



MATHEMATICS TRAINING AND TALENT SEARCH PROGRAMME

Skill Building in Higher Mathematics Since 1993



The Mathematics Training and Talent Search (MTTS) Programme started as a four-week intensive summer training programme and has been organised since 1993 at various centres in India. Since its inception, the programme has been funded by the National Board for Higher Mathematics (NBHM), an apex body of the Department of Atomic Energy, Government of India.

From the beginning, MTTS has been organised by a group of committed mathematicians, under the dynamic leadership of Prof. S. Kumaresan - the first recipient of the INSA Teacher Award in Mathematics. MTTS has been one of the most effective, and unparalleled, training programmes, which has made a significant impact on the mathematical scene in India.

ABOUT MTTSTRUST

MTTS Trust, a non-profit educational trust, was registered in December 2016. Since 2018, all programmes under the MTTS umbrella are being conducted by the MTTS Trust with objectives that include the following:

- (i) to provide training in mathematics to students and teachers in India,
- (ii) to promote higher study and research in mathematics,
- (iii) to bring out lecture notes and textbooks of high quality in mathematics and
- (iv) to support academic institutions in India for the development of mathematics in the country.

More details on MTTSTRUST can be obtained from www.mtts.org.in/mtts-trust

SALIENT FEATURES OF MTTTS CAMPS

The teaching methodology in MTTS is radically different from regular classrooms. Resource persons refrain from delivering well-polished lectures. All the sessions are highly interactive, and the participants are encouraged to think, experiment, formulate and prove mathematical results on their own at every stage. The principle followed in this programme, is best explained in the words of Lesbegue, "The best way to teach students is to think in front of them". Some of the



regular features in the MTTTS camps are: counselling sessions, thinking and writing assignments, students seminars and group discussions. MTTTS camps provide an effective platform for the participants to interact with peers and experts in the fields. MTTTS gives preference to participants from rural backgrounds, from remote areas, and to girl participants.

ACADEMIC PROGRAMMES

The MTTTS Programme started as a four-week intensive summer training programme in 1993. The academic programme in these camps: Level-O, Level-I and Level-II meant for B.Sc 2nd year, B.Sc. 3rd Year, and M.Sc. 1st year students respectively, catering to around 250 students every summer. Usually, four fundamental topics in mathematics are taught in each Level by a highly committed team of faculty members from various leading institutes in India. The selection of students depends mainly on their consistent academic record and the recommendation letter of a teacher closely acquainted with the student. The programme gives individual attention to every student and no student feels left out. After four weeks of intensive training, one experiences a remarkable improvement in students' critical independent thinking, mathematical writing and problem-solving skills. In fact, the whole approach of these students towards mathematics changes.

INITIATION INTO MATHEMATICS (InitMath) and PEDAGOGICAL TRAINING FOR MATHEMATICS TEACHERS (PTMT)

In order to provide opportunities to a larger number of mathematics students and teachers, the MTTTS team came up with regional level programmes of shorter duration and modelled on the MTTTS methodology. Based on the experience of over two decades, two initiatives to serve the mathematics community better were started, namely Initiation into Mathematics (InitMath, formerly known as mini-MTTTS),

and Pedagogical Training for Mathematics Teachers (PTMT). So far 60 InitMath and 12 PTMT camps have been organised in different parts of the country.

ONLINE FOUNDATION COURSE IN MATHEMATICS (OFCM)

'Foundations' is a unique course taught in MTTTS camps to initiate students into some fundamental topics of mathematics. After attending a 2-week course on Foundations in the MTTTS camps, the participants experience a change in their attitude, problem solving abilities and logical and analytical thinking. They also acquire a high level of confidence for self-study in order to undertake courses in higher mathematics.

Since 2020, the MTTTS Trust organises 6 parallel Online Foundation Course in Mathematics (OFCM) camps every year, covering the entire country. This involves over 500 students, 100 mentors and 20 resource people. One of the six camps is also live streamed on the MTTTS YouTube channel, which is usually watched by a few hundred students and they are guided online by few experienced mentors.

ONLINE SHORT COURSES

Given the unprecedented situation in 2020 due to the pandemic, MTTTS was forced to reinvent itself and conduct the summer camp online. The success of this venture led to short courses being offered online. These courses organised by the MTTTS Trust are on advanced topics in mathematics at levels above the MTTTS courses and are delivered by experts in the respective fields. Each course has about eight-ten online sessions consisting of 60 minutes of lecture followed by discussion by the participants in groups for about 40 minutes.

MTTTS DURING PANDEMIC

After extensive discussions, deliberation and experimentation, MTTTS devised a very effective online teaching methodology, without compromising the highly interactive teaching methodology of MTTTS, during



the two years of the pandemic. It not only conducted regular annual activities during this challenging time, but it in fact expanded its reach by introducing new activities such as Online Foundation Course in Mathematics (OFCM) and Online Short Courses in Mathematics. Moreover, the online teaching methodology followed by MTTTS has been regarded as a role model by many experts.

CONTRIBUTIONS OF MTTTS TO INDIAN MATHEMATICS

The following table indicates MTTTS camps and number of participants in various categories since 1993.

MTTS Camps at Glance

Camps	No. of Camps	No. of Participants
Level O (4 weeks)	76	3600
Level I (4 weeks)	30	1150
Level II (4 weeks)	30	1200
InitMath/Mini-MTTTS	60	2500
PTMT (1-2 weeks)	12	500
OFCM	18	1100
Online Short Courses	8	500

Participation at Glance

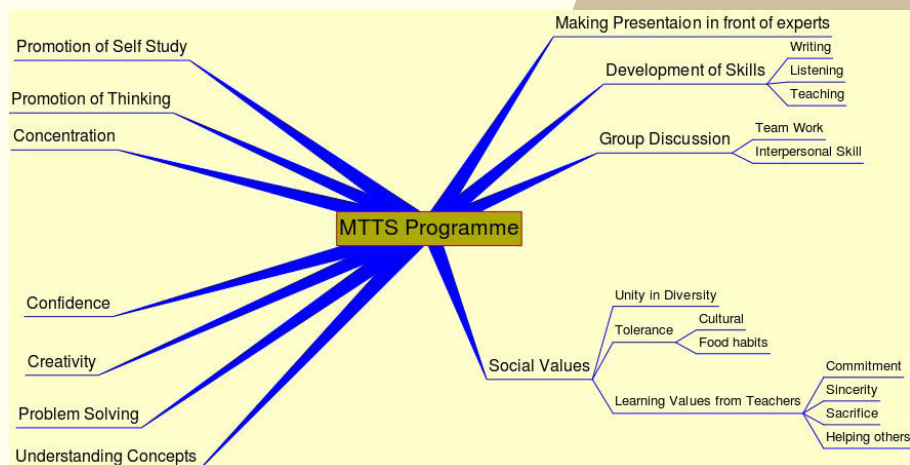
Teacher participants in MTTTS	500
No. of states where camps held	24
Ph.D. Finished/Pursuing (<i>Appx</i>)	500
MTTS Alumni working as Faculty (<i>Appx</i>)	1000
Working in Corporates (<i>Appx</i>)	500
Female Participants (<i>Appx</i>)	3600
Male Participants (<i>Appx</i>)	4400
Resource People Participation (<i>Appx</i>)	150
Students Mentors (<i>Appx</i>)	150

More than 8,000 students and 500 teachers have been trained, using the MTTTS methodology. Over 500 MTTTS students either have obtained their Ph.D. degree in Mathematics or are in the process of finishing their degree from prestigious institutes in India and abroad. More than 1000 have gone on to become mathematics teachers at various levels from schools to universities and research institutes. This surely speaks volumes about the contribution of this programme. More importantly, it is widely acknowledged that the quality of the students and teachers trained in MTTTS is distinctly superior.

The programme has inspired a large number of girl students, and students coming from rural areas, to become professional mathematicians in many of the leading institutions. Several books have been written by faculty based on years of experience in MTTTS. These books have been widely acknowledged by teachers and students across the country and abroad.

MTTS Founding Director, Professor Kumaresan has recorded over 250 video lectures on various fundamental topics in mathematics, which are available on his YouTube channel and these lectures are followed widely by mathematics students and teachers.

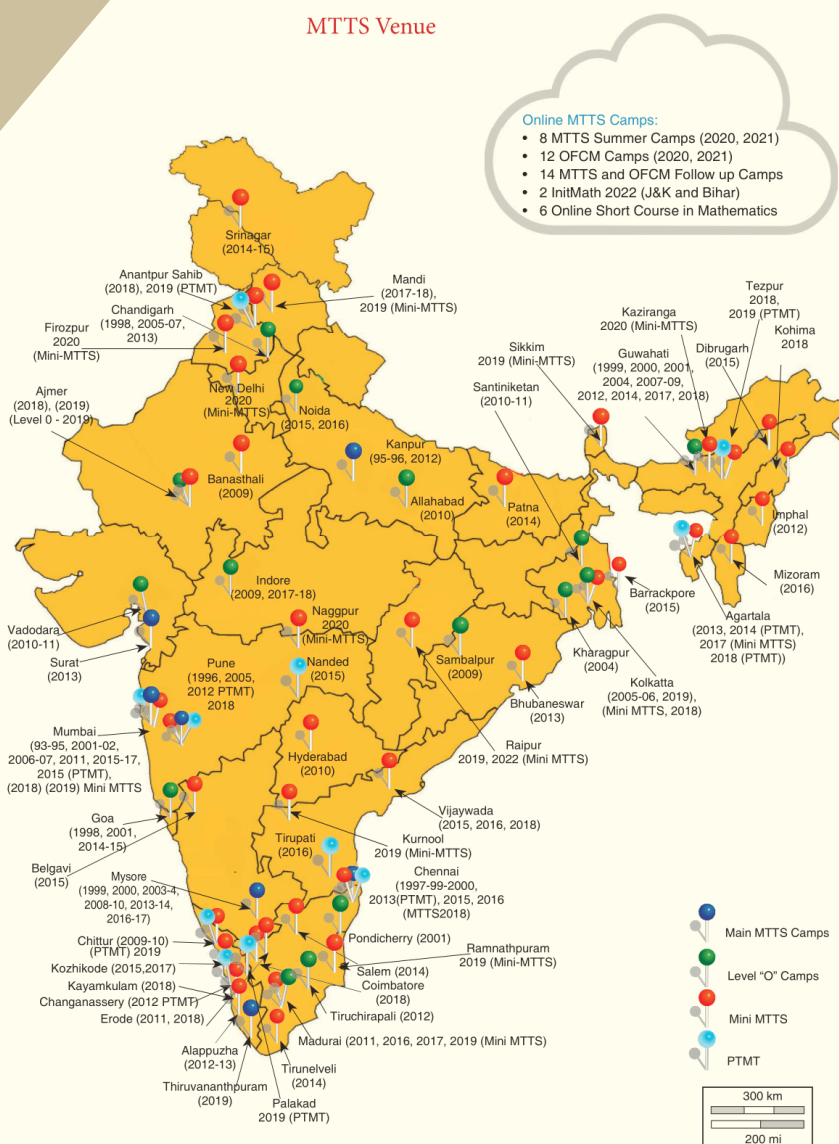
MTTS believes in an overall development of students. Some of the benefits of MTTTS are highlighted in the following picture.



SKILL DEVELOPMENT IN MTTTS

MTTTS has tried to reach out to all parts of the country over the years. The picture below depicts some of the MTTTS Camps organised at various venues in India.

MTTTS Venue



FUTURE PLANS and APPEAL

MTTTS has inspired a large number of students to choose mathematics as a career and to become highly competent mathematicians and mathematics teachers at various levels. However, in a vast country like ours, organising a limited number of such camps is not sufficient. The MTTTS Trust would like to organise more camps in the country, so that it can help students

to get exposed to and learn mathematics in a proper manner and assist mathematics teachers in improving their teaching methodology.

The MTTTS TRUST solicits support from its alumni and well-wishers. For more details, please visit <https://mtts.org.in/donations>

The following are some headings under which contribution can be made:

1. Organising an InitMath/MTTTS/ PTMT/OFCM camp at a particular location;
2. Support for women participants;
3. Scholarship for top performing participants;
4. Procuring books for distribution to participants;
5. Publication of MTTTS souvenir, articles and books;
6. Maintaining the websites & online system portals
7. Travel expenses to identify training needs;
8. Screening process of MTTTS Camps;
9. Infrastructural facilities for the camps;
10. Maintenance and running expenses of the trust;
11. General donation.

The MTTTS Trust has been registered under section 80G (5) (vi) of the Income tax act 1961 and hence donations are eligible for Income tax benefit of 100% deduction under the Section 80G.

As per the existing provisions and income tax rules, we CANNOT accept foreign contributions and anonymous donations.

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