



**MINISTRY OF EDUCATION
PANDIT MADAN MOHAN MALAVIYA
NATIONAL MISSION ON TEACHER AND TEACHING**

TEACHING LEARNING CENTRE

Ramanujan College

University of Delhi

(Accredited with Grade 'A' by NAAC)

**IS ORGANISING
A SHORT-TERM COURSE ON
“DATA SCIENCE”**

(24th January 2022-24th April 2022)

**PROGRAM BROCHURE
&
CALL FOR REGISTRATION-PARTICIPATION**



ABOUT RAMANUJAN COLLEGE

Ramanujan College is a premier institution of University of Delhi, located in the well-known area of Kalkaji, near Nehru Place in South Delhi. Ramanujan College has highly qualified, dedicated and committed faculty members. The college runs 16 graduation courses in different streams of Arts, Humanities, Commerce, Management, and Mathematical Sciences apart from two B.Voc. Courses. It is also the study centre for the students of the School of Open Learning, University of Delhi, the Non-Collegiate Women's Education Board, University of Delhi and the Indira Gandhi National Open University. Ramanujan College has been awarded the prestigious Teaching Learning Centre and National Resource Centre by Ministry of Education, Government of India, and the DDU KAUSHAL Kendra by UGC. Ramanujan College has been accredited grade "A" by the National Assessment and Accreditation Council (NAAC). The college has also been ranked 61st in the National Institute Ranking Framework (NIRF 2020 rankings – College's category). We at Ramanujan College have pioneered online education by training over 1,00,000 faculty members, research scholars, & students of higher education through successful conduct of more than 50 programs since April, 2020.

TEACHING LEARNING CENTER

RAMANUJAN COLLEGE

Teaching Learning Centre (TLC) is mandated by the Ministry of Human Resource Development (MHRD) to organize Faculty Development Programs (FDPs), Faculty Orientation and Induction Programs (FIPs), discipline specific and interdisciplinary Refresher Courses, conferences, workshops, through offline and online modes. TEACHING LEARNING CENTRE, RAMANUJAN COLLEGE Refresher Course has been set up with the aim of "Reaching the Unreached" teachers in terms of regional diversity and geographically remote areas of the country. It has successfully conducted more than 100 learner centric programs since October 2017 and trained over 1 lakh teachers across the country in various discipline specific and interdisciplinary programs. In the TLC Programs distinguished & internationally acclaimed resource persons deliver lectures and conduct sessions on wide ranging disciplines/topics of relevance to benefit the teaching fraternity, corporate and researchers. Ramanujan College is a pioneer in offering offline/online courses for faculty members of higher education institutions and research scholars through the customized Learning Management System (LMS), designed by the College's Research Development and Services Cell. It is predominantly participant-friendly and incorporates evaluation methods and comprehensive feedback systems to judge learning outcomes.

PROGRAM OVERVIEW

The Data Science programme from RAMANUJAN COLLEGE will enable you to understand the Data Science technologies through hands-on project-based approach and prepares you for a career in this domain. This online programme will help you pre-process, modify and manipulate structured datasets. This will help you understand how to code rather than knowing the code.

We at Ramanujan College, always strive to fulfil the aspirations of learners of higher education, and meet the contemporary skill requirements of digital industry. This program on 'Data Science' is towards the fulfilment of this pursuit. Prepare for a rewarding career in data science with data management and analytic skills and strategies that are robust and reliable even in our current ever-evolving economy.

ELIGIBILITY AND REGISTRATION DETAILS

- ❖ The Short-Term course is open to Faculty members, Research Scholars, School and College students.
- ❖ All those interested are required to register and pay a **Non-Refundable fee of INR 3000/-** by visiting <https://stc.rcmoocs.in/>

After successful registration & payment, the participants will receive a confirmation via email. Please keep checking the spam folder of the email as the bulk email sent may end up in the spam folder. An official group has been made for communication with the participants on "Telegram". You are therefore requested to install the Telegram app. The link to join the official group will be provided in the confirmation email.

PROGRAM HIGHLIGHTS

- ✓ Self-paced course
- ✓ Recorded and live sessions
- ✓ Hands on practice through quizzes and assignment
- ✓ Ramanujan College's well acclaimed expertise & high participant satisfaction in conduct of online programs (Over 1 lakh beneficiaries).
- ✓ Complete learning resources including Study Material, access to recordings of Live sessions, Datasets, Software Program Codes.
- ✓ Participants will be able to interact & resolve their queries during the live sessions through chat, audio-video conversation, & screen sharing.

SYLLABUS

(DURATION- 3 MONTHS)

MODULE-1: DATA SCIENCE PROJECT LIFECYCLE.

(Demo Class)

- Introduction to types of Analytics.
- Project Life cycle.
- LMS Walkthrough.

MODULE-2: BASIC STATISTICS.

- Data Types.
- Measure of Central Tendency.
- Measure of Dispersion.
- Graphical Techniques.
- Skewness and Kurtosis.
- Box plot.

MODULE-3: PYTHON.

- Environment Set-up.
- Jupyter Overview.

- Python Numpy.
- Python Pandas.
- Python Matplotlib.

MODULE-4: INFERENCE STATISTICS.

- Normal Distribution.
- Test Hypothesis.
- Central Limit Theorem.
- Confidence interval.
- T-Test.
- Type I and II errors.
- Student's T distribution.

MODULE-5: REGRESSION AND ANOVA.

- Regression.
- ANOVA.
- R Square.
- Correlation and Causation.

MODULE-6: EXPLORATORY DATA ANALYSIS.

- Data Visualization.
- Missing Value Analysis.
- A Correction Matrix.
- Outlier Detection Analysis.

MODULE-7: SUPERVISED MACHINE LEARNING.

- Supervised Learning.
- Dimensionality Reduction.
- Unsupervised Learning.
- Association Rules Mining and Recommendation System.
- Time Series Analysis.
- Model Selection and Boosting.
- Neural Networks.

MODULE-8: NLP.

- Text Mining and NLP.
- Extracting, Cleaning and Pre-processing Text.
- Analysing Sentence Structure.
- Text Classification.

ASSESSMENT & CERTIFICATION

A Minimum of 60% Attendance in all Live Sessions/Classes is a mandatory condition for the completion of the program. Apart from this, there may be periodic assessments in form of Quiz, Assignment, or other objective/subjective evaluations followed by a final assessment at the end of the course.

- 1. 50% Assignment submission should be there.**
- 2. 50% marks to be scored in the quizzes.**
- 3. Final assessment is mandatory for receiving certificates.**

→ All the participants must fulfil the above criteria to be eligible for receiving the E-Certificates.

IMPORTANT INFORMATION

- 1. Registration is mandatory for participation.**
- 2. Attempting and submitting all the quizzes and assignments is mandatory, and each participant should score at least 50% aggregate to be eligible for the completion certificate.**
- 3. Graded certificates on the basis of performance will be awarded to the participants.**
- 4. As part of the Ministry of Education's requirement under the PMMMNMTT scheme, all participants need to submit online feedback for each session.**
- 5. No Objection Certificate (NOC) or Leave is NOT REQUIRED to participate in the Programme.**
- 6. Failing to meet any of the above conditions will result in the denial of completion certificate.**

**FOR FURTHER DETAILS,
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