# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

**(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)**

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.
Website: www.rjcollege.edu.in          Email: rjcollege@rjcollege.edu.in          Tel No: +91 22 25151763          Fax No: +91 22 25150957

*College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956*

**Affiliated to UNIVERSITY OF MUMBAI   II   NAAC Re-Accredited 'A' Grade  (CGPA: 3.50)**

## NOTICE VALUE ADDED COURSE IN DATA ANALYTICS USING R SOFTWARE

**Hindi Vidya Prachar Samiti's**

## R. J. College of Arts, Science and Commerce
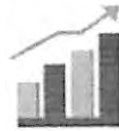(RAMNIRANJAN JHUNJHUNWALA COLLEGE OF ARTS, SCIENCE AND COMMERCE)

### (AUTONOMOUS)

### DEPARTMENT OF STATISTICS

organises

Value added course in

### 'Data Analytics Using R Software'

📅 19-22 May, 2021     🕐 02 PM to 04 PM     👤 zoom platform

I/c PRINCIPAL
RAMNIRANJAN JHUNJHUNWALA COLLEGE
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)
Ghatkopar (W), Mumbai-400086, Maharashtra, INDIA

**2019: Star College Status by DBT**
2008: Best College by University of Mumbai     2010: IMC RBNQ Award 'Performance Excellence' for the year 2009
2011: 'Best Teacher Award' by Government of Maharashtra   2013: DST-FIST   2014: DBT STAR College
2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra   2016: ISO 14001:2015  2016: ISO 9001:2015  2017: ISO 27001:2013
2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018)  & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)

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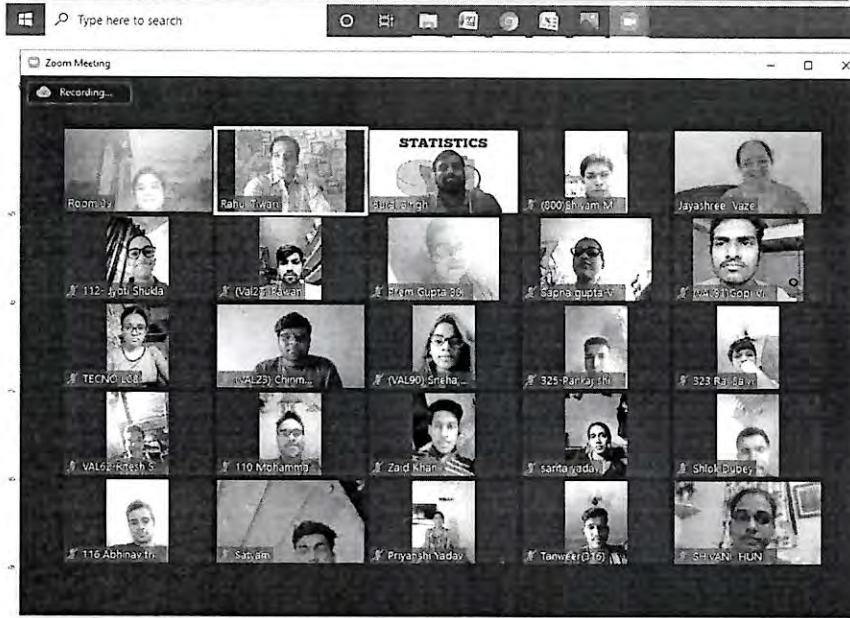
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## Photos ( Value added Course Data Analytics using R Software)





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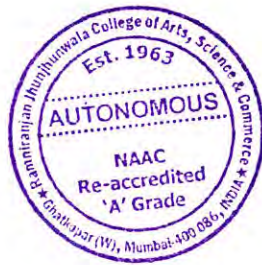
## REPORT OF THE VALUE ADDED COURSE : DATA ANALYTICS USING R SOFTWARE

A Value added course in **'Data Analytics using R Software'**  was organized by the Department of Statistics  from 19th to 22nd May, 2021. Mr. Suraj Singh, Mr. Jaishankar Singh and Mr. Rahul Tiwari were invited as resource persons for this course. The duration of this course was 30 hours. Quizzes and Assignments were given to students for evaluation. They explained very well how to write codes of R software related to various problems in Statistics. In all 61 participants of  FYBSC, SYBSC and TYBSC (Mathematics)  benefited from this course.

No. of participants registered =108
No. of participants who completed the course= 61
(FYBSC (Statistics), SYBSC(Statistics), TYBSC(Mathematics))

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**Hindi Vidya Prachar Samiti's**

**RAMNIRANJAN JHUNJHUNWALA COLLEGE (AUTONOMOUS)**

**(Also known as R. J. College of Arts, Science & Commerce as per UGC Notification)**

**Affiliated to UNIVERSITY OF MUMBAI II Recognized by UGC under 2f & 12B NAAC Accredited 'A GRADE' with CGPA 3.50**

## Knowledge is all Ambrosia

# CERTIFICATE COURSE IN

# DATA ANALYTICS USING R SOFTWARE

## ABOUT US

Hindi Vidya Prachar Samiti was incepted on the auspicious day of Shri Krishna Janmashtami, 15th August 1938. A brain child of a visionary Late Shri Nandkishore Singh Jairamji, samiti was established with the objectives of catering to the educational needs of the Hindi speaking community. Ramniranjan Jhunjhunwala College came into existence in 1963, enabling a larger section of the society to take advantage of the facilities provided for higher education.

From 1999-2000 the College has added a number of self-financing courses like B.M.S., B.B.I., B.Sc. in Computer Science, Information Technology, Biotechnology, M.Sc. in Computer Science, Biotechnology and Information Technology as well as add on courses, which further hone the special skills of the students.

The college has been reaccredited with 'A' Grade by NAAC in 2014 with a CGPA 3.50 and received the Best College Award (2007-2008) of the University of Mumbai. The College has been bestowed with IMC "Ramkrishna Bajaj Performance Excellence Trophy", 2010.

The Former Principal of the college was awarded "Best Teacher" by Government of Maharashtra in 2011.

Government of Maharashtra conferred the college with "JAAGAR JAANIVANCHA" (First in Mumbai Suburban- in 2013 and Second in Mumbai Suburban- in 2014) for safety of girls.

**Course Code:** RJSTATC01

**Duration:** 30 hours

**Credits :** 02

## ABOUT COURSE

- This Course will be introduced to enhance the students' skills of Using R software.

- From this course students will come to know how to analyse statistical data using R software and Excel.

## COURSE OBJECTIVE

| Unit | Objectives | Suggested Activities | Duration | Mode of Assessment |
|---|---|---|---|---|
| I | Understanding the R work-space and how to write R commands to solve statistical problems. | Lectures Assignment Library work | 2 Hours 3 Hours 2 Hours | Quiz (20 Minutes) |
| II | Writing codes to find different types of central tendency and dispersions in R software and Excel. | Lectures Assignment Library work | 2 Hours 3 Hours 2 Hours | Quiz (20 Minutes) |
| III | Visualize the data and analyze it using correlation and regression in R software | Lectures Assignment Library work | 2 Hours 3 Hours 2 Hours | Quiz (20 Minutes) |
| IV | Understanding how to write codes for different probability distributions in R. | Lectures Assignment Library work | 2 Hours 3 Hours 2 Hours | Quiz (20 Minutes) |

# COURSE CONTENT

**Unit I**

R Fundamentals: Introduction to the interface (R/ R Studio): Basic Functionalities: Type of vectors, Data Exploration using R, Reading Data into R, Subsetting, Matrices & Data Frames. Diagrammatic Representation - Bar Diagrams – Subdivided, Multiple, Percentage, Pie Charts, Stem & Leaf, Box-plot. Frequency distributions- preparation of freq. distribution table, graphical representation, histogram (grouped ungrouped), polygon, ogives, empirical distribution.

**Unit II**

Using R software :-
Measures of central tendency and dispersion – Mean(Arithmetic Mean, Geometric Mean, Harmonic Mean), Median, Mode, Quantiles (for grouped and ungrouped data), Mean deviation, Quartile deviation, Standard deviation, Skewness, Kurtosis.
Simple Random Sampling (WR and WOR), Estimation of sample size, Stratified and Systematic Sampling.

**Unit III**

Using R software :-
Scatter Diagram, Product Moment correlation and its properties.
Spearman's Rank Correlation'
Concept of linear regression. Fitting a straight line by method of least square.
Relation between regression coefficients and correlation coefficient.
Concept and use of coefficient of determination $R^2$.

**Unit IV**

Using R software :-
Some standard discrete distributions:
Discrete Uniform, Binomial , Poisson and Hypergeometric distribution.
Recurrence relation for probabilities of Binomial and Poisson distribution.
Some standard continuous distribution:
Uniform, Exponential, memory less property of exponential distribution.
Normal and Standard Normal distribution. Properties of Normal and SNV.

**EVALUATION**

| Evaluation Criteria | Maximum Marks | Minimum Marks to be Scored |
|---|---|---|
| Quiz | 10 | 04 |
| Assignment | 20 | 08 |
| Examination - Problem Solving | 20 | 08 |
| Total | 50 | 20 |

# MEDIUM OF INSTRUCTION English

# 50 MARKS PASSING 20

# WHO SHOULD DO IT?

**Any UG and or PG student**

Hindi Vidya Prachar Samiti's

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## Certificate of Completion

This is to certify that

### Chandela Ronak Narottam

of Class **F.Y.B.Sc** Roll No. **703**

has successfully completed the **Value-Added Course in Data Analytics using R software**

organized by Department of **STATISTICS** and conducted from **19 May, 2021 to 22 May, 2021.**

**Value Added Course 2020-21**

**COURSE CODE RJSTATC01**

Issue Date: 13 July, 2021

Dr. Himanshu Dawda
In-charge Principal

CERTIFICATE ID: RJC-VAC-202021-00525

## STUDENT COMPLETED Certifiacate Course in Data Analytics Using R software YEAR 20-21

| SR NO | NAME | ROLL NO | CLASS |
|---|---|---|---|
| 1 | Chandela Ronak Narottam | 703 | RJSTAC01 |
| 2 | Chauhan Sneha Suryabhan | 705 | RJSTAC01 |
| 3 | Chaurasiya Kavita Patiram | 706 | RJSTAC01 |
| 4 | Khan Shifa Mohd. Wasim | 727 | RJSTAC01 |
| 5 | Khot Akash Dadasaheb | 728 | RJSTAC01 |
| 6 | Mishra Utkarsh Avinash | 737 | RJSTAC01 |
| 7 | Shruti Suresh More | 741 | RJSTAC01 |
| 8 | Pal Akhilesh Jayprakash | 742 | RJSTAC01 |
| 9 | PAL AMITKUMAR SHISH | 743 | RJSTAC01 |
| 10 | Pal Seema Harilal | 745 | RJSTAC01 |
| 11 | Nilesh Ramprasad | 750 | RJSTAC01 |
| 12 | Prajapati Anjali Dayanand | 763 | RJSTAC01 |
| 13 | Shaikh Nemat Kalim | 772 | RJSTAC01 |
| 14 | Shinde Chinmay Sanjay | 775 | RJSTAC01 |
| 15 | Vishwakarma Gopi Panchamram | 788 | RJSTAC01 |
| 16 | Yadav Devraj Dharmendra Kumar | 792 | RJSTAC01 |
| 17 | Gawade Sejal Khemaji | 799 | RJSTAC01 |
| 18 | Mishra Shivam Anand | 800 | RJSTAC01 |
| 19 | Khan Hanifa Mohd Irfan | 802 | RJSTAC01 |
| 20 | Sameera Rizwan Khan | 805 | RJSTAC01 |
| 21 | Aakash Varma | 784 | RJSTAC01 |
| 22 | Rishi Sunil Gupta | 716 | RJSTAC01 |
| 23 | Vaishali Dhananjay Pandey | 754 | RJSTAC01 |
| 24 | Dewashya Dubey | 101 | RJSTAC01 |
| 25 | Gupta sapana shitla prasad | 102 | RJSTAC01 |
| 26 | Zaid Anwar Khan | 104 | RJSTAC01 |
| 27 | Om Umanath Maurya | 105 | RJSTAC01 |
| 28 | Mishra Satyam Jaiprakash | 106 | RJSTAC01 |
| 29 | Ritesh Prabhakar Shirsat | 111 | RJSTAC01 |
| 30 | Jyoti Mahendra Kumar Shukla | 112 | RJSTAC01 |
| 31 | Hardik Sadanand Tiwari | 115 | RJSTAC01 |
| 32 | Shreekant Ankush Kamble | 119 | RJSTAC01 |
| 33 | Ansari mohd Sufiyan sanaullah | 301 | RJSTAC01 |
| 34 | Ladli Bhagat | 302 | RJSTAC01 |
| 35 | Chaudhary murshida khatoon rafique Ahmed | 303 | RJSTAC01 |
| 36 | Akash Kishor Das | 304 | RJSTAC01 |
| 37 | Dixit Pawan Rajkumar | 305 | RJSTAC01 |
| 38 | Aryan Dubey | 306 | RJSTAC01 |
| 39 | Ajay Kumar Dinesh Gaud | 308 | RJSTAC01 |
| 40 | ANIKET RAMASRE GUPTA | 310 | RJSTAC01 |
| 41 | Rohan Rajiv Gupta | 311 | RJSTAC01 |
| 42 | SHIVANI UTTAM HUNDARE | 312 | RJSTAC01 |
| 43 | Janhavi Kulkarni | 315 | RJSTAC01 |
| 44 | Mohammed Tanweer Alam Md Matiur Rehman | 316 | RJSTAC01 |

| 45 | Surbhi Suresh Rane | 320 | RJSTAC01 |
|---|---|---|---|
| 46 | ABHISHEK JOHAN SAHANI | 321 | RJSTAC01 |
| 47 | Raj Namdev Salvi | 323 | RJSTAC01 |
| 48 | SHUBHAM SANJAY SHEDEKAR | 324 | RJSTAC01 |
| 49 | Shinde Pankaj Vinayak | 325 | RJSTAC01 |
| 50 | Siddiqui Mubashera Ansar Ahmed | 326 | RJSTAC01 |
| 51 | Vaishnavi Rupesh Singh | 330 | RJSTAC01 |
| 52 | Vishakha Shrikant Singh | 331 | RJSTAC01 |
| 53 | SAURABH SHIVPRAKASH TRIPATHI | 332 | RJSTAC01 |
| 54 | YADAV NIKHIL | 337 | RJSTAC01 |
| 55 | Priyanshi Yadav | 338 | RJSTAC01 |
| 56 | Prem Gupta | 304 | RJSTAC01 |
| 57 | Manish Patel | 312 | RJSTAC01 |
| 58 | Shaikh Tooba | 314 | RJSTAC01 |
| 59 | Jay Gaikwad | 337 | RJSTAC01 |
| 60 | Shaikh Kaneez fatima abrar ali | 306 | RJSTAC01 |
| 61 | Mishra Saurabh Narendra Kumar Sadhana | 328 | RJSTAC01 |

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