



दिल्ली विश्वविद्यालय
University of Delhi



Ministry of Education
Government of India

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

TEACHING LEARNING CENTRE
Ramanujan College

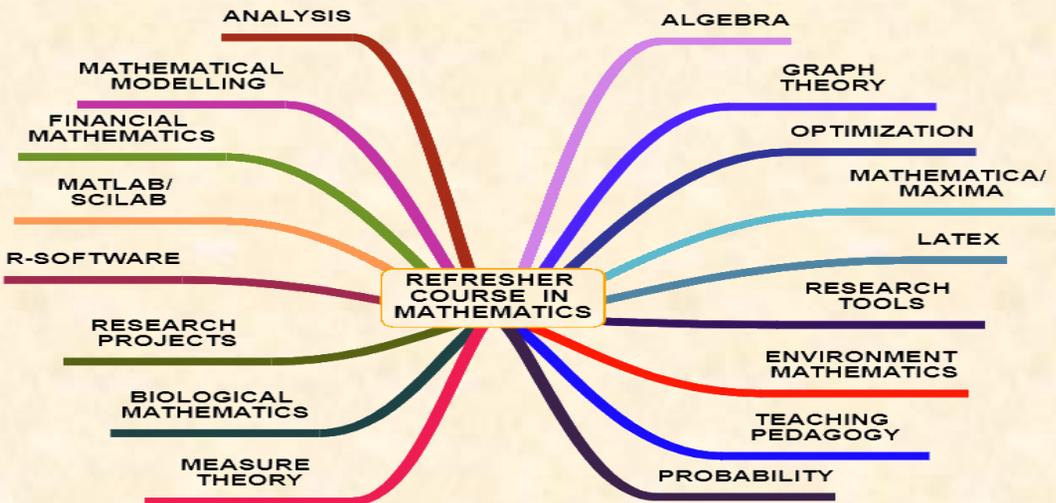
In collaboration with

DEPARTMENT OF MATHEMATICS
Ramanujan College
(Accredited Grade 'A' by NAAC)
(University of Delhi)

REFRESHER COURSE IN MATHEMATICS

16 March – 30 March 2021

CALL FOR REGISTRATION AND PARTICIPATION



Self Paced



No NOC
Required



Beneficial
for CAS

REFRESHER COURSE IN MATHEMATICS

16 MARCH – 30 MARCH 2021

ABOUT THE RAMANUJAN COLLEGE

Named after the great Indian Mathematician, Ramanujan College, formerly known as Deshbandhu College (Evening) is one of the Constituent Colleges 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 sixteen courses in different subjects of Humanities, Commerce, Science and Vocation streams. It is also a Study Centre for the students of the Non-Collegiate Women's Education Board, University of Delhi and the Indira Gandhi National Open University. The College also runs a number of professional courses on Human Rights, Radio Broadcasting, Mass Media, Happiness, Data Sciences and IFRS.

The College has highly qualified, committed, research-oriented and talented teaching faculty who encourage inter-disciplinary approaches to the teaching-learning process through innovation projects, conferences, seminars, talks and workshops. The teaching faculty adapts new pedagogic methods and uses latest available technology for an effective implementation of the curriculum.

Ramanujan College has been accredited grade "A" by the National Assessment and Accreditation Council (NAAC). The college has been ranked 61st in the National Institutional Ranking Framework (NIRF 2020). The College has acquired many prestigious schemes of Ministry of Education (MoE), erstwhile Ministry of Human Resource Development (MHRD):

- Deen Dayal Upadhyay Centre for Knowledge Acquisition and Up-gradation of Skilled Human Abilities and Livelihood (KAUSHAL) in 2016;
- Teaching Learning Centre (TLC) under the aegis of the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) in 2017;
- National Resource Centre (NRC) for developing specialized Online and MOOC courses for teachers in the disciplines of Ethics, Human Rights and Environment in 2018.

Ramanujan College is the only institution in the University of Delhi which has been sanctioned KAUSHAL Kendra and the second college of the University of Delhi to be awarded TLC. The college has also collaborated with academic institutions abroad for student-teacher exchange programmes and also for providing opportunities for students of the college to study abroad.

We at Ramanujan College emphasize on the holistic development of personality, meaningful exposure to real world, and inculcating practical skills amongst our students apart from ensuring academic excellence.

ABOUT THE DEPARTMENT OF MATHEMATICS

The Department of Mathematics is one of the long-established departments of Ramanujan College. Earlier, B. A. Programme Mathematics and few courses (Business Statistics and Business Mathematics) of B. Com. (H) were handled by the Department of Mathematics. In the academic session 2013-14, the Department of Mathematics offered honours course in Mathematics under the FYUP scheme of courses which was later re-framed into three-year undergraduate course. Since 2016, the Department is admitting students in B.Sc. (H) Mathematics under the Choice based credit system (CBCS). Apart from honours course, the Department also offers Mathematics as a Discipline and Skill Enhancement Course in BA Programme and Generic Elective Course to other honours students.

The Department aims to create a solid foundation for the assimilation of mathematical concepts and structures and build mathematical skills like creative, logical and analytical thinking. Software such as Mathematica is used to increase the understanding of the fundamental mathematical concepts. It has a vibrant Society – *RamanuGen* that promotes student's interests in the subject by organizing activities with their enthusiastic involvement.

The Department has 9 faculty members with their research interests lying in Algebra, Graph Theory, Complex Analysis, Operator Theory and Applied Mathematics. The faculty is research-oriented and has been publishing research articles in peer reviewed national and international journals (specifically Scopus and Web of Science Journals). Faculty members have also presented their work on international platform as well.

ABOUT THE TEACHING LEARNING CENTRE

The Ministry of Education (MoE), erstwhile Ministry of Human Resource Development (MHRD), launched the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMNMTT) in 2017. One of the main objectives of this mission is to facilitate teacher training by constituting Teaching Learning Centers in various institutions of higher education in our country. The Teaching Learning Centers (TLCs) are mandated to promote on a continuous basis the learning of new pedagogical practices, methodology of forming discipline-specific curricula and creating new learning materials (including e-content) for use by the teachers in colleges and postgraduate departments. It is envisioned that the TLCs will accelerate the teaching-learning process by encouraging independent critical and creative thinking and facilitating research for subject-specific growth.

TLC Ramanujan College with the motto "Reaching The Unreached" emphasizes the need to change the role and workings of a teacher from a mere disseminator of information and knowledge to the one who helps students to develop critical, analytical skills, capabilities to generate information, the ability to reason and to

empower themselves through open sources and globally oriented digitalized self-learning processes. The focus is not only on ‘what is taught’ but also importantly, to ‘the way it is taught,’ to develop and enhance individual education, that will eventually go on to define how the future generations will work and live.

TLC, Ramanujan College offers Faculty Induction Programs (FIPs) for newly recruited faculty and Faculty Development Programs (FDPs) & Refresher Course (interdisciplinary and discipline specific) for teachers with experience who wish to update their field of knowledge, expertise, and skill with the latest available research, resources, and technology. The centre has conducted programmes both in the online as well as the offline modes. It is run by the initiative of the teachers of the college and is supported by an array of distinguished resource persons from different fields.

During Covid-19 Pandemic, TLC Ramanujan College rolled out programmes in the online mode, catering to the knowledge and skill deficit of the academics of the entire country. The impact of the programs has been extraordinary. We have trained more than 1 Lakh teachers across India and is compelling evidence of quality training programmes. The College has created a customised Learning Management System (LMS) platform which is not only predominantly participant friendly but also incorporates within it evaluation methods and comprehensive feedback systems to judge learning outcomes. The Blockchain technology is utilized and there is an inclusion of QR code, Barcode and Blockchain hash on our certificates, which provides authenticity and verifiability of our certificates.

The pandemic has brought about a transition in how we used to look up at things. In fact, the transformation that the TLC Ramanujan College has experienced during this time has been phenomenal. We have learned the profound impact of ICT in education and how we should transform pedagogy radically. We have created meaningful content for the masses, and with a strong 6.8 million views and 18k subscribers on our [YouTube Channel](#), we are looking forward to blended learning across different knowledge domains.

ABOUT THE REFRESHER COURSE

With the advent of technology, e-learning is rapidly gaining importance and momentum. With the government aiming at digitizing India with its “Digital India” Initiative, educational institutions are also working in tandem to help fulfill the goal.

The Refresher Course in Mathematics is an attempt in this direction to impart quality education in Mathematics to the undergraduate teachers of the country in the online mode. It will be of two weeks duration (16 March – 30 March 2021), with 12 working days (excluding Sundays and Gazetted Holidays). The course will consist of minimum of 20 hours of video content (in the form of pre-recorded videos and live lectures) and 20 hours of non-video

content. The course is being offered in a highly flexible format and can be done at own pace and within stipulated time. There are built-in assessment exercises and activities as part of the academic progression in the course. At the end of the course, there will be a terminal assessment which will be conducted online. Successful participants of the online refresher course will be certified.

The main objective of the refresher course is to equip and motivate the participants with basic as well as advanced knowledge of various topics in the field of Mathematics for quality teaching and research. The Programme is discipline specific and will provide a forum to participants to keep themselves abreast of the latest advances in various areas of Mathematics with experienced and eminent resource persons from reputed institutions like Indian Institute of Science (IISc), Indian Institute of Technology (IIT), Indian Statistical Institute (ISI), National Institute of Technology (NIT), Shiv Nadar University, University of Kashmir, University of Jammu, Delhi Technological University, South Asian University, TERI School of Advanced Studies and University of Delhi.

For the notification regarding recognition of the programmes conducted by TLC Ramanujan College for Career Enhancement Scheme (CAS) and the sanctity of the online courses for CAS, visit the [link](#).

TENTATIVE LIST OF SPEAKERS

<p>Prof. C. S. Lalitha Professor, Head and Dean Faculty of Mathematical Sciences University of Delhi</p>	<p>Prof. S. Arumugam Adjunct Professor Amrita Vishwa Vidyapeetham, Coimbatore and Ramanujan College, University of Delhi</p>
<p>Prof. Purnima Gupta Director, Central Board of Directors, State Bank of India Adjunct Professor, Ramanujan College, University of Delhi</p>	<p>Prof. V. Ravichandran Professor Department of Mathematics National Institute of Technology Tiruchirappalli</p>
<p>Prof. Shobha Bagai Program Coordinator B.Tech. (IT and Mathematical Innovations) & Professor in Mathematics Cluster Innovation Centre University of Delhi</p>	<p>Prof. Amber Habib Professor and Dean Undergraduate Studies Department of Mathematics School of Natural Sciences Shiv Nadar University</p>
<p>Prof. E. K. Narayanan Professor Department of Mathematics Indian Institute of Science Bangalore</p>	<p>Prof. Jagdish Chand Bansal Professor Department of Mathematics South Asian University</p>

Prof. Shariefuddin Pirzada Professor Department of Mathematics, University of Kashmir	Prof. Rahul Roy Professor Theoretical Statistics and Mathematics Unit Indian Statistical Institute Delhi
Prof. S. Sivaprasad Kumar Professor & Head Department of Applied Mathematics Delhi Technological University	Prof. Nilam Professor Department of Applied Mathematics Delhi Technological University
Prof. K.S. Charak Professor Department of Mathematics University of Jammu	Prof. Arvind Ayer Professor Department of Mathematics Indian Institute of Science Bangalore
Prof. Sanjay Pant Professor Department of Mathematics Deen Dayal Upadhyaya College University of Delhi	Prof. Deepa Sinha Professor Department of Mathematics South Asian University
Prof. Vivek Kumar Aggarwal Professor Department of Applied Mathematics Delhi Technological University	Prof. Prateek Sharma Professor Department of Energy and Environment TERI School of Advanced Studies
Dr. Vamsi Pritham Pingali Assistant Professor Department of Mathematics Indian Institute of Science Bangalore	

EXPECTED OUTCOMES

After successful completion of the course, the participants will gain knowledge of important topics of Mathematics such as Analysis, Algebra, Graph Theory, Mathematical Modeling, Probability, Financial Mathematics, Biological Mathematics and Environmental Mathematics.

There are various software training modules like Matlab/Scilab, Mathematica and R-Software which will enable learner to apply them in their research and in teaching. There is a special focus on mathematical typesetting software LaTeX, which will come handy to all the participants enabling them to write research paper in a very professional outlook.

An extra and much needed part of this course is 'Writing Research Project' and tools for quality research.

ELIGIBILITY

- ❖ The Refresher Course is open to Faculty members (regular/ad-hoc/temporary) from any Indian university/college and registered M.Phil./ Ph. D. research scholars in the disciplines of Mathematics, Statistics, Computer Science and its allied fields.
- ❖ All the participants are requested to register online **on or before 15th March 2021 by browsing the following link:**
<https://forms.gle/f6AFnGR4NM4ss7J18>
(See the details provided below regarding the payment process).
- ❖ Registration for all the participants is mandatory.

REGISTRATION PROCESS

STEP-1

The participants must make the payment of INR 1050 (**Non-Refundable**) by NEFT/UPI/IMPS to the below mentioned account and take a screenshot of the payment:

Bank: ICICI Bank

Branch: Kalkaji, New Delhi-19

A/C Name: Principal Ramanujan College

A/C No: 072001003912

IFSC: ICIC0000720

STEP-2

Use your Gmail Account (make one if you don't have) or institutional account (if it is powered by Google) for registration process. Make sure to use the same credentials during the whole duration of the programme for all further communications.

STEP-3

Participants need to fill up the online registration form:

<https://forms.gle/f6AFnGR4NM4ss7J18>

with all the required details within the final date of submission using the Gmail account (as mentioned in Step-2). Please attach the screenshot of the payment while filling the registration form. Please take utmost caution in filling the payment transaction details in the form. Kindly take note that late applications and payments will not be accepted. The last date of registration is 15th March 2021. After successfully submitting this form, 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.** If there is failure in the receipt of confirmation email, then please register again.

An official group has been made for communication with the participants on "Telegram." You are therefore requested to install the Telegram App either from the Play Store or App Store. The link to join the official group will be provided in the confirmation mail.

IMPORTANT:

- The Refresher Course begins on 16th March 2021. The detailed day-wise program schedule will be communicated only to the registered participants before the start of FDP. Please monitor the corresponding Telegram Group regularly.
- The sessions on various themes of the FDP will be conducted either on a live basis or through the Ramanujan College Web portal.
- As this FDP is being organized under the prestigious PMMMNMSTT scheme of Ministry of Education, we at TLC, Ramanujan College, give prime importance to willing and serious participants who are eager to learn.
- Attempting and submitting all the quizzes and assignments are mandatory to avail of the programme completion certificate. The average score of all the quizzes must be at least 40%.
- Graded certificates on the basis of performance will be awarded to the participants.
- As part of the Ministry of Education's requirement under the PMMMNMSTT scheme, all participants need to submit online feedback for each session.
- Failing to meet any of the above conditions will result in denial of a certificate of completion to the participants.

For further queries, please mail us at:
mathematics@ramanujan.du.ac.in

TEACHING LEARNING CENTRE, RAMANUJAN COLLEGE

DIRECTOR

DR. S. P. AGGARWAL (PRINCIPAL)

ASSISTANT DIRECTORS

DR. SUMIT NAGPAL, Assistant Professor, Department of Mathematics
DR. NIKHIL RAJPUT, Assistant Professor, Department of Computer Science
DR. VIBHASH KUMAR, Assistant Professor, Department of Commerce and
Management Studies

TLC STAFF

Mr. Akhil Raj and Mr. Prashant

ORGANIZING BOARD OF THE REFRESHER COURSE

CONVENOR

DR. RAJESH SINGH, Assistant Professor, Department of Mathematics

CO-CONVENOR

DR. VIRENDRA KUMAR, Assistant Professor, Department of Mathematics

ORGANIZING MEMBERS

DR. MEGHA AGARWAL, Assistant Professor, Department of Mathematics
MR. PAPPU, Assistant Professor, Department of Mathematics
DR. SUMIT NAGPAL, Assistant Professor, Department of Mathematics
MR. RAHUL SINGH, Assistant Professor, Department of Mathematics
MR. DEEPAK KUMAR, Assistant Professor, Department of Mathematics
DR. DEEPAKSHI SHARMA, Assistant Professor, Dept. of Mathematics
MR. SANYAM GUPTA, Assistant Professor, Department of Mathematics

TECHNICAL TEAM

DR. NIKHIL RAJPUT, Assistant Professor, Department of Computer Science
MR. VIPIN RATHI, Assistant Professor, Department of Computer Science

STUDENT TEAM

Ayush Kumar, Arpit Dawar, Kapil Lohia, Ritik Singh, Sakshi Singh, Janhvi
Singh, Rimjhim Chakraverty, Devesh Tewari

Ramanujan College

(Accredited Grade 'A' by NAAC)

University of Delhi

H Block, Kalkaji, New Delhi - 110019

Email: mathematics@ramanujan.du.ac.in

Website: <http://www.ramanujancollege.ac.in>, <https://tlcramanujan.in>