

# Janata Shikshan Sanstha's KISAN VEER MAHAVIDYALAYA, WAI



### **Certificate Course Report**

# **Supportive Documents for Certificate Course Annual Report**

#### Certificate Course Annual Report includes-

- 1. Short Report of the Particular Academic Year
- 2. Notice regarding the Introduction date of the course
- 3. Syllabus of the Course
- 4. Course Objectives and Outcomes
- 5. List of enrolled students.
- 6. Result
- 7. One Sample Certificate

Janta Shikshan Sanstha's



# Kisan Veer Mahavidyalay, Wai

Department of Statistics





**Duration: 40 Clock Hours** 

Classes offered: B.Sc. III (STATISTICS)

#### **Course Description:**

In this course you will learn how to program in R and how to use R for effective data analysis. You will learn how to install and configure software necessary for a statistical analysis. The course covers practical issues in statistical computing which includes programming in R, reading data into R, accessing R packages, writing R functions.

#### **Course Objectives:**

- ★ To introduce statistical Technology to the students.
- ★ To get the knowledge for analysis of statistical data by using R software.
- ★ To get job opportunities in industrial sector.
- To develop a skill for statistical consultancy

#### **Course Content:**

- ★ Introduction to R
- ★ Methods of Data Input
- ★ Diagrammatic presentation
- ★ Preparation of frequency table and graphical representation
- ★ Measures of central tendency and dispersion
- ★ Measures of Moments ,Skewness and kurtosis
- ★ Probability and Probability Distribution
- \* Statistical Inference

#### Course Outcome:

- 1. To learn installation and configuration of R
- 2. To access and read data
- 3. To access packages in R
- 4. To write programs in R

#### **Examination System:**

Exam is conducted along with Shivaji University practical exam.

The exam is conducted in a practical manner.

Course Co-ordinator
Mr. R. H. Waliv
Dept. of Statistics



# Janata Shikshan Sanstha's Kisan Veer Mahavidyalaya, Wai Department of Statistics



# "Certificate course in Application of R- Software" Course Report 2023-24



Janata Shikshan Sanstha's KISAN VEER MAHAVIDYALAYA, WAI

Department of Statistics



# "Certificate course in Applications of R-Software" Course Report 2023-24

The Department of Statistics conducted a certificate course for B.Sc. III entitled "Certificate course in Applications of R – Software". The course was conducted during 01/09/2023 to 16/03/2024. The time table was displayed on the notice board of the department.

In all 14 students were admitted for the course. Examination of the said course was conducted along with practical exam of B.Sc. III. Students gained knowledge about using R-software for statistical computation. The supportive staff and the administration of the College and especially the Principal supported a lot in conducting the course.

Course Coordinator

Department of Statistics

CS STANDARD

Kisan Veer Mahavidyalaya, Wai

# 2. Notice regarding the BOS and Introduction date of the Course

# Janata Shikshan Sanstha's KISAN VEER MAHAVIDYALAYA, WAI Department of Statistics Notice

The Meeting of the Board of Studies of Statistics will be held on Thursday 15<sup>th</sup> May 2023 at 11.45 am in the Department of Statistics. The meeting will be chaired by Mr. B. B. Patkure, Head, Department of Statistics. Kisan Veer Mahavidyalaya, Wai All the Members are advised to attend the meeting.

Sr. No.	Name	Designation	Position	Signature
1.	Prof. B.B. Patkure	Head  Department of Statistics  Kisan Veer Mahavidyalaya, Wai	Chairperson	TEN
2.	Dr. R.H. Waliv	Assistant Professor  Department of Statistics  Kisan Veer Mahavidyalaya, Wai	Member	Pus
3.	Mr. Shrikrushna Nevase	Data Science Maneger ,  Merck Shark & Dohme  (MSD),Pune	Member	Newaes
4.	Mr. Rohan Jadhav	Senior Credit Analyst, Crisil, Pune	Member	Madhav

Agenda:

1. To recommend to the College Development Committee through the Principal the introduction of new Certificate Course/s

2. To recommend to the College Development Committee through the Principal the discontinuation of earlier Certificate Course

3. To recommend to the Principal the course syllabi, course structure & evaluation scheme of new Certificate Course/s

 To recommend the reference books and other study material to be used for the study of the Course/s

Head

Department of Statistics

5. Any other subject with the Permission of the Chair

Copy: 1. For signatures of all Members

2. Mr. B. B. Patkure

Date: 12th May 2023

Department of Statistics Kisan Veer Mahavidyalaya, Wai

Date: 18/08/2023

All the students in B.Sc.III are hereby informed that the lectures of the "Certificate course in Application of R-Software" will be start from September 1, 2023. This course is compulsory for B.Sc.III Statistics students. If any student remains absent then he will be responsible for his losses.

Head,

#### 3. Syllabus Of the Course

# Janata Shikshan Sanstha's KISAN VEER MAHAVIDYALAYA, WAI Department of Statistics

Syllabus for "Certificate Course in Application of R Software"

#### 1. Introduction to R

- I. Introduction
- II. R as a Statistical Software and language
- III. Dats types & Arithmetic opertors
- IV. R preliminaries

#### 2. Methods of Data Input

- I. C-function
- II. Seq-function
- III. Rep-function
- IV. Data frame function
- V. Matrix function
- VI. Programming: Algorithm, flow chart, Structure of programme.

#### 3. Diagrammatic presentation

Standard plot functions, arguments to plot function, low level plotting functions, Bar diagram, Sub divided bar diagram, multiple bar diagram, pie – diagram, box plot.

#### 4. Preparation of frequency table & graphical representation

Construction of frequency distribution table (for discrete & grouped data). Graphical representation – Histogram, Frequency polygon, Ogive curves.

#### 5. Measures of central tendency & dispersion

Arithmetic Mean, Geometric mean, Harmonic mean, Median, Quartiles, Deciles, Percentiles, Mode, Interquartile range, Mean deviation about mean, Variance, Standard Deviation, Coefficient of variation.

#### 6. Measures of Moments, Skewness & Kurtosis

Raw and central moments, Measures of skewness, Measures of kurtosis.

#### 7. Probability & Probability Distribution

Application of Binomial Distribution, Fitting of Binomial Distribution, Application of hypergeometric distribution, Fitting of hypergeometric distribution, Poisson distribution, Normal distribution, Exponential distribution.

#### 8. Statistical Inference

- I. Sampling distribution of sample mean
- II. Estimation of Parameters
- III. Plots to check normality
- IV. Hypothesis testing, chi-square test, t test, f-test
- V. Goodness of fit tests
- VI. ANOVA one way, two way
- VII. Simulation techniques.

#### Reference Books:

- 1. Statistics using R: Sudha Purohit, Sharad Gore, Shailaja Deshmukh.
- 2. Statistics using R: Prof. Pawgi V.R.

Duration of the Course - Four Month (40 clock hours)

Laboratory Requirements:

Laboratory should be well equipped computers along with R software, UPS, and printers.

Head Department of Statistics Kisan Veer Mahavidyalaya, Wai

# **Pratical Programs:**

- 1. Data input/output using R
- 2. Diagrammatic representation of data
- 3. Graphical representation of data
- 4. Measures of Central Tendency
- 5. Measures of Dispersion
- 6. Simulation I (Bernoulli, Binomial, Poisson and Geometric distribution)
- 7. Simulation II (Exponential, Normal distribution)

Head Department of Statistics Kisan Veer Mahavidyalaya, Wai

### 4. Objectives of the Course

# **Objectives** of the course

- 1) To introduce statistical Technology to the students.
- 2) To get the knowledge for analysis of statistical data by using R software.
- 3) To get job opportunities in industrial sector.
- 4) To develop a skill for statistical consultancy.

# 5. List of enrolled students

#### Janata Shikshan Sanstha's Kisan Veer Mahavidyalaya, Wai Department of Statistics

List of Students in Application of R Software Course (2023-24)

Sr. No.	Roll No.	Student's Name
1	121	PISAL JAGANNATH KUMAR
2	122	BHOSALE OM RAVINDRA
3	123	KHARE ATHARV NANDKUMAR
4	124	JAGTAP AVISHKAR JEEVAN
5	125	GAIKWAD RUTIKA VITTHAL
6	126	CHAVAN SAKSHI SUDHAKAR
7	127	SHINDE PRUTHVIRAJ PRAKASH
8	128	CHAUDHARI VINIT ASHOK
9	129	KARANJE SANKET SANJAY
10	130	THORAVE PRATIK SUDHIR
11	131	JAGTAP JIVAN ATMARAM
12	132	SUNEHA RAJPUT
13	136	JADHAV PRATHAMESH DASHRATH
14	137	SHINDE MAYUR VITTHAL

CTHA'S

# 6. Time Table

Janata Shikshan Sanstha's Kisan Veer Mahavidyalaya, Wai B.Sc. III (Statistics)

Year: 2023-24

## R SOFTWARE COURSE (Time Table)

Sr. No.	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	11.00 to 3.00	Batch-I	Batch-I	_			

SANSTHA SO

Head

### 7. Attendance Sheet

JANATA SHIKSHAN SANSTHA'S
KISAN VEER MAHAVIDYALAYA, WAI
Class: B.SC.III Statistics

2023-24

Roll No.	25/12/23	26/12/23	R Progra	2/1/24	8 1 24	9 1/24	15/1/24	16/1/24
121	Telisal	Paice	Prisal	Piscal	Pical	Toksel.	Phiat	Frison
122	300	3ue	300.	(Bica)	Bulle	(Zue)	Breez.	Bulg
123		1		1	-	- 4	-	18 12
124	1110	AM	+VAP	STAP	AM	AMP	111	13619
125	(Realway.	(Realtmag	Rhailmag	- (Rraituag	(R) rookway	(R) gripping	(Ricarlang.	Prairie
126	ONE)	orbish'	DJM'	alder	ochto.	COSALLA	Mats	SOF
127	Rhob	Apol	Report	Block	Bhol	Bhal	Chak	Shad
128	100	Di-	100	101	0	000	Soi	10
129	(Son)	Floor	Stopanto	Franks	Geruga	Sprens	Series ?	Romp
130	Meseve	Thesau	Fresare	Thoselle	5Thoraig	Thoreuse		atwars'
131	CANSTEP (	3 Assylup	8-A Jayler	SAFIT	PARTH	<b>EAS</b>	BASTY	PART
132	145	13	A	8	3	4	25	13
136	Ridlay.	Rodlan	Bedton.	Bedfor	Brother	Prodhav	-Badher	Pindhav

#### JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI Class: B.SC.III Statistics

2023-24 R Programming Attendance

			it i logia	HILLIAN STATE	tendance			
Roll No.	22/1/24	23/1/24	29/1/24	3011124	5/2/24	€ 2/24	12/2/24	13/2/24
121	Phoel	Prisal	Priso	(PRof	Fred	Prised	6 Ticel	Bral.
122	300.	300	Brown.	Caso.	Caro.	Bus.	3:0	Dec .
123			1	_0	2	· Li	X	
124	Jup-	AMP	AND	MAD	AM	AID	AM	AND
125	Realmong	(R) salturage	Rocitude	R)soiknap	Ranhard	(Rtailmg	Rhaikung	(printreof
126	JASC ,	a replace	alath	aldel	Detel	White !	orstell.	Watch.
127	Blook	And	Blood	Pend	about	8mb	Bhol	Bland
128	0	167	1000	00	10-	O'co	0	0
129	Storage	Ame	Prony	Front	&-senge	Ronge	From	Sept 13
130	Siscorte	Thosale.	- Altorus	THOTAIR.			Thomas.	Morain
131	SA Sunt of	(CALANA)	8ASHIP	(SASSIF)	CE THAT P	SASSIF	8 ALD	SA Jan
132	鄉	#	(2)	62	500	48	23	A
136	adh	Budha	Bridhay	Badhar	Bullias	Robay	Pladhou	Bidley

#### JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI Class: B.SC.III Statistics

2023-24

			R Progra	ımming A	ttendance	e		
Roll No.	10 10 09	16 10 23	17 10 23		7/11/23		3 20 11 25	3 21/1/12
121	Bical	allical	Big.	Buch	(Hisa)	Codinal	Him	Pin
122	Causo.	Zw.	3110.	Book.	( 3cm).	(Bur)	(Bug)	Sur
123	24-	1	si.	1	-0	1	0	16
124	July	AUD	Jup	JAJ-	1000	AMIP	My	AKI
125	Regitung.	Roukung	Ray und	Prairway	(1) saikura	Regulung	Position	Phote kuca
126	Stall	and	andly	211	25/199	Streth.	OHM.	Dath.
127	Blak	Block	Block	Bloke	Pelode	Report.	Elmore	Pergle
128	600	ari-	Sin	Did.	10-	0:	Si.	li
129	Joseph Line	Smonja	Frent .	Gorn's	Spring	America.	- Fargy	Francis !
130	Thesave.	Thesave.	Allocave.	Theodve.		-Illowice,	- Tresave	Horard
131	SAY FARY	(SETH)	BASHY	CM214	343	Constant	anzate	GATT
132	AT .	75	1	(S)	.5	26	(5)	
136	Bellev	Bullou	Adha	Bodlov	Pedrav	Bodlow	Adher	Bedler

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI Class: B.SC.III Statistics

2023-24

			R Progra	amming A	ttendance	2	2	
Roll No.	2-1/11/28	28/11/23	4/14/23	112/23	11 1223	12/12/23	18/12/23	19/12/2
121	Frisal	Prod	Falice	(This at	Pin	Fish	Frank	Plical
122	Sin).	(300).	(300)	340:	Bap.	Begg.	Bug.	340
123	11	10	1	+ 1	1	1	M	16
124	ANAD	alth	160	AND	ALLAP.	Ano	APP	mo
125	(Prairway	Pleasing-	Realty	Ricas	Ryalinag.	Ryan kucat	(Kigaikway	Kreytung
126	abole	Ship	alay	Thath	aldh	DAY!	Watch	alegy.
127	Below	Rehale:	Bhos.	Block	Block	Rhot	Pelode	Rhol
128	6	ari-	and	10:	Die	0	an	100
129	Smonjy	Poson +	Daco	Species	Poscajo	Poseniy	(Bronge	Spronis
130	Thosake-	-	Theale	Hoselle.	Whoselfe.	The re-	Thosale.	# COUNTY
	FASCHLOP	GALLER	8 A loggod	<b>EASTER</b>	BA. A YAY	CATHE	STEETS	CAFest
132	1	43	10	25.	35	520	28	7
136	Aslau	Redtou	Andhou	Bellev	Ballar	- Bodtav	Rohev	Rodlar
-								

### JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

Class: B.SC.III Statistics 2023-24

n II No	1.101.00		R Progra	mming At	tendance			
Roll No.	41123	59128	11/9/28	12/9/23			2)12)22	a) 10 10 0
121	Elisa	Pical	Flical	- Pisal	Pical		0 10 23	9/10/23
122	CBIL).	(340).	(ans)	310		Picale	Disal.	Strong.
123	80	X6_	l	11	30	(3/6)	(3,4)	(3y).
124	AUA	AND	LAND	1 1 11	11-1201	0.11	18	
125	Phaymag	(R) car land	Reamond.	Recurrency.	(R) railruad	(R) castund	MANO	Am
126	Styles.	Water	Who	-1101	4-1	1	Rraikway.	(R)raitural
127	Rivola	Rhose	Bhak	CON O	OTHE	Stattle "	Wattle !	AMY.
128	2001	602	1000	Rhali	Rhod	Rehal	Bhol	Bhok
129	Saronj &	Sarenja	Sarmi 9	Admi C	Amori i	100	10m	<u>ai</u>
130	Thoxale.	Thosave		Spanni ?	Segenj -	Sigrari 1	Parmile	Amran M
131		PASSA		SAJ	Those 14	3A3-41-4		PASSAIR.
132	40	43	To some	1	GA .	-M	SA 15 TO	S'A 1-714
136	Bullian	Balay	Reaboy	Bodhau		Budhary	Adhau	
150	(January)		15-07-07	Madhau	Bethan	. Ded Adv	E Chao	Bedlov
								5-

### 8. Result

# Janata Shikshan Sanstha's Kisan Veer Mahavidyalaya, Wai

### **Department of Statistics**

Mark sheet of Students in Application of R Software Course (2023-24)

Sr. No.	Roll No.	Student's Name	Marks
1	121	PISAL JAGANNATH KUMAR	7
2	122	BHOSALE OM RAVINDRA	7
3	123	KHARE ATHARV NANDKUMAR	10
4	124	JAGTAP AVISHKAR JEEVAN	7
5	125	GAIKWAD RUTIKA VITTHAL	9
6	126	CHAVAN SAKSHI SUDHAKAR	9
7	127	SHINDE PRUTHVIRAJ PRAKASH	9
8	128	CHAUDHARI VINIT ASHOK	10
9	129	KARANJE SANKET SANJAY	8
10	130	THORAVE PRATIK SUDHIR	8
11	131	JAGTAP JIVAN ATMARAM	10
12	132	SUNEHA RAJPUT	8
13	136	JADHAV PRATHAMESH DASHRATH	9
14	137	SHINDE MAYUR VITTHAL	9

STHA'S WANTER WANTER TO THE STATE OF THE STA

Head

# 9. One Sample Certificate



### JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI. DIST- SATARA



#### **DEPARTMENT OF STATISTICS**



This	is	to	cer	tify	that	Mr/Miss		Suneha	f	Rajput	•••			
has	compl	eted	the	Certi	ficate	Course in	"	APPLICATION	0F	R-SOFTWARE	"	conducted	by	the
Department of Statistics Kisan Veer Mahavidyalaya, Wai, Dist–Satara during the academic year 2023- 2024														

Coordinator

Head Dept of Statistics Principal