:10$
 $r[2]$
a) 0 b) 1 c) 2 d) 3
- 6) What is NaN called ?
a) Not a Number b) Not a Numeric c) Number and Number d) Number
- 7) R runs on the ___ Operating System.
a) Linux b) Windows c) Ubuntu d) Any operating
- 8) How many Operators in R.
a) 5 b) 6 c) 4 d) 3
- 9) You can download "base" R system from ____
a) A b) B c) CRAN d) D
- 10) Point out the wrong Statement ?
a) Key feature of R was that its syntax is very similar to S
b) R runs only on windows computing platform and operating system
c) R has been reported to be running on modern tablets, phones, PDCA, and consoles
d) R functionality is divided into a number of packages.



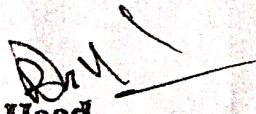
**RAYAT SHIKSHAN SANSTHA'S
RAJARSHI CHHTRPATI SHAHU COLLEGE, KOLHAPUR
DEPARTMENT OF STATISTICS**

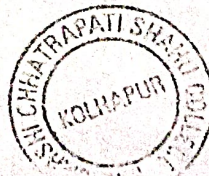
**Organized
Computation of Statistics Using R- Software
(Self - Funded Under COC)**

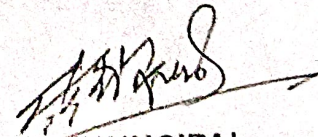
Result of Students

Total Marks-50

Sr.No	Name Of Student	Marks
1	ATPADKAR DEVDATTA DADASO	50
2	BARAMATIKAR JAY VIJAY	42
3	GAIKWAD PALLAVI PRABHAKAR	32
4	HAJARE SAGAR GANPATI	46
5	JADHAV ASMITA NETAJI	32
6	KAMBLE ADARSH ASHOK	36
7	KAMBLE SANJANA SUKUMAR	26
8	KANDALKAR SAMIKSHA GAJANAN	38
9	KHILARI PRASHANT DONDIRAM	50
10	KHUTALE ARATI DNYANDEV	36
11	KOKARE SUJAL YOGESH	42
12	KULKARNI SHAILESH SHAMARAO	44
13	SANIKA MAGDUM	26
14	PATIL VAISHNAVI LAXMAN	42
15	SHAIKH MASIRA MAUDUD	22
16	SHELAKE PAYAL NAGESH	40
17	ULASWAR PRACHI SUDHIR	26


Head
Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur




H.C. PRINCIPAL
R.C. SHAHU COLLEGE
KOLHAPUR

**RAYAT SHIKSHAN SANSTHA'S
RAJARSHI CHHATRAPATI SHAHU COLLEGE, KOLHAPUR
DEPARTMENT OF STATISTICS
"Computation of Statistics using R Software"
B. Sc. III**

ROLL NO.	NAME OF STUDENT	DATE										
		14/10/24	15/10/24	16/10/24	17/10/24	18/10/24	19/10/24	20/10/24	21/10/24	22/10/24	23/10/24	24/10/24
1	ATPADKAR DEVDATTA DADASO	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR	ATPADKAR
2	BARAMATIKAR JAY VIJAY	JVB	JVB	JVB	JVB	JVB	JVB	JVB	JVB	JVB	JVB	JVB
3	GAIKWAD PALLAVI PRABHAKAR	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi	Pallavi
4	HAJARE SAGAR GANAPATI	SH	SH	SH	SH	SH	SH	SH	SH	SH	SH	SH
5	KAMBLE ADARSH ASHOK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK
6	KAMBLE SANJANA SUKUMAR	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl	Kambl
7	KANDALKAR SAMIKSHA GAJANAN	SK	SK	SK	SK	SK	SK	SK	SK	SK	SK	SK
8	KHILARI PRASHANT DONDIRAM	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay	Phulay
9	KHUTALE ARATI DNYANDEV	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale	Khutale
10	KOKARE SUJAL YOGESH	SK	SK	SK	SK	SK	SK	SK	SK	SK	SK	SK
11	KULKARNI SHAIKESH SHAMARAO	Kul	Kul	Kul	Kul	Kul	Kul	Kul	Kul	Kul	Kul	Kul
12	PATIL VAISHNAVI LAXMAN	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
13	SHAIKH MASIRA MAUDUD	Masira	Masira	Masira	Masira	Masira	Masira	Masira	Masira	Masira	Masira	Masira
14	SHELAKE PAYAL NAGESH	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake	Shelake
15	ULASWAR PRACHI SUDHIR	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
16	JADHAV ASMITA NETAJI	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
17	MAGDUM SANIKA BAPU	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum	Magdum


Head
Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur




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KOLHAPUR

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RAJARSHI CHHTRPATI SHAHU COLLEGE, KOLHAPUR
DEPARTMENT OF STATISTICS**

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Computation of Statistics Using R- Software
(Self - Funded Under COC)

Time Table 2024-25

	Venue	Date		14/10/24	15/10/24	16/10/24	17/10/24	18/10/24	19/10/24	21/10/24	22/10/24
		Time									
Theory & Practical	Lab 1 (Stat.Lab)	9:00-11:00 & 1:00-2:00		SPJ	SPJ	GAG	SPJ	GAG	SPJ	SPJ	GAG

	Venue	Date		23/10/24	24/10/24	25/10/24
		Time				
Theory & Practical	Lab 1 (Stat.Lab)	9:00-11:00 & 1:00-2:00		SPJ	GAG	SPJ

Sr. No.	Name of Lecturer		
	1	SPJ	Miss. Jadhav S.P
	2	GAG	Miss. Gadhari G.A



[Signature]
Head

Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur

[Signature]
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Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

Department of Statistics

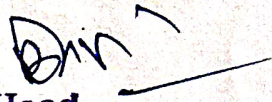
Organized

"Computation of Statistics Using R Software"

STUDENT NOTICE

Date : 10/10/2024

All the students of Bsc.III are informed that the Certificate course "Computation of Statistics Using R Software" is being Started in our college by the department of statistics. All interested students should contact to course Co-ordinator Mr.P.S. Chougule.


Head

Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur

रयत शिक्षण संस्थचे
राजर्षी छत्रपती शाहू कॉलेज, कोल्हापूर
शॉर्ट टर्म/सीओसी कोर्सेस फी आणि त्याच्या खर्चाबाबतचा ठराव

प्रस्ताव : महाविद्यालयातील विद्यार्थिनींनी पारंपरिक शिक्षणाबरोबरच विविध कौशल्ये आत्मसात करून त्यांनी आत्मनिर्भर व्हावे यासाठी महाविद्यालयात एकूण 22 शॉर्ट टर्म कोर्स व ३ सी. ओ. सी. कोर्स राबविले जात आहेत. या शॉर्ट टर्म व सी. ओ. सी. कोर्सेस साठी महाविद्यालयातील विद्यार्थी प्रवेशित होत असतात. या कोर्स साठी रु. ५००/- एवढी फी प्रति विद्यार्थी आकारली जाते. सदर प्रत्येक कोर्समधून जमा होणाऱ्या फी पैकी GST व प्रमाणपत्र खर्च वजाकरता उर्वरित रकमेच्या ४०% रक्कम कोर्सच्या मानधनासाठी खर्च करावी व ६०% रक्कम महाविद्यालयाच्या विकासासाठी खर्च करण्यात यावी.

तांत्रिक माहिती: महाविद्यालयात कला, वाणिज्य, विज्ञान, बी.एस्सी.कॉम्प्युटर सायन्स, बी.एस्सी.कॉम्प्युटर सायन्स (इन्टायर) तसेच एम.ए. इंग्लीश, एम.कॉम.(आएटी), एम. एस्सी.केमिस्ट्री, एम. एस्सी. संख्याशास्त्र इ. विद्याशाखांमध्ये महाविद्यालयाचे शैक्षणिक कामकाज सुरू आहे. चालू वर्षात महाविद्यालयात एकूण १२३२ विद्यार्थिनींनी प्रवेश घेतला आहे. तसेच विद्यार्थ्यांना विद्यापीठाच्या अभ्यासक्रमाव्यतिरिक्त त्यांच्या विषयाच्या अनुषंगाने तसेच इतर कौशल्य विकसित व्हावित यासाठी गेली अनेक वर्षे महाविद्यालयातील विद्यार्थिनींना खालील शॉर्ट टर्म व सी. ओ. सी. कोर्सेसची संधी उपलब्ध करून देण्यात आली आहे. यामध्ये

Sr.No	Course Name	Fee
1	Biodiversity Conservation	500/-
2	Understanding of Basic Electronics Devices	500/-
3	Secretarial Training	500/-
4	Preparation of Household Chemical	500/-
5	Mudritshoduan koushalya (मुद्रितशोधन)	500/-
6	Application of MS.Excel in Statistics	500/-
7	Advanced Excel	500/-
8	Computation of statistics using R-Software	500/-
9	Exploratory Data Analysis Using MS- Excel	500/-
10	Computation of Statistics using open source software	500/-
11	Entrepreneurs Development	500/-
12	Retail Marketing	500/-
13	Yoga & meditation	500/-
14	Introducing Forts in Maharashtra	500/-
15	Event Management	500/-
16	Foundry Technology	500/-
17	Anuvad Siddhant Aur Prayog (अनुवाद सिद्धांत और प्रयोग),	500/-
18	Certificate course in Vermitechnology	500/-
19	Fashion Designing	500/-
20	Beauty Parlour	1,000/-
21	Flower Arrangement and Ikebana	500/-
22	A short term course in English communication skills of vidya probodhini	500/-

यासारखे कोर्सेस उपलब्ध करून दिले जातात. सदर शॉर्ट टर्म व सी. ओ. सी. कोर्सेस पूर्ण करून महाविद्यालयातील अनेक विद्यार्थ्यांनी स्वतःचे व्यवसाय सुरू करून ते स्वावलंबी होऊ शकतात.

आर्थिक तरतूद : महाविद्यालयामध्ये प्रवेश घेतलेल्या विद्यार्थ्यांपैकी जे विद्यार्थी सदर कोर्सेस साठीही प्रवेश घेतात त्या विद्यार्थ्यांकडून प्रति विद्यार्थी प्रति कोर्स साठी रुपये ५००/- या प्रमाणे फी आकारली जाते सदर प्रत्येक कोर्समधून जमा होणाऱ्या फी पैकी GST व प्रमाणपत्र खर्च वजाकरता उर्वरित रकमेच्या ४०% रक्कम कोर्सच्या मानधना साठी खर्च करावी व ६०% रक्कम महाविद्यालयाच्या विकासासाठी खर्च करण्यास यावी.

कार्यालयाचे मत: महाविद्यालयामध्ये सुरू असलेले शॉर्ट टर्म व सी. ओ. सी. कोर्सेस हे विद्यार्थिनींच्याबरोबरच महाविद्यालयाच्या विकासासाठी उपयुक्त आहेत. या माध्यमातून अनेक विद्यार्थ्यांना आपले स्वतंत्र व्यवसाय सुरू केले आहेत. त्यामुळे सदर शॉर्ट टर्म कोर्सेसमधून विद्यार्थिनींच्या कौशल्याबरोबरच महाविद्यालयास चांगल्या प्रकारचे उत्पन्न प्राप्त होत असते. सदर उत्पन्नातून प्रत्यक्ष खर्च करण्यात येणाऱ्या ४०% रकमेचे खर्चाची विवरण खालील प्रमाणे करण्यात यावा

1. जमा होणाऱ्या फी पैकी GST व प्रमाणपत्र खर्च वजाकरता उर्वरित रकमेच्या ४०% रक्कम, व कोर्स अध्यापन, मानधन, स्टेशनरी, पुस्तके व अनुषंगिक इतर सर्व खर्च
2. जमा होणाऱ्या फी पैकी GST व प्रमाणपत्र खर्च वजाकरता उर्वरित रकमेच्या ४०% रक्कम वजा करता उर्वरित ६०% रक्कम महाविद्यालयात जमा करावी.

ठराव: महाविद्यालयाच्या सर्व विभागप्रमुखांची मिटींग मा. प्राचार्य उपस्थितीत दिनांक १३/०७/२०२४ रोजी पार पडली. सदर मिटींगमध्ये चर्चा करून सर्वानुमते महाविद्यालयामध्ये सुरू असलेले शॉर्ट टर्म व सी. ओ. सी. कोर्सेस हे विद्यार्थिनींच्याबरोबरच महाविद्यालयाच्या विकासासाठी उपयुक्त आहेत. त्यामुळे सदर शॉर्ट टर्म कोर्सेसमधून विद्यार्थिनींच्या कौशल्याबरोबरच महाविद्यालयास चांगल्या प्रकारचे उत्पन्न प्राप्त होत असते. त्यामुळे सदर कोर्सेस चालू करावेत व प्रति कोर्सेसकरिता रुपये ५०० फी घ्यावी व त्या जमा होणाऱ्या एकूण फी च्या मधून GST व प्रमाणपत्र खर्च वजाकरता उर्वरित रकमेच्या ४०% रक्कम ही कोर्स अध्यापन, मानधन, स्टेशनरी, पुस्तके व अनुषंगिक इतर बाबीवर खर्च करावी व उर्वरित उर्वरित ६०% रक्कम महाविद्यालयात जमा करावी. असे सर्वानुमते ठरले. सदर मिटींग करिता खालील विभाग प्रमुख उपस्थितीत होते करण्यास महाविद्यालय विकास समितीची मान्यता देण्यात येत आहे.

सूचक: डॉ. लवेकर एस. एस.

अनुमोदक: डॉ. पाटील आर. सी.

ठराव सर्वानुमते मंजूर

सदर मिटींग करिता खालील विभाग प्रमुख उपस्थितीत होते

- 1) डॉ. पुंणताबेकर बी. एस. - B.S.P.
- 2) डॉ. कन्नाडे एम. के. - Kanna
- 3) डॉ. कदम एम. डी. - Kadam
- 4) डॉ. खोले एस. सी. - Khole
- 5) डॉ. लवंगरे जी. एम. - Lavangre
- 6) डॉ. फरास एस. ए. - Faras
- 7) डॉ. लवेकर एस. एस. - Lavekar
- 8) डॉ. पाटील आर. सी. - Patil
- 9) डॉ. पाटील ए. आर. - Patil
- 10) डॉ. पीस्ते पी. बी. - Piste
- 11) डॉ. शेख एस. डी. - Sheikh
- 12) श्री. शेडगे एस. डी. - Shedge
- 13) श्री. चौगुले पी. एस. - Chougale
- 14) श्रीमती शेख झेड. जे. - Sheikh
- 15) श्रीमती मालवेकर डी. ए. - Malvekar



राजर्षी छत्रपती शाहू कॉलेज, कोल्हापूर

प्राचार्य,
राजर्षी छ. शाहू कॉलेज,
कोल्हापूर.

"Education through self-help is our motto"-Karmveer
Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Statistics
Information regarding Skill Development Courses/Career Oriented Courses

Name of the Department: Department of Statistics

Course name: Computation of Statistics Using R-Software

Course Coordinator name & Contact number: Mr. P. S. Chougule (9822680411, 7083633933)

Implementation Year: 2017

Duration: 11 days

Course Fee: Rs. 500/-

Eligibility: It's suitable for undergraduates, graduates and researchers from any field that uses statistical computing.

Minimum intake Capacity: 20

Objectives of the Course:

This course aims to provide a practical introduction to the R programming language.

- In this course you will learn how to program in R and how to use R for effective data analysis.
- This course covers practical issues in statistical computing which includes programming in R, reading data into R, accessing R packages, writing R functions,
- R code for in statistical data analysis will provide working examples and running summary statistics and visualizations and simulations form various distributions

Learning Outcomes: By the end of the course students you shall be confident and equipped with all the knowledge required to perform analytical activities in R. Specifically,

- A new way of thinking
- Download and Install R
- A new language for speaking and reading (vectors, data frames, functions, objects, etc.

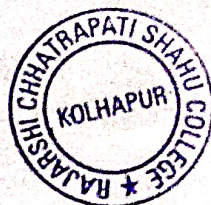
- A new syntax for writing, e.g. `c()`, `print()`, `cat()`, `sort()`, `require()`, `subset()` for data analysis and presentation .
- Understand the concepts of objects and assignment
- Construct tables and figures
- Load a script file, run lines from it, edit and save the script file.
- Load a Workspace containing an R dataframe, edit the dataset, and save the Workspace.
- Variable types in R
- Understand the different data types in R
- Understand the different data structures in R
- Understanding Assignment operations
- create loops to solve different types of problems
- Use R for descriptive statistics
- Simulation, code profiling
- Perform appropriate statistical tests using R
- Expand R by installing R packages
- Create their own customized function
- Online R Learning resources

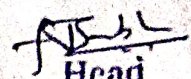
Syllabus:

1. Fundamentals of R:

- 1.1 Introduction to R, features of R, Installation of R, starting and ending R session getting help in R, R commands and case sensitivity.
- 1.2 Data types: Logical, numeric and complex
- 1.3 Vectors and vector arithmetic a) Creation of vectors using function `C`, `assign`, `seq`, `rep`
b) Arithmetic operation on vectors using operators `+`, `-`, `*`, `/`, `^` c) Numerical functions: `log10`, `log`, `sort`, `max`, `min`, `unique`, `range`, `length`, `var`, `prod`, `sum`, `summary`, `five` etc.
d) Accessing vectors. e) Alternative ways to create vector by `scan` function.
- 1.4 Data frame: creation using data frame, `subset` and transform commands
- 1.5 Resident data sets: Accession and summary
- 1.6 Graphics using R: a) High level plotting functions b) Low level plotting functions
c) Interactive graphic functions

- 1.7 Using R as calculator The following Statistical Methods using "R"
2. Sampling Methods: Drawing sample from a population using SRSWR, SRSWOR, Stratified random sampling, Systematic sampling.
 3. Diagrams: Simple bar diagram, subdivided bar diagram, multiple bar diagram, Pie diagram, steam and leaf chart.
 4. Graphs: Box plot, rod or spike plot, histogram (both equal and unequal class intervals), frequency polygon, ogive curves, empirical distribution function.
 5. Measures of central Tendency: Computation of following measures for all types of data. Mean, mode, median, quartiles, Deciles, Percentiles, Geometric mean, Harmonic mean.
 6. Measures of dispersion: computation of following measures for all types of data. Range, Quartile Deviation, Variance, Standard Deviation, Coefficient of Variation, Mean Deviation, Mean Squared Deviation.
 7. Measures of Skewness and Kurtosis: Bowleys coefficient and Karl Pearson's coefficient of Skewness.
 8. Moments: Computation of Raw and central moments, measures of Skewness and kurtosis
 9. Probability Distribution: Simulation of random experiment, Hyper geometric distribution, computation of probabilities, model sampling, Fitting of Binomial, Poisson, Normal and Lognormal distribution: computational of probabilities, model sampling from log-normal, Weibull, Logistic distribution
 10. Correlation and Regression: Fitting of lines of regression, computation of correlation coefficient, fitting of second curve.
 11. Multiple Regression: Fitting of regression plane for trivariate data
 12. Testing of Hypothesis: Large sample test for mean and proportions, t-test, variance test, Chi-square test, Computation of probabilities of type I and type II errors and power of the test
 13. Analysis of Variance: One way, two way, Analysis of completely randomized Design (CRD), Analysis of randomized block design (RBD)
 14. Data Mining: k-nearest neighbor techniques for classification, k-means techniques for clustering.
 15. Statistical Quality Control: CUSUM chart, Exponentially weighted moving average charts (EWMA-chart)




Head
Department of Statistics
Rajarshi Chh. Shahu College, Kolhapur